Sc-07B

SPECIAL LIBRARIES

Dr B R AMBEDKAR OPEN UNIVERSITY
Hyderabad
2004

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First Published 1999

This text forms part of an Open University Course.

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Lr. No. 1031/Dr. BRAOU/DMP/PTG/F. No.01/Jo.No.18/2004-2005/Dt. 11.11.2004/ No of Copies - 200

Printed at : **CREATIVE OFFSET PRINTERS,** Moosarambagh, Hyderabad-500 036. Ph : 27642538

COURSE-07(B) : SPECIAL LIBRARIES

The Course Special Libraries (Elective Course) conforms to the syllabus of the Master of Library and Information Science (MLISc) offered by Dr B.R. Ambedkar Open University. As you are familiar with the structure of the programmes, syllabus and the courses, the print material developed by the Open University has some distinct features. For the sake of convenience, the syllabus is divided into block, each of which comprises a number of units. Each unit generally covers a specific area of the subject. The units are prepared by specialists in accordance with the format so designed to enable you read and understand them without much difficulty. Each unit begins with the structure (contents list) and statement of its aims and objectives, followed by an introduction to the content of the unit. The subject contents of a unit are divided into sub-themes and are numbered up to three levels for easy reference and comprehension. Each unit ends up with Let Us Sum Up, Glossary, Assignments, References and Recommended Books, and Model Examination Questions.

Special libraries are usually established in research laboratories, research and development establishments, industrial and commercial organisations, training institutions and government departments. The functions of special libraries differ from those of other types of libraries, such as academic and public libraries. The nature of special library and its services depend on the objectives of the parent organisation to which they are attached. The first four units of Block-I covers the characteristics, functions and evolution and also provides with examples of special libraries in India. Special libraries may be small and the number of staff employed may be less but they good finances to meet the collection development, especially microdocuments and non-print material. Block-II deals with various management aspects of special libraries and information centres. Information needs of special library users differ from user to user of the same organisation and those other organisations. They need specific and personalised information services. This calls for not only searching for information from various databases across the globe but also mutually sharing the available information through networks. All these aspects have been discussed in the units 9-13 (Block-III). There are several organisations and professional bodies which have been promoting the special libraries and information centres at the international and national levels. Training for Special Librarianship is an important aspect in special librarianship, which helps to understand the institutions and the facilities available to the personnel to man the special libraries and information centres. These aspects have been covered in the last block of the Course.

The number of special libraries and information centres has been increasing in our country in recent decades. Well-trained professionals with a good academic background and skills to manage the special libraries are the need of the hour. The Course on Special Librarianship was offered to the students at the Bachelor's Degree in Library and Information Science during the years 1985 to 1992 and later it was discontinued. The course material prepared by the Course Team (Shri K.A. Raju, Shri Vijaya Kumar, Ms. Sitarambai and Shri B.P. Shenoy) under the editorship of Shri A.K. Dasgupta has helped as a background material for designing and developing the present course material.

The Course aims to provide an overview of the various aspects of understanding special libraries and information centres. The specific objectives of the Course are -

- to provide an overview of the nature, characteristics, functions and services of special libraries and information centres with examples.
- to acquaint the learners with various general and special aspects of managing special libraries and information centres, especially with regard to their infrastracture, finances, personnel and collection development.

BLOCK - I : INTRODUCTION TO SPECIAL LIBRARIES

Earlier special libraries referred to special collections in general libraries that limited to collections to a single subject area. Later special libraries are regarded as institutions serving a special group of users working for a common purpose. Now special libraries came to be identified as specialist information service centres, designed to meet the research needs of specialists of an organisation. The evolution of special libraries into information centres is mainly based on several factors such as exponential growth of publications, need for accurate and timely information, etc. The advancements in information technology have really promoted the value-added information services to the users. Many of the special libraries and information centres are now turning into Electronic Libraries, Digital Libraries or Virtual Libraries.

Unit-1 lists various definitions provided by eminent librarians and information scientists and then discusses the characteristics, need and purpose, and also the functions of Special Libraries.

Unit-2 explains the various factors which have been contributing to the development of special library and information centres. It also brings the concepts like `digital library'. `information scientist' , `information officer' etc. Information systems and centres at the international and national level are also described with examples.

Unit-3 deals with Special Libraries and Information Centres in India. It first categorises the parent organisations, where special libraries are located, into five major groups. The groups are R&D Organisations, Government Departments, Business, Tradee and Industry, Socio-Economic Development Institutions and Training Institutions. The first two categories are dealt in this unit.

Unit-4 discusses in detail the Libraries for Business, Trade and Management, Socio-Economic Development Research Institutions and Training Institutions.

UNIT - 1 : SPECIAL LIBRARY - DEFINITION, CHARACTERISTICS AND FUNCTIONS

Structure

1.0 AIMS AND OBJECTIVES

This unit aims to introduce to you the definition, characteristics, purpose and functions of special libraries.

After studying this unit, you should be able to

- give definitions, characteristics, need and functions of special libraries
- trace the relationship of special libraries with their parent organisation
- discuss the role of special libraries in research and development

1.1 INTRODUCTION

Libraries can be broadly classified into four different categories, namely, National Libraries, Public Libraries, Academic Libraries and Special Libraries. In the case of the first three categories, the nomenclature of each one is self-explanatory. For example, the public libraries are open to one and all, that is, public and their holdings are of general in nature. The academic libraries are attached to and/or form part of the academic institutions like universities, colleges and schools and cater to the needs of the teachers and students for academic pursuits. The collections are also related to the academic programmes/ courses of these academic institutions.

1.2 DEFINITIONS

Ever since the formations of the Special Libraries Association (SLA) in United States of America, in 1909 attempts have been made to propose an appropriate definition of special library. The article on special libraries in the Encyclopedia of Library and Information Science (Vol.28. p.390-4) presents a list of 29 proposals for definitions. It lucidly places before us that the generally acceptable definition is yet to emerge.

Let us examine some of the definitions of Special Libraries:

1910: John Cotton Dana (Founder President of the Special Libraries Association): *These special collections of books, reports and other printed material are so varied in their character and in the use made of them, that no definition will any longer statisfactorily include them all,. ("President's opening remarks" Special Libraries 1(1909); p.1-5)*

1915: Ethel Johnson *considered service as the most important criterion of a special library, and specifically ranked its service as more important than its subject matter. ("Special Library, and some of its problems". Special Libraries 6(1915); p.158)*

1925 : A.F. Ridley : *A collection of information covering a specific field which may be administrated by a special staff and for the service of a limited clientele. ("Special Libraries and Information Bureaux - Their development and future in Great Britain". Library Association Record 1925 , 3(12); p.243)*

1945: R.S. Hutton : *A Special Library is collection of information covering a specific subject or field of activity and in charge of some one trained in its application. ("Origin and history of ASLIB". Journal of Documentation 1945, 1(1); p.11)*

1949 : S.R. Ranganathan *considered specialisation in a subject to be the characteristic that makes a library a special library ("Special Librarianship - what it connotes?" Special Libraries 1949, 40(9); p.361-7).*

1950 : D.V. Arnold : *The dominating spirit controlling the library must be the same as that, which controls the particular institution ("Why special libraries?" Proceedings of the Annual Conference. London: The LA, 1950; p.27)*

1952 : Linda Morley *defined a special library as a service "A Service organised to make available whatever knowledge and experience will further the activities of a particular organisation all members of which have the common objectives or their organisation although different functions. (Contributions towards a Special Library Glossary. 2nd ed. New York: Special Libraries Association, 1950. p.19)*

1955 : D.J. Foskett *distinguished public and university libraries from special libraries in terms of the corporate or parent entity. The readers in university and public libraries pursue their own individual ends, and the policy of the university and the local authority is to provide means for them to do so. It is not as a rule; part of the policy to organise them in the pursuit of a common end; special libraries on the other hand serve organisation with a clearly defined group policy.*

He also stressed information as a characteristic of special library. It is the source of knowledge, rather than recreation and it must collect all the information that will help its organisation to fulfil its policy and bring its work to the fruition quietly, and in some cases at least, profitably. ("Special Libraries", Proceedings of the Annual Conference. London: The Library Association, 1955. p.69-70)

1958: UNESCO: These libraries may be attached to various bodies, such as a parliament or a Government department, a scientific or other research institution, a learned society, professional association, museum, industrial association, chamber of commerce, etc., Special Libraries are primarily designed to serve a limited number of experts, scientists, research workers, etc. and not coming within any of the categories of national libraries, university libraries and school libraries ("Needs of Special Libraries". UNESCO Bulletin for Libraries 1958, 10(11-12): p.254)

1964 : P. Wasserman : The Special Library has been historically, and remains today, an integral, functioning unit of the organisation in which it is found, dedicated to the proposition that it exists only to offer the information which the organisation needs in order to build, prosper, advance and achieve its ultimate ends. ("One of a species - The Special Library Past, Present, and Future". Library Journal, 1964, 89(4); p.797)

1976 : Shirley Echleman presented a suggested definition which synthesises the earlier and less general proposals by presenting four characteristics: (1) Organised under the sponsorship of a parent organisation which provides the funds for its support and continuance; (2) Assinged the mission of acquiring, organising and providing access to information and knowledge so as to further the goals of its parent enterprise or organisation (whe the parent organisation may not have direct library objectives; (3) Assembling a physical collection of information, knowledge, and / or group of formats; (4) Administered by a librarian or a specialist in the subject(s) covered or format(s) included. ("Towards the New Special Library". Library Journal, 1976, 101(1);p.91-94)

1.3 CHARACTERISTICS OF SPECIAL LIBRARIES

Another way of defining the special library, is to compare it with other categories of libraries and show how it differs from them by using its distinguishing characteristics.

The six distinguishing characteristics of a special library are: (a) Location of the library, (b) Subject orientation of the library collection, (c) Collection of material in special formats, (d) Specialist user groups, (e) Physical size of the library; and (f) Emphasis on information services.

We shall now discuss the major characteristic features of special libraries:

1.3.1 Location of the library

Normally the special libraries are located in different kinds of institutions, organisations, and enterprises.

Examples of such parent bodies are:

Scientific Research Institutions
Research and Development (R&D) Organisations
Social Sciences and Humanities Research Institutions
Training Institutions
Government Departments and Agencies
Parliament and Legislative Houses
Learned Societies
Professional Associations
Business, Trade and Industrial Enterprises
Chambers of Commerce and Industry, Banking and Financial Institutions;
Newspapers and Publishing Houses
Voluntary Agencies

(Appendix lists out examples of various organisations (parent bodies) in India, where special libraries are located)

The Special Libraries are assigned the task of acquiring and organising library material and providing services for the furtherance of the goals and objectives of parent bodies. The parent and the public authorities set up libraries to enable the user group (teachers, students, and the public) to pursue their own individual goals.

1.3.2 Subject Orientation

The collections of the national, public and academic libraries consist of material on a wide range of subjects. The collection of special library, on the other hand, are generally limited to specific subjects or groups of allied subjects. The reason of such subject specialisation is that the parent bodies require information on subjects relevant to their field of activities. The collections would, therefore, be comprehensive on such subjects, but they would also contain selective material on related or allied subjects of interest of the parent body. For example, the library attached to a leather research institute would house a comprehensive collection of leather chemistry and technology. The collection would also contain documents on other branches of science, e.g., physical and analytical chemistry, and statistical techniques, which are required in day to day research of the institute. In addition, the library should acquire material on social and economics issues, e.g. documents on the communities involved in leather processing, markets and consumers.

Due to the emphasis on specific subjects, special libraries are often referred in terms of their subject specialisation, for example, engineering library, chemical library, banking library, management library.

1.3.3 Material in Special Formats

The very nature of the activities of the parent bodies often requires access to material in special formats i.e., material other than books and journals e.g., the technical managers of industrial enterprises always need information about the latest technologies. This information is available neither in books nor journals, but in patents. Thus, the special library attached to an industrial enterprise is required to build up a patent collection. The software personnel/ programmers of a software company would frequently need the catalogues/brochures of the software to enable them to select the appropriate ones for development of the application software. It is therefore necessary for the library to acquire catalogues of different software firms.

A substantial part of the collection in special libraries, therefore, consists of different types of non-book material. Many libraries have predominant collection of such special material and are known by the special formats e.g., Patent Library (Patent Office Library in Calcutta, Map Library (National Atlas and Thematic Mapping Organisation Library in Calcutta), Manuscripts Library (Andhra Pradesh Government Oriental Manuscripts Library, Hyderabad).

1.3.4 Specialist User Groups

The people who are in association with parent organisation are normally the users of the special libraries and is not used by the general public. The users are specialists engaged by the organisation to help them achieve their objectives. The special libraries, therefore, serve the special interests of the "Specialised Clientele". The users of university and public libraries, on the other hand, have their own individual objectives, e.g., passing examinations, expanding their horizon of knowledge.

1.3.5 Physical Size of the Library

Typically, a special library has a small sized specialized collection, accommodated in a small space and staffed by a small number of specialist professionals. Unlike the university and public libraries, the limited requirements of the parent body explains the smallness of the special libraries.

1.3.6 Emphasis on Information Services

Perhaps the most distinguishing feature of the special libraries is the emphasis on information services. The Parent bodies establish libraries for getting relevant and up-to-date information and as quickly as possible. Specialised services organised around a specialised collection in anticipation of the needs of the client, and quick response to such needs characterize a special library. The services do not end there. The libraries alert their clientele to the existence of new information even before they come to know that such information exists. The entire activities of special libraries are geared in the collection of specialised material (both in terms of subjects and formats) and their processing to facilitate quick retrieval and dissemination of information.

1.3.7 Points for Further Clarification

You need some more points for further clarification on Special Libraries in order to understand their structure and functions. The following points will provide some clarification:

i) If we apply the location as criterion, the academic libraries should also be designed as special libraries, because they are located in academic institutions. However, they lack most of the other distinguished features, for example subject orientation, specialised services, nature of the clientele, etc. There are, of course special libraries located in some of the university faculties, which undertake specialised studies and research in concerned subjects and, therefore need specialised collection and services.

ii) National libraries and public libraries in many countries have built-up specialised collection. E.g., the Science and Technology Division and the Geography and Map Division of Library of Congress; the Science and Technology Research Centre, and the Humanities and Social Sciences Research centre located in the New York Public Library; etc. These libraries have outstanding specialised collections in the subject areas and provide specialised services to a wide range of users. (For the purpose of this course, they are not considered special libraries, but Information/Documentation Centres referred to in the next paragraph).

iii) The special libraries share with other centres many common features and activities, e.g., subject orientation, specialised services, and techniques and tools used for providing such services. Many special libraries are often called Information Centres. But the only distinguishing feature is that specifically oriented to the specific requirements of the parent organisation.

However, there are instances of special libraries extending services to outsiders. For example, the National Medical Library (New Delhi), which is a special library attached to the Directorate General of Medical Services also caters to the requirement of researchers and professionals not working in the Directorate. These libraries, in a limited way, function as Documentation/ Information Centres. In the light of the above discussion, for the purpose of the course, we shall consider those libraries as special libraries which satisfy all the six criteria.

1.4 NEED AND PURPOSE OF A SPECIAL LIBRARY

By now, we know that special libraries possess special subject collections and / or collections in special formats and provide specialised library and information services to specialised clientele either on demand or in anticipation of demand. They also alert the clientele about the existence of information which might not be known to them.

A brief review of the development of the special libraries in the United States of America would be helpful in understanding why such libraries came into existence. In the later part of 19th century, introduction of scientific and technical and professional education in the American Universities on the one hand, and research activities in the universities and industries on the other created demands for information on many specific subjects. There was also increase in scholarly publications in the fields of science and technology as well as in the fields of business and industry. At the same time the industrial revolution resulted in an unprecedented industrial growth. Industries needed not only scientific and technological information but also economic and business information for utilising technologies for profit.

The library profession itself, by the turn of century, had developed new theories in librarianship and had introduced new library practices. For example, libraries are no longer considered as mere storehouse of books and other documents; but provision of intensive reference and bibliographical services to the readers was considered as one of the most important functions of the libraries. Such services attracted more users to public libraries. The increasing demands on public libraries from technical, business and industrial communities led to the establishment of technical and business department in many big public libraries.

John Cotton Dana, the founder of Special Libraries Association (SLA), himself a public librarian, made efforts to develop business collections and encourage their use by the business community. Many libraries were started in business and industrial enterprises and in banks. Libraries were also established to serve specific professional groups, e.g., Lawyers, Medical Practitioners and Engineers. With the rapid growth of libraries to serve such enterprises and specific interest groups, it was felt necessary to launch a professional association of special librarians to promote the cause of special librarianship. Special Libraries Association was thus founded in 1909 at the Bretton Woods Conference of American Library Association.

After the second World War, with the intensification of R&D activities and industrialisation for the reconstruction of national economy, there had been tremendous growth of literature and the corresponding increase in the demand for their information contents. This had provided further impetus for the growth and development of special libraries. The development of special libraries in India and in other countries followed similar pattern.

More specifically, the need for special libraries was felt for three major reasons:

1) Rapid increase in the volume of literature (books, journals, and non-book material),

2) Increasing specialisation in all branches of science (physical and social) and technology,

3) The need to have quick access to the vast amount of literature.

We shall briefly discuss these three factors in the following sections:

(a) The growth of the literature (generally referred to an "information explosion ", or "exponential growth" has posed a big problem for the users. While literature grows exponentially, the time that a scientist has for reading this literature remains almost the same. He is

thus able to cover only a fraction of the large volume of literature in his area of specialisation. He needs a service, which would continuously inform him about the new developments , and when need arises help him in getting as much information as possible on specific issues.

(b) With the increasing specialisation of knowledge it becomes difficult for any general library to focus on such narrow specialisations. Only a library involved in such subjects is in a position to acquire and process such documents to disseminate their information contents to the users.

(c) In many organisations quick access to information is essential for taking decisions on important matters. It is also vital for the survival of the organisations. For example, the marketing manager needs information very quickly about the demands for specific product to decide on the marketing strategy.

The scientists in R&D organisations are required to keep abreast of latest developments in their areas of specialisation mainly for two reasons:

i) to get information which may be useful in connection with their current research programmes; and
ii) to avoid duplication of the work that had already been done in other organisation.

They would not have time to consult the library catalogue to locate the necessary information. The relevant information has to be gathered from various sources and passed on to the users. Such information services can be provided by a well organised special library which has a clear idea about the goals and objectives as well as the plans, programmes, and activities of the parent organisation.

Establishment of special libraries within the organisations is, therefore, an imperative necessity. In view of specific emphasis on information services special libraries located in many organisations are titled as `Information Centres' or `Information Departments'.

1.6 FUNCTIONS OF A SPECIAL LIBRARY

In the light of the above discussion, the functions of a special library, irrespective of its location, may be stated as under::

(1) defining the objectives in conformity with the objectives of the parent body and drawing up plans and adoption of programmes to achieve these objective more specifically;

(2) acquiring library material that would respond to the information requirements of the organisation.

(3) organising and storing the acquired material appropriately to facilitate quick and pinpointed access to the documents. This would need classification of material using special schemes (e.g., Universal Decimal Classification Scheme), indexing using special subject heading lists (called Thesaurus), abstracting of documents, organising and storage of non book material.

(4) organising the following types of service:

a) dissemination of current information, viz., current awareness services to keep the clientele informed of latest developments
b) reference services for locating specific pieces of information
c) literature search and bibliographical services on demand
d) translation service.
e) obtaining documents from other libraries on interlibrary loan basis

(5) liaison with other special libraries, and documentation / information centres for gathering information not available in the library.

(6) associating with local, national and international professional organisations of librarians.

1.6 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

- "A Special Library is collection of information covering a specific subject or field of activity administered by some one trained in its application".
- A Special Library differs from the other libraries mainly in its location, subject orientation of the collection, format of the material, users and services.
- The concept of Special Libraries was started with the efforts of John Cotton Dana. a public librarian, who made efforts to develop business collection and encouraged their use.
- The Special Libraries Association (SLA) founded in the year 1909 at Bretton Woods.
- In view of specific emphasis on information services special libraries located in many organisations are titled as `Information Centres' or `Information Departments'.

1.7 REFERENCES AND RECOMMENDED BOOKS

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1.8 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) What is a Special Library ? Describe the various characteristics of a Special Library.
2) Explain the need and purpose of a Special Library.
3) Discuss the various functions of Special Libraries.

II SHORT NOTES

a) John Cotton Dana
b) Special Library Association
c) Parent Organisation

APPENDIX : EXAMPLES OF ORGANISATIONS (PARENT BODIES) IN INDIA HAVING SPECIAL LIBRARIES

Scientific Research Institutions

Indian Institute of Chemical Technology (IICT), Hyderabad
Centre for Cellular and Molecular Biology (CCMB), Hyderabad
Indian Agricultural Research Institute (IARI), New Delhi
National Institute of Nutrition (NIN), Hyderabad
Raman Research Institute, Bangalore
Indian Institute of Astrophysics, Bangalore
Indian Veterinary Research Institute (IVRI), Izatnagar

Research and Development Oranisations

R &D Centre for Iron and Steel, Steel Authority of India Limited (SAIL), Ranchi
Pulp and Paper Research Institute (PPRI), Orissa
Bharat Heavy Electricals Limited (BHEL), Corporate Research & Development, Hyderabad
Dr. Reddy's Research Foundation, Hyderabad
Aerial Delivery Research and Development Establishment (ADRDE), Agra Cannt.

Social Science Research Institutions

Centre for Studies in Social Sciences, Calcutta
Centre for Economic and Social Studies (CESS), Hyderabad
Centre for Development Studies (CDS), Trivandrum
A.N.Sinha Institution of Social Studies, Patna
National Council of Applied Economic Research (NCAER), New Delhi
National Institute of Rural Development (NIRD), Hyderabad

Training Institutions

State Bank Institute of Information and Communication Management, Hyderabad
Administrative Staff College of India (ASCI), Hyderabad
State Bank Staff College, Hyderabad and Gurgoan
National Institute for Training Industrial Engineers, Mumbai
Management Development Institute, New Delhi
Technical Teachers' Training Institute, Chennai

Government Departments and Agencies

Planning Commission, New Delhi
Ministry of Labour and Employment, New Delhi
Bureau of Public Enterprises, Ministry of Finance, New Delhi
Central Statistical Organisation, New Delhi
Bureau of Economics and Statistics, Andhra Pradesh, Hyderabad
West Bengal Secretariat, Calcutta

Parliament and Legislature

Parliament Library, New Delhi
Andhra Pradesh Legislative Assembly Library, Hyderabad

Professional Associations

Association of Indian Engineering Industry, New Delhi
Indian Banks' Association, Mumbai
Indian Institute of Bankers, Mumbai
Indian Medical Association, Calcutta
Indian Association of Special Libraries and Information Centres (IASLIC), Calcutta
Institute of Engineers (India), New Delhi

Business, Trade and Industrial Enterprises

Engineers India Limited, New Delhi
Rallis India Limited, Mumbai
Hindustan Paper Corporation Limited, Calcutta
State Trading Corporation of India, New Delhi

Chambers of Commerce and Industry

Federation of Indian Chambers of Commerce and Industry, New Delhi
Federation of Andhra Pradesh Chambers of Commerce and Industry, Hyderabad
Bombay Chamber of Commerce and Industry, Mumbai
Bengal Chamber of Commerce and Industry, Calcutta

Banking and Financial Institutions

State Bank of India, Mumbai
Industrial Development Bank of India, Mumbai
Industrial Credit and Investment Corporation of India, Mumbai
Andhra Pradesh State Financial Corporation, Hyderabad
Export - Import Bank, Mumbai
Reserve Bank of India, Mumbai
Unit Trust of India, Mumbai

Newspapers and Magazines

Ananda Bazar Patrika Library, Calcutta
Ushodaya Group of Newspapers, Hyderabad
Janmabhoomi Group of Newspapers, Mumbai
Times of India, Mumbai
Economic Times Research Bureau, Mumbai

Voluntary Agencies

India Development Service (I), Dharwad
Voluntary Health Association of India, New Delhi
Village Reconstruction Organisation, Vijayawada.

UNIT - 2 : SPECIAL LIBRARIES AND INFORMATION CENTRES

Structure

2.0 AIMS AND OBJECTIVES

This unit aims to introduce you the relationship between special libraries and information centres. This unit also aims to help you to acquaint yourself with the evolution of special library into information centres/ information bureaux and information systems.

After studying this unit, you should be in a position to

- discuss the origin and development of special library and information systems
- describe the characteristics of special libraries and information centres
- list out the various factors contributing to the growth of information services in special libraries
- explain the various major information services provided in special library and information centres
- discuss the role of Information Officer in the context of special library and information system.

2.1 INTRODUCTION

A close review of chronology of definitions of special libraries (Unit-1) reveals that in the earlier times, the word 'special library' referred to special collections in general libraries/ private/ public libraries that possess collections limited to a single subject area. In mid-19th century, special libraries were regarded as institutions serving a specialist group of users working for a common purpose. However, such definitions of special library could not sufficiently demarcate special libraries from other types of libraries, that is, libraries of universities/ professional colleges, public, commercial and business enterprises. From the beginning of the twentieth century, special libraries came to be identified as particularized information service centres, designed to meet the research needs of specialists or experts serving the parent organization.

2.2 SPECIAL LIBRARY Vis-à-vis INFORMATION CENTRE

The distinctive feature of special library that differentiates it from other types of libraries is its emphasis on the dissemination of information. This is evident from the definition of Ashworth, who defines the special library as one which is established to "obtain and exploit specialised information for the private advantage of the organisation which provides financial support".

Barbara Kyle brings out important distinctions between a special library and a general or an academic library. According to her, the first difference lies in the unit of material which is the basis of organisation. In general or academic library, this unit is generally a book, pamphlet, periodical, map or other physical item, whereas in a special library or information centre, the unit is a particular piece of information irrespective of the form of material in which it exists. Another distinction is that a general or an academic library usually provides information only on request, but a special library must also draw specialists' attention to the unrequested, relevant information.

From the above discussion, it is clear that the emphasis of special libraries is on providing information to the specialist user. It is also evident that a special library is different from other types of libraries in terms of its collection, clientele and services provided.

2.3 FACTORS CONTRIBUTING TO DEVELOPMENT OF SPECIAL LIBRARY AND INFORMATION CENTRES

Traditionally, libraries existed merely as storehouses of knowledge, performing the role of collecting and storing published materials. However, the origin of special libraries marked the growth of a new era of librarianship. The beginning of 19th century brought many changes in the scope and extent of service provided by the libraries. The concept of information service in libraries emerged mainly as a consequence of progress of scientific research and industrial development.

The evolution of special libraries as information centres is mainly based on the following factors:

i) Growth of Publications in Monstrous Proportions

Progress of scientific research has promoted free publication of results and its wider dissemination to the specialists across the countries. This necessitated the libraries to adopt

new role as information centres, by collecting and organising the specialized literature to keep experts informed of newly published works in their fields of interest.

ii) Need for Accurate and Specific Information

The scientific and technical research is largely based on the facts that are published or recorded. In other words, accuracy and specificity of information is mostly required for scientific research.

iii) Right Information at the Right Time

Speedy flow of information is another factor essential for the success of scientific research. This means that the information should have immediate utilitarian application. The special library with its efficient service should bring together the information and its users adhering to the principle "Right information in the right form & right amount and at the right time."

iv) Developments in Information and Communication Technologies

The rapid developments in Information Technology have totally revolutionised the special library and information centres. As a consequence, `digital libraries' and `virtual libraries' have come to reality.

2.4 DIGITAL LIBRARY

Digital libraries have evolved through a cycle of fast technological developments in order to cater to the needs of individuals with varying interests in various fields. `Virtual Library' and `Electronic Library' are related concepts that have emerged simultaneously with digital libraries. The concept of Virtual library has emerged because the communication technology has facilitated access to information through networking of different libraries, without physical existence of books on the shelves.

There are mainly three components of digital libraries. These are:

1) Documents (Text, Audio, Video)

2) Technology

3) Operations

1) Document Collection

In the digital environment, document must be available in the electronic media. Digital library collections contain permanent documents available in the digital format.

2) Technology

Dissemination of digital information in the absence of appropriate technology is not possible. Digital libraries are based on digital technologies.

3) Operations

Digital libraries are to be used by individuals working alone. Professionals should undergo an orientation-cum-training to enhance their skills to render effective services in the digital environment.

Thus, the digital library system intends to provide a new format to library and information services. By establishing telecommunication network among participating

libraries, digital library network can be evolved to provide access to every piece of information available in different libraries throughout the world. In turn, this leads to the concept of virtual libraries.

2.5 INFORMATION SERVICES PROVIDED IN SPECIAL LIBRARY AND INFORMATION CENTRES

From the foregoing discussion, it is understood that special libraries /information centres are set up to ensure speedy dissemination of factual and accurate information to the specialists either on demand or in anticipation. In order to serve these new functions specialised services like current awareness service, selective dissemination of information, retrospective search became essential.

Current Awareness Service as the name suggests keeps the users informed of the new and relevant items of information received in the library. The general circulation of new issues of periodicals; publication of lists of new additions to the stock; preparation of indexes and abstracts are examples of some such services.

Another form of current Awareness Service is known as Selective Dissemination of Information (SDI). Circulation of content pages of periodicals is an example of more generalised form of SDI service. In selective dissemination of information, latest, relevant information is provided to the specialists by matching the document profiles with user profiles.

This service keeps the specialist informed of the documents that contain the information possibly related to his interests.

Retrospective Search will help the specialist to know the historical perspective of the subject which is provided to him by searching information from all sources.

In the digital library environment, the above services can be rendered more effectively. The digital library can break down the physical barriers to information access and provide the opportunity of accessibility to every piece of information of any format from anywhere. To increase the degree of satisfaction of the specialists, multi-media components such as text, data, graphics, animation, audio and video can be integrated into the database of the digital library. User guides, interactive products for reference services, and multi-media based online catalogue can be developed to provide effective services.

2.6 ROLE OF INFORMATION PROFESSIONALS IN A SPECIAL LIBRARY

From the analysis of the characteristics of a special library in the foregoing discussion, it is understood that the primary function of its librarian is to provide information to the specialist users. Due to this function, the librarian of a special library is designated as an 'Information Officer' who is responsible for recording, organising and disseminating the published information directly concerned with the needs of the parent organisation.

The Information Officer / Scientist has to perform the following functions:

(1) Continuously study and monitor the current and long-term objectives of the organisation;
(2) Study the communication pattern of the organisation and identify the technological gate-keepers and the specialist users;

(3) Develop information sub-systems by involving specialists in study groups and decision-making teams:

(4) Information Officer should involve in the different activities of the parent organisation and share his knowledge and expertise with the specialist groups.

The functions of an Information Officer can be summed up as: locating, selecting, accumulating, processing, storing, retrieving, disseminating, publishing or reproducing documents and sources of information. However, the basic function is to keep the clientele uptodate and intellectually alert by providing pertinent information and literature not only in their own field of specialisation but also in their allied, bordering, emerging and developing fields.

To perform these functions, a special librarian should possess a broad subject knowledge, professional qualifications and a mastery of the library techniques.

In the context of digital library environment, the role and responsibilities of Information Officer becomes much more complex. The Information Officer in the first place has to gain acquaintance with the design and use of multimedia products, networking and database management etc. He should acquire special skills in using the technology to provide services to the specialist users.

New techniques in computerisation and automation of libraries have eased the job of an Information Officer in a special library. The existence of large computerised databases, both national and international, have increased specialists' access to information. Developments in communication technology have reduced the gap between the specialist and the required information. In spite of these technological innovations, much depends on the capacity of the special librarian to adopt these techniques effectively in leading the organisation towards success.

2.7 EXAMPLES OF SPECIAL LIBRARIES AND INFORMATION CENTRES

Let us examine some of the major information centres at the international and national level.

2.7.1 International Level

The collection, storage and processing of information is considered as major resource for achieving socio-economic development of nations. No single country, however rich or developed it may be, can not be self-sufficient in acquiring scientific information. Therefore, cooperation between nations is essential to achieve scientific and technological advancements. Some of the international information centres are discussed here.

1) International Nuclear Information System (INIS)

INIS came into existence in 1970 with the efforts of International Atomic Energy Agency (IAEA). INIS was formed to promote international cooperation in exchanging nuclear science information. Each of the participating countries in INIS will scan their national literature and prepare standardised input for the system. The IAEA would merge these various national inputs and in turn creates a computerised master file. INIS ATOMINDEX and corresponding machine-readable magnetic tapes are distributed to the participating countries. BARC library is the national focal point responsible for India's input.

2) International Information System in Agricultural Science and Technology (AGRIS)

In the last 60s, three organisations deeply involved in handling agricultural information, namely, US National Agricultural Library, Commonwealth Agricultural Bureaux, and the Commission of the European Economic Community) explored the possibility of launching an international cooperative information system to avoid overlapping in coverage by various indexing and abstracting services. Accordingly, a meeting was convened by the Food and Agricultural Organisation (FAO) of the United Nations. The meeting sponsored a survey which showed that in 1971, there were as many as 354 indexing and abstracting services in 41 countries. The FAO report observed too much overlapping and a need for cooperative action at two levels:

AGRIS Level-One : A Comprehensive Current Awareness Service
AGRIS Level-Two : Network of Specialised Services

A full scale feasibility study was conducted in respect of Level-one and the AGRIS in the existing form came into existence in 1975 on an experimental basis for three years.

The FAO is the coordinating agency of AGRIS and it takes advantage of the IAEA's computer facilities. Its two outputs are AGRINDEX and its corresponding AGRIS Magnetic Tapes and CD-ROMs. There are currently about 100 countries and international organisations participating in AGRIS and an average of 11000 records are processed every month. The Indian Agricultural Statistics Institute of Indian Council of Agricultural Research (ICAR) is the national focal point.

3) Development Science Information System (DEVSIS)

A significant development in the area of cooperative information system was the proposal for launching of the Development Science Information System (DEVSIS). The proposed system patterned on the models of INIS and AGRIS, for various reasons did not materialise. The outputs recommended for DEVSIS were: 1) Bibliography - DEVINDEX, and 2) Referral Service. The proposed system would have been global, decentralised and mission-oriented.

2.7.2 National Level

1) Medical Literature Analysis and Retrieval System (MEDLARS)

MEDLARS is one of the national information systems with international scope and variation. The development of the MEDLARS database, MEDLINE made it possible for medical libraries -- large and small, and researchers to achieve bibliographic access to a very large and intensively analysed body of literature.

MEDLARS is the largest US Government controlled database of National Library of Medicine at Bethesda (Maryland, USA) online since 1966. The subject areas covered by the database is medical science and related subject aspects like biological sciences, physical sciences, anthropology, psychology, anatomy, physiology, drugs and chemicals, diagnosis, therapeutic techniques, health care etc. The database provides its printed version in the form of Index Medicus - a monthly service since 1960. Since 1975, Pergamon Press has been producing simultaneously microfiche and microfilm editions of INDEX MEDICUS and its Annual Cumulative, Index Medicus volume.

2) National Information System for Science and Technology (NISSAT)

The development of NISSAT was prompted by the need for building up a strong national network of documentation and information services to meet the expanding require-

ments of scientists and research workers spread out in the various states of India. The establishment of NISSAT was based on the Unesco Mission Report prepared by Dr Peter Lazar during March-April 1972. NISSAT is administered by the Department of Scientific and Industrial Research (DSIR), Government of India.

NISSAT aims at fulfilling the following objectives:

a) provision of national information service relevant to present needs

b) optimum utilisation of existing information services and the development of new ones

c) promotion of national and international cooperation and liaison for exchange of information

d) development of information manpower for the implementation of national science information policy

e) supporting research in the field of information science and scientific communication

f) supporting R&D in information technology.

The components of NISSAT structure are -

i) The NISSAT national focal point, located in the DSIR, Technology Bhavan, New Delhi, and the NISSAT network of services. The NISSAT is advised and guided by an Executive Committee and other ad hoc groups. The national focal point also interacts with Unesco's General Information Programme (PGI).

ii) The NISSAT network of services consists of -

a) the Sectoral Information Centres on different sectors based on disciplines, products, mission, etc. and the local information units (LIUs);

b) Regional systems comprising Regional Information Centres (RICs); and

c) Other specialised supporting services.

The Sectoral centres already on operation, which include steel, leather, drugs and pharmaceuticals, machine tools, etc.

3) National Informatics Centre (NIC)

The idea of NIC was conceived in 1971 and finally the Centre became operational in 1977 with the support of UNDP to play a promotional role in developing a network of computerised information system. The NIC's activities are aimed at developing about 150 databases within various government agencies at the Centre for the efficient exchange of information among these agencies to support the decision-making process. The system also helps the external users, of various statistical data generated in the government departments.

2.8 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

* Earlier special libraries were referred to special collections in general libraries that limited to collections to a single subject area. Later special libraries are regarded as institutions serving a specialist group of users working for a common purpose. Now, special libraries came to be identified as specialised information service centres, designed to meet the research needs of specialists of an organisation

* The evolution of special libraries into information centres is mainly based on several factors such as growth of publications in monstrous proportions, need for accurate and specific information, speedy flow of information, timely information, etc. The advancements in information technology have supported the development of information systems, information centres and information networks.

* `Electronic Library', `Digital Library' `Virtual Library' are the recent concepts that emerged to facilitate easy access to information through networking of different information resources, without physical existence of books/documents on the shelves.

2.9 REFERENCES AND RECOMMENDED BOOKS

KHANNA, J.K. *Advances in librarianship.* New Delhi: Ess Ess, 1985.

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SILVA, M. *Special Libraries.* London: Andre Deutsch, 1970. P.7-9

2.10 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Trace the various factors contributing to the development of Special Libraries.

2) Discuss the major information services provided by special libraries.

II SHORT NOTES

a) Digital Libraries

b) National Information Centres

c) Information Officer/ Information Scientist

UNIT - 3 : SPECIAL LIBRARIES AND INFORMATION CENTRES IN INDIA

Libraries of Research & Development Organisations and Government Departments

Structure

3.0 AIMS AND OBJECTIVES

This unit aims to introduce you to the various types of special libraries and information centers in India.

After studying the unit, you should be in a position to

- categorise the special libraries into various types
- distinguish various types of special libraries and the nature of activities and services
- explain the information requirements in terms of subjects/topics and analysis of the information seeking behaviour of the users
- describe the nature of document collection and information services.

3.1 INTRODUCTION

One of the distinguishing characteristics of the special libraries is the nature of the parent organisations in which they are located. We can categorise the parent organisations into the following five groups based on their location and activities:

i) R & D Organisations
ii) Government Departments
iii) Business, Trade and Industry
iv) Socio-Economic Development Institutions
v) Training Institutions

We shall first take up the first two categories in this unit and discuss the special features of libraries located in those organisations. The remaining three types will be taken up in the next unit of study.

The task of the special libraries is to acquire and organise the library material and to provide services for furtherance of the goals and objectives of the parent bodies. It is, therefore, essential that you are acquainted with the objectives of the organisations, the plans formulated accordingly and the activities undertaken for achieving these objectives.

For each of the above categories of organisations, we shall first discuss the objectives and the nature of activities undertaken. Then, we shall discuss in this context: (a) the information requirements of users, (b) the special features of the material (ie documents) to be acquired, (c) the organisation of documents in ways which facilitate easy access to them, and (d) the services to be provided to respond to those requirements.

3.3 LIBRARIES IN R & D ORGANISATIONS

Science and technology are vital national resources for the overall development of the nation. Research and Development (R&D) occupies a very important place in knowledge understanding. Products and processes created by R&D activities contribute to the economic development of a country. In most of the countries governments play a major role in devising science and technology policy, in supporting and guiding science and technology activities, and in managing R&D. The R&D activities undertaken by various institutions generate a vast amount of scientific and technological information. Thus generated information is recorded in and disseminated through media like journals, books, and reports. This information, in turn, is used for the subsequent R&D activities undertaken. The institutions have to provide information contained in these documents, to the personnel engaged in research.

3.3.1 Nature of R & D Activities

The term "Research" signifies the quest for knowledge and understanding of the unknown phenomenon. The understanding may be sought primarily with the cultural goal of enlarging man's comprehension of the universe (called Basic Research) or with an immediate practical application in view (called Applied Research). Research is thus concerned with "how and why" of social and natural phenomena. However, when the focus of research is on the practical application of the knowledge the term "Development" is added to indicate this bias. A standard definition of R&D is "the creative work undertaken on a systematic basis in order to increase the stock of knowledge including the knowledge of man, culture, and society and the use of this stock of knowledge to devise new applications".

R&D is a composite term that covers a wide gamut of activities both in the natural and social sciences. Such activities range from the most theoretical topics (say in Mathematics) to the most practical aspects of designing, testing and evaluating a new device (say a new type of jet engine for a fast aircraft).

These kinds of activities are included under the broad term "Research and Development". Research has been categorised into the following three types:

i) Basic Research - pure and objective

ii) Applied Research - project and operational

iii) Development Research

However, there is no clear-cut demarcation between one form of research and another. Most organisations engaged in research will be concerned with more than one activity listed above. Pure basic research is generally called out to enlarge the horizon of scientific knowledge, e.g., to understand the basic scientific laws underlying a specific phenomenon. The practical utility of the results of basic research is not generally taken into consideration. Such research is also called `academic', `theoretical' or fundamental research. More often than not, a topic for pure basic research is selected by individual scientists to satisfy their own intellectual curiosity. However, the new knowledge generated in this process often helps to solve a practical problem; the results of pure basic research may also be used to develop a new product.

Objective Basic Research denotes research in fields that have potential practical utility, either in the near or distant future. The research is undertaken with the hope that the understanding gained will eventually contribute to applied research. Objective basic research is also undertaken to gain further theoretical insights into a known phenomenon. For example, the development of a supersonic aircraft may expose an area in which the existing scientific knowledge is inadequate. It then becomes necessary to seek new knowledge and better understanding of the phenomenon before developing an efficient supersonic aircraft. `Objective' basic research lies in the fact that the letter is stimulated by technological needs. `Objective' basic research is also called `Mission-oriented' or 'Goal-oriented' research.

Applied Research, on the other hand, is aimed at attaining a practical goal which can be defined with reasonable precision. Applied research in turn could be divided into `project' and `operational' research. While `project' research involves gaining knowledge of designing a new product, `operational' research is aimed at improving the performance of an existing process or product. One of the important outputs of applied research is patent specifications. Applied research also lies within the domain of mission-oriented research.

Development Research bridges the gap between applied research and the physical out-put or end items (i.e., a new product, equipment, or machinery or a new manufacturing process) and generally involves three steps, viz., Prototype Design; Production Design; and Pilot Manufacture or Pre-production. In other words, the goal of development research is to produce end items. These areas of R & D work logically follow each other and are also interrelated. Further developments in the succeeding areas throw up problems which become a matter of research in the preceding areas. A classic example of this is the steam engine which was developed before applied research modified it for traction. It was need for improvement that gave rise to basic research on heat engines, properties of gases, and other subjects.

Although most organisations engaged in research will be concerned with some form of R&D or the other, the R&D activities as described above are primary concern of mission-oriented organisations like the technology based industries and institutions for functioning under government scientific agencies like the Council of Scientific and Industrial Research (CSIR), the Defence Research and Development Organisation (DRDO), Indian Space Research Organisation (ISRO).

3.2.2 Information Requirements

The Libraries located in R & D organisations are required to be acquainted with the mission or goal as well as the plans, programmes and projects of the organisations. The goal is set within the basic policy framework provided in the Science Policy Resolution (1958) and the Technology Policy Statement (1983) of the Government of India. The R & D plans of the

individual organisations are formulated keeping in view the priorities specified in the successive Five-Year Plan documents. The plans are in turn broken down into a series of projects. The task of the library is to provide information support for the successful completion of these projects.

The information requirements may be viewed from two angles:

a) the subjects or topics on which information is required; and

b) the purpose for which the information is being sought (information seeking behaviour).

Apart from a general acquaintance with the goal of the organisation, the essential step in assessing the information requirements is to obtain fairly detailed account of the various research projects undertaken by the organisation and the tasks of the individual scientists associated with each of these projects. This will not only facilitate the acquisition of documents (primarily in terms of subjects) relevant to the projects, but will also be helpful in satisfying the specific needs of the scientists involved in the projects.

The typical information seeking behaviour of the majority of the scientists may be stated as follows:

They want to know

1) what is happening currently in the area of their concern
2) who else is working in the field and where they are
3) introductory and background information while undertaking work in a new field
4) the extent of prior work done in the new field (i.e., the state-of-the-art)
5) they want to get specific pieces of information and data needed at different stages of their work.

The specific nature of information requirements of individual scientists can be ascertained by developing "User Profile" for each scientist. The libraries conduct "Users Surveys" for the development user profiles, which cover both the dimensions of information requirements, viz., the subject contents and the information seeking behaviour of the scientists.

While the above steps indicate the current and immediate information requirements, there is a need for probing into the future requirements also. The monitoring of the current trends of research in the relevant areas as reflected in the literature and the reports of activities of other R&D organisations would provide insights into the future.

In specific terms, the assessment of information requirements is essential:

(a) to build up the basic collection

(b) to update the collection by acquiring documents relevant to changing requirements

(c) to design and implement library and information services

3.2.3 Document Collection

While building up a document collection in R & D libraries three factors deserve special consideration:

a) R&D is inter-disciplinary in nature. Therefore, besides the core subjects areas (i.e. the focus of the organisation), the collection should contain documents on peripheral and/or related subject areas. For Example, the core collection of the library of the National Metallurgical Laboratory, Jamshedpur consists of Metallurgy. The collection also contains documents on other related branches of science and technology (Eg. geology, mineralogy, mining, struc-

tural engineering). In view of the close relationship of R&D with economic development, the libraries also acquire documents of economic aspects of metallurgy like production, trade and consumption of different categories of metals.

b) Scientific research has no national boundary. Therefore, documents published in various parts of the world are acquired by the libraries.

c) Although English is the predominant language for scientific communication, results of research are also disseminated in many non-English languages, notably Russian, German, French, Japanese, etc. The libraries, therefore, acquire documents in other languages also.

d) The scientific knowledge becomes obsolete very quickly. The libraries, therefore, should systematically update their collection.

In addition, the library also has to take into consideration the special types of documents, i.e., documents other than books and journals.

3.2.4 Special Categories of Documents

Many documents become available after a considerably long time and some of them may not be available through normal trade channels at all. The library, therefore, should establish contact with individual scientists and important research institutions for getting documents not really available through normal trade channels. Three such categories are: i) Working Papers/ Discussion Papers/ Research Notes; ii) Papers presented in the Conferences, Seminars and Congresses; and iii) Research Reports.

However, some of these documents may be available subsequently through normal trade channels as formal documents. For example, working papers may be published in journals; conference papers may be published in the proceedings of the conference; the report literature originating in the US may be formally available from the centralised report distribution system, namely, National Technical Information Service (NTIS).

The journal collection can be supplemented by acquiring, from authors, reprints of papers published in journals not received by the library or photocopies of such papers from other libraries.

The development activities of R & D organisations need information about the physico-chemical properties, and physical characteristics and dimensions of various products, machinery, and equipment. Technical catalogues of manufacturers provide this information. Building up a collection of technical catalogues, therefore, is an imperative necessity.

Patents are unique sources of technical information which are not available in any other documents. Besides, one of the objectives of developmental work is to protect the proprietary right of the invention made by their scientists. The organisations, therefore need to know whether they are infringing into the rights of others, or others are infringing into theirs. The R&D library should, therefore, systematically acquire patents issued by patent offices of different countries.

In development work, it is necessary to conform to standards regarding the quality and physical dimensions of products, machineries and equipment specified by nations (e.g. Indian Standards Institution, British Standards Institutions), and International Standards Organisation (ISO). The library should, therefore, acquire the standard specifications of various countries and the International Standards Organisation.

3.2.5 Services

Current Awareness, Reference and Literature Search Services are the common features of all types of special libraries. These services assume great importance in the R&D libraries because of the very nature of R&D activities and the vast size of the scientific and technical literature. In fact, the term like "exponential growth of literature", "literature explosion", "information explosion" were introduced to characterise the rapid growth of scientific and technical literature. This phenomenon poses three problems:

(1) difficulty in keeping touch with the new literature.

(2) difficulty in retrieving relevant information from a large stock of literature accumulated over a period of time

(3) difficulty in acquiring all relevant documents because of limitations of financial resources and price escalation;

A scientist tries to keep in touch with the new literature by browsing through the new publications. However, he would not have enough time to cover even a small fraction of the voluminous literature all by himself. The library must, therefore, provide current awareness service to help him in this task. There are two ways of providing this service:

a) compiling current awareness bulletins and documentation lists based on the document acquired by the library; and

b) making available to him commercial services like Current Contents, published by the Institute for Scientific Information, Philadelphia, USA.

c) making provision for online information services, which help to instantaneous access to the internal and external databases.

The Current Contents are necessary for two reasons: a) such publications dispatched by air mail reach India much before the journals are received by surface-mail, and b) such publications provide wider coverage of journals than the in-house bulletins and lists can do. It is interesting to note that most of the comprehensive indexing and abstracting journals were developed around scientific and technological disciples (e.g., Chemical Abstracts, Biological Abstracts, Engineering Index).

As regards retrieval of information from a large stock of literature, the libraries undertake, for this purpose, literature search using the secondary publications, viz., indexing and abstracting journals. The libraries should have a collection of back issues to cover the literature of a reasonable period of time. several of these indexing and abstracting services are available as CD-ROM as well as online databases. Eg: CA Search (=Chemical Abstracts), BIOSIS Previews (=Biological Abstracts), COMPENDEX (=Engineering Index). The libraries can conduct the searches on these databases.

The third problem relating to the vast size of literature is the lack of access facilities to the documents identified through current awareness and literature search services. Because of continuous increase in the prices of books and journals as well as limitations of financial resources, no library can acquire all the documents available even in the core subject area. Libraries, therefore, must acquire such documents required by the scientists through inter-library loan. They can also obtain photocopies of the relevant documents from other scientific and technical libraries or from organisations like INSDOC's National Science Library (New Delhi), British Library Document Supply Centre (Boston Spa, England).

Translation of non-English documents into English is another important service the libraries should organise to enable the scientists gather information available in documents published in foreign languages.

3.3 LIBRARIES IN GOVERNMENT DEPARTMENTS

It is necessary to explain the terms, "Government Departments" used in the context of this unit. The Government has, generally, four organs: 1) Executive; 2) Judiciary; 3) Legislative; and 4) Constitutional (i.e., authorities set up under the provisions of the constitution).

The Executive organ of the Centre consists of a number of Ministries (e.g. Agriculture, Energy, Industry, Labour). If the scope of activities of a Ministry is too large, it may be divided into several "Departments" (e.g., the Ministry of Human Resource Development has Departments like Education). Under each Ministry/ Department, there are "Attached", and "Subordinate" offices. Where the execution of the policies of the Government requires decentralisation, Attached offices are created. They are responsible for executing the policy and programmes of the parent ministry/department.

The Subordinate bodies function as the repository of technical information and provide advice on technical matters. The Subordinate offices function as field establishment or agencies responsible for the detailed execution of the directives of the ministry / department or to the Attached offices. Besides Attached and Subordinate offices, several ministries/ departments have, three other categories of agencies under their control. They are -- 1) autonomous organisations / registered societies; 2) statutory bodies; and 3) public sector undertakings.

The need for the libraries in the Government was appreciated for a long time and they were established in a number of agencies. Central Libraries were also set up at the Central and State Secretaries (Eg: Central Secretariat Library, Shastri Bhavan, New Delhi: Andhra Pradesh Central Secretariat Library, Hyderabad).

The Government Libraries assumed great importance when socio-economic planning was introduced in the early fifties. The introduction of the planning process had completely changed the approach of the public administration system. Almost all the agencies of the Governments, in some way or other, are associated with the formulation and implementation of plan programmes and projects. The term development administration was coined in the mid-fifties for highlighting the shift of the focus of public administration from administering law and order to implement socio-economic development. The importance of information to support the developmental activities needs no emphasis. Further, the establishment of several Science and Technology oriented departments in recent years (Eg: Department of Ocean Development, Department of Environment, Department of Non-Conventional Sources of Energy) has increased the demand for information in Governments. In this context, the Government Libraries are required to respond to the diverse information requirements of the administrators (including ministers) at different hierarchical levels of the concerned agencies.

3.3.1 Nature of Activities

The following three documents provide a fairly detailed account of the nature of activities (functions), organisational set-up, and the subjects handled by ministries / departments and their agencies.

1) INDIA, MINISTRY OF HOME AFFAIRS, SECRETARIAT TRAINING SCHOOL: Organisational Set-up and Functions of the Ministries / Departments of the Government of India. Delhi: Controller of Publications (Frequently updated).

2) INDIA, LOK SABHA SECRETARIAT. Subjects for which Ministers and Departments of the Government of India are responsible. Delhi: Lok Sabha Secretariat, (Frequently updated).

3) INDIA, CABINET SECRETARIAT: Government of India (Allocation of Business) Rules 1961. Delhi: Controller of Publications (Frequently updated).

Consequent upon the changes in the portfolios of Ministers, the departments are shifted from one Ministry, to another Ministry. The Annual Report of Ministries/Departments always contain latest accounts of their organisational structure and functions. An examination of the functions of various Ministries/ Departments shows that most of them have more than one function. They are: a) policy making and planning; b) administrative and regulatory; c) advisory, and d) research.

3.3.2 Information Requirements

The two factors that are relevant in making assessment of the information requirements as well as for planning and implementing library services are:

1) the subjects or topics on which the information is likely to be sought; and

2) the purpose for which the information is being sought.

In a general way, it may be stated that in Government agencies information is required for taking appropriate decisions. However, the specific purpose for which the information is required, to a large extent, is related to the nature of the activities of the organisation and the tasks assigned to the persons working in it. The basic focus of the R&D Institutions is that of the research, and, therefore, there is a certain degree of homogeneity of the library users. In contrast to this, there exists diverse user groups in a Governmental agency each performing one or more functions (i.e., policy making and planning, administrative and regulatory, etc).

Information seeking behaviour of the administrators, therefore, significantly differs from that of the scientists. Significant difference also exists among different groups of administrators in the same agency. The typical information seeking behaviour of scientists as listed in Section 3.2.2, is not therefore applicable to the administrators (except the research officers) although the desire to keep in touch with current developments to a great extent, is of routine type. (Eg. information about acts and rules, precedents, statistical data, and the like. This needs facilities of access of documents primarily generated within the Government.

However, information plays a significant role in respect of the activities relating to the development administration. Assessment of information requirements needs the understanding of the process of development administration. The basic steps involved in this process may be listed in the following manner:

1) Finding the facts
2) Assessing the trends
3) Diagnosing the problems
4) Identifying the needs
5) Prescribing the solutions
6) Establishing policies
7) Defining plans
8) Devising programmes and projects
9) Operating programmes and projects
10) Assessing the impact of action
11) Evaluating successes and failures.

The inter-related steps, individually and collectively, require the information support in varying degrees. For example, in diagnosing a problem (Step-3), one needs existing facts and data (Step-1). An analysis of this information (Step-2) will lead to the diagnosis of the problem. The task of analysis itself may need information about a suitable analytical tool (say, a statistical technique). Again in formulating a policy (Step-6), while the information assembled and analysed in the earlier steps would provide the basis, one may also need the information about the policy decisions in similar situations elsewhere, and perhaps also the consequences of such decisions.

Another factor, which should be taken into consideration is that the hierarchical levels of administrators largely determine the degree of the details of the information content. While making policy decisions (Step-6), for example, on expanding hospital facilities in certain area, the top administrator would need among others, brief information about the adequacy (or inadequacy) of the existing facilities (say, availability of beds in the hospital for 1,000 people), the desirable standards, etc. The administrators in the succeeding levels responsible for briefing him would seek detailed information for undertaking the exercises involved in the Steps 1-5. Similarly, the administrators (including the research officers) who would be preparing the detailed plans and projects (Step-8) within the framework of policy and planning (Steps 6-7) prescribed at the higher level of decision-making would also need information in greater details (in-depth information).

3.3.3 Collection Development

The development of collection in the Government department libraries has to be approached from two angles:

a) the subject orientation of the collection;

b) the nature of the documents to be acquired.

Obviously, the subject allotted to the agency should be reflected in the core collection. In view of the emphasis on development administration, the library will also be required to acquire literature on socio-economic development (ie. development literature) relevant to the core area. Development literature is interdisciplinary in nature.

A science and technology oriented department, like Department of Environment, should acquire: i) Basic scientific and technical publications in the relevant area; and ii) the publications on socio-economic aspects of the concerned are (which may be broadly termed as development literature).

The Government department libraries should, therefore, build up selective collections of management literature, which should cover both basic books and different facets of management as well as books oriented to management in governments, like Adoption of Management Techniques in Government Administration, Managing Non-profit organisations, Management Principles for Non-profit Agencies and Organisations.

The development literature is universal in character. The collection of development literature should reflect not only the Indian situations, but also situation both in developed and other developing countries.

As regards the nature of the documents, like in any other Library, books, journals and newspapers brought out by commercial publishers and research and academic institutions will constitute an important segment of the collection. The Government publications, as a major source of information, have a significant place in the Government Department Libraries. The reasons are obvious. The Government Publications are the products of the activities like

policy and planning, administrative and regulatory, of various Government departments. For example, in order to ensure the systematic development of industry, the Ministry of Industry had introduced several regulations to enforce control on industrial organisations through the enactment of the Industrial (Development & Regulation) Act (1951) and through several rules framed by it. Both the industries and the relevant Government agencies will need access to the documents related to this Act. The official statistical documents will constitute an important segment of the government document collection, since statistical information is an important tool for analysis of problems, taking policy decisions, formulating development plans, and finally measuring the results of planning activities.

3.3.4 Information Services

While three type of services (viz., current awareness, reference and literature search services) are, by and large, common to all the libraries, there will be no uniform pattern to services in all categories of the Government Libraries. The coverage and depth of such services will depend upon the nature of functions of the agencies. However, two minimum essential services relevant to all agencies are -

a) Current Awareness Service - preparation and circulation of list of new acquisitions (accession list); and circulation of newspaper clippings to senior administrators;

b) Reference Service - most of the administrators would need quick information in course of their daily work on a wide range of topics involving search in bibliographical publications or in government documents like acts, rules, statistical compilation, and budget documents.

3.4 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

- The parent organisations of the special libraries can be grouped into five types, based on their location and activity. They are - i) Research and Development Organisations, ii) Government Departments, iii) Business, Trade and Industry, iv) Socio-Economic Development Institutions, and v) Training Institutions. The libraries of the first two categories were discussed in this unit.
- The Libraries located in R & D organisations are required to be acquainted with the mission /goal as well as the plans, programmes and projects of their parent organisations. The information requirements are focussed mainly on the subjects or topics, the projects and programmes undertaken.
- Generally, there are four organs, which are listed under the Government Departments. They are - I) Executive, ii) Judiciary, iii) Legislative, and iv) Constitutional authorities. Realising the importance of information for the developmental activities, the Governments have established libraries in their administrative units, such as ministries, departments, secretariats, parliament, legislative assemblies, judiciaries, and constitutional bodies. The emphasis of the collection in these libraries is on socio-economic development .

3.5 REFERENCES AND RECOMMENDED READINGS

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3.6 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Explain the role of libraries in Research and Development Organisations.

2) Discuss the importance of libraries attached to the Government Departments.

II SHORT NOTES

a) Research and Development

b) Information Requirements of Judiciary

c) Information Sources for Government Publications

UNIT- 4 : SPECIAL LIBRARIES AND INFORMATION CENTRES IN INDIA :

Libraries for Business, Trade and Management; Socio-economic Development Research Institutions; and Training Institutions

Structure

4.0 AIMS AND OBJECTIVES

This unit aims to introduce you to the various types of special libraries and information centers in India.

After studying the unit, you should be in a position to

- list out various special libraries coming under business, trade and management; socio-economic development institutions and training institutions
- distinguish various types of special libraries and the nature of activities and services offered by them

- explain the information requirements in terms of subjects/topics and analysis of the information seeking behaviour of the users
- describe the nature of document collection and information services.

4.1 INTRODUCTION

We have already discussed about the two categories of special libraries, namely, Libraries of Research and Development Organisations and Government Departments. The nature of libraries and the information requirements of the clients, methods of collection development and information services relating to those libraries have been examined in detail.

In this unit, we introduce you three more categories of special libraries under Business, Trade and Management; Libraries of Socio-economic Development Research Institutions and also those of Training Institutions.

The libraries of Business and Trade are often referred to `Business Libraries'. As you have studied in the earlier units that these libraries had their beginning in the public libraries. The public libraries in the USA and UK give a lot of importance to business information in their services.

The libraries in Socio-economic Development Research Institutions, especially in developing countries, occupy a significant position as they are directly linked to the human development. Librarians of these Institutions find it difficult to identify and acquire the `Development Literature' most of which is of interdisciplinary in nature and available as unpublished and unconventional documents. The United Nations has been giving much emphasis on the bibliographic control of such literature through the programmes of DEVSIS.

The libraries located in Training Institutions are required to support consultancy and research activities in addition to their training programmes of their host organisations. The success of the training programmes to some extent depends on the literature and information services provided by the libraries to the faculty and the participants.

4.2 LIBRARIES FOR BUSINESS, TRADE AND INDUSTRY

Of the three categories of organisations discussed in this unit, the entity "Business, Trade and Industry" differs significantly from the other four in one respect. While the sole motive of business, trade and industry is profit making, the activities of the others are not prompted by such motive. The term "business" has a wider connotation and includes both "trade" and "industry". The "industry" produces (or manufactures) goods/products (Eg: automobiles, machines, drugs, TVs, cement, fertilisers, etc) and may also sell the goods thus produced. The "trade" on the other hand, only sells goods (and also services, e.g. automobile repairing services). The organisations involved in business or trade and industry are collectively called, in the language of economics, "firms". A firm, therefore, may be defined as a corporate entity which has been established either to sell goods or services or to manufacture goods or to do both. A firm is also referred to as a company or a corporation.

The term "industry" denotes a collection of producers or manufacturers of same kind of goods or products, e.g. automobiles (and hence automobile industry). Often the term "Commerce" (large-scale exchange of goods) is used in conjunction with "trade' (trade and commerce) to signify the same function. The term "company" in its general sense includes corporation joint-stock company, and partnership, but is mostly used of the larger partnership (specifically called joint-stock companies) and trade industrial, or commercial corporations. (Webster New International Dictionary of the English Language).

This Section deals with the libraries located in firms involved in both manufacturing (production) and trading (sales) activities. The libraries located in manufacturing firms are often called "industrial libraries". The term "company libraries" is also used in this Section to denote libraries attached to both industrial and trading firms. There is no uniform pattern of their location in specific departments, but they exist in many companies to provide information needed by managers.

A company library has to be distinguished from two other categories, viz., a) Business libraries, and b) R & D libraries located in companies.

4.2.1 Business libraries

A category of libraries apparently with similar connotation is called "business libraries". We have already mentioned in Unit-1 of this course that the seeds of the present day special libraries were sown in big public libraries in the form of technical and business departments. The business library, has always been a component of public library system in the USA and UK, which provides information about business, trade and industry (also known as Commercial Information). Business libraries are, therefore, often called Commercial Libraries. Several libraries of university graduate schools of business in the USA have excellent collections of documents on business, economics, trade and industry. For all practical purposes, these libraries also can be named business libraries. The Baker Library of the Harvard Business School, and Thomas J Watson Library of Business and Economics of the Columbia University Graduate School of Business, are cases in point.

Although the nature of information handled by the company and business libraries are basically same, the contents differ. Unlike a business library, the document collection and services of a company library are oriented to the specific requirements of the host organisation.

4.2.2 R & D Libraries in Companies

Many manufacturing companies have libraries attached to their R & D Department. These libraries fall in the category of R&D libraries. Such libraries are also called Technical Libraries or Technical Information Centres. The focus of such libraries is on scientific and technological (S&T) information, although they also deal with non-S&T information. In the company libraries, non-S&T information plays a dominant role.

Although the existence of libraries in companies is as old as the concept of the special libraries itself, there has been a renewed emphasis on the role of information in the decision making process in companies. Open any contemporary book on management and you will come across a statement like this. "The quality of his (manager's) decision cannot be better than the quality of his information; hence real attention must be given to the process by which the manager acquires, evaluates, and digests information. The managers use two types of information: i) information generated within the company (i.e. internal information), and information generated outside the company (i.e. external information). Internal information related to the financial position of the company; its production plan; particulars about its employees; data on stocks of raw material, finished products, and sales of different products, etc.

The managers of the companies need internal information relevant to their functions to take appropriate decisions. It is now an accepted policy of companies to introduce Management Information Systems (MIS) for providing such internal information. There is now a greater awareness among the managers that MIS should be supplemented by external information, because many management decisions are affected by the developments outside the organisations. The major function of a company library is to acquire documents relevant to the requirements of the organisation, process them, and disseminate their information contents

to managers. They retrieve and provide information that may be used in conjunction with internal information for taking decisions.

4.2.3 Nature of Activities

The activities of a company can be explained in the context of the following definition of the term `Management'. Managing or Management is a process that consists of planning, organising, activating, and controlling (POAC) the resources (personal and capital) of an organisation so that they are used to best advantage in achieving the objectives of the organisation.(Terry and Franklin)

The basic resources (or the "Six Ms" of management, as they are often called - Men (and Women), Material, Machines, Methods, Money and Markets are subjected to the process of management mentioned above to achieve the stated objectives of the company. Thus, management is an activity that transforms human and physical resources (inputs) into useful and effective results (outputs). In the management process information plays a major role.

4.2.4 Information Requirements

It is known that managers need information for taking decisions. It is therefore, said that information is an essential ingredient in the decision-making process. In preceding Section we have referred to the Management Information System (MIS). MIS is defined as "a System which provides each manager in the organisation with the information he needs in order to take decisions, plan, and control within his particular area of responsibility" (Higgins, J.C. 1980).

The statement "particular area of responsibility" in the definition relates to two factors: i) the functional responsibility of the manager, and ii) the level of the decision-making process. The first one indicated the subject contents of the information, for example the managers working in the Management Department would need information about various material relevant to the company's line of production. The second factor would determine the extent of external information needed by the manager. The library would be mainly concerned with the information recorded in documents (published and unpublished) generated outside the organisation. The management literature recognise three levels of managerial decisions: a) strategic decisions, b) control decisions, and c) operational decisions.

The following examples will indicate some of the characteristics of the decisions at each level and the nature of the information requirements (Higgins,J C).

Decision levels	*Decision Characteristics*	*Information Characteristics*
1. Strategic	Involves high-risk; The long-term planning for the survival of the company in the competitive market and for further diversification, growth and development	High proportion of external information relating to government policies, economic trends, technological developments, markets and competitors, social and political developments
2. Control	Involves low to medium risk. To ensure that the resources are efficiently used in achieving the stated objective of the company	Internalisation information (Primarily in the form of summary reports about the relevant function of the company is more dominant)

3. Operational	Involves low risk. The task; Repetitive and routine in nature to get things done and to ensure that the established process of work is being followed	Primarily internal information about the relevant function of companies E.g: production schedule, material requirements, stock position production data, sales data

The above example shows that external information plays an important role in varying degrees at different levels of strategic decision making. Even in operational and routine decisions (Level-3) which primarily need internal information, the managers would also require external information for taking decisions. Take the example of purchasing of raw material which is an operational activity, involving routine decisions. The task would give rise to these type of questions:

What to buy ?
When to buy ?
How much to buy ?
Where to buy from ?
At what price ?

Evidently, the answers to the first three questions are available from the internal sources. The manager would need external information in taking the last two decisions. Even in taking decisions in respect of the second and third issues, the internal information has to be supplemented by external information.

Several developments outside the company (called "external environment") are likely to affect the functioning of a company. The growing competitiveness among the companies, and the fast changing socio-economic and technological situations open up new opportunities for profit on the one hand and at the same time, they are the growing sources of major threat to the companies. The attention of top managers is, therefore, shifting from the internal affairs of the company to the external environment. Many companies in the US have introduced a system generally known as "Scanning of the Environment" (or Environmental Scanning) to monitor such developments to enable the managers to take appropriate decisions. It is a kind of activity known as "Commercial Intelligence" which is commonly practised in many companies in India also. The library can effectively involve itself in the environmental scanning activities by collecting relevant documents and providing the necessary library and information services.

What are the different kinds of environmental information the managers need ? There are three levels of environment: a) the immediate or the operating environment, b) the national environment, and c) the global environment.

The operating environment includes individuals and organisations with whom the company comes into contact every day, such as, customers, suppliers of material, trade unions, various government departments, banks etc. The managers would need information about such individuals and organisations.

The national environment consists of economic, political, social, regulatory, and technical components. Information on all these segments is important in varying degrees, but the focus of attention of manufacturing companies is largely on the economic, regulatory, and technological ones.

Of late, the global environment has assumed great importance for several reasons. Many companies earn profits through international trade. The country also earns foreign exchange which is necessary to import many scarce commodities not locally available. The managers, therefore, need information about economic, political, social, regulatory and technological environments of other countries.

Another important dimensions of the information requirements is related to the management process itself. Over a period of time, many management theories and techniques have been developed, practised and perfected. The managers at all levels, therefore, would need access to management literature to enable them to discharge their managerial responsibilities effectively. The recent emphasis on management training (called Management Development Programmes) in many companies has stimulated the use of management literature.

4.2.5 Collection Development

The document collection of company libraries has three distinctive characteristics in respect of i) the physical form, ii) the form of presentation of the contents, and iii) the sources of generation. Let us briefly discuss these three points.

i) The Physical Form: Besides books and journals, the conventional library material, the collection of a company library must include trade catalogues, standards, patent specifications, and news clipping files, engineering drawings, maps and atlases.

ii) The Form of Presentation: Expeditious provision of specific pieces of information, on demand from managers, is one of the major tasks of a company library. Examples of such enquiries are production statistics of commodities and their prices, current foreign exchange rates, manufacturers / suppliers of specific products, information about other companies. The documents, which are largely used for locating information are called Reference Books/Tools. Company libraries, therefore, must build up-to-date collections of reference tools like encyclopaedias, directories, handbooks, yearbooks, news digests and newspaper indexes, and statistical compendia, which relate to the business. A reference to Business Information Sources by Lorna M Denielles (University of California Press, 1976) will give an idea about the nature of reference tools relevant to company libraries.

iiii) Sources of generation: An acquaintance with the sources of generation of information is always useful in identifying and acquiring documents. Possession of an intimate knowledge about three sources of generation of documents relevant to business, trade and industry is an imperative necessity:

- Union and State Government and their organs (Eg: Statistical Reports, Policy Resolutions, Five-Year Plans, etc.)
- International agencies (Eg: United Nations and its organs, and economic alliances like OECD, ASEAN, UNIDO, UNCTAD, and World Bank).
- Publishers specialising in the fields of business, trade and industries (Eg: Gale Research, Business International, Predicasts, Dun & Bradstreet).

In this context, a reference should be made to a new category of organisations, primarily in the USA, which are known as "Information Brokers". They gather business information from various published sources and sell it to companies. The Centre for Monitoring Indian Economy (Mumbai), which provides, against subscriptions, a monthly package of economic information collected from various sources, many be labelled as an information broker.

4.2.6 Information Services

While discussing the functions of a company librarian, one author has observed: "A new generation of more extrovert librarians is showing that business libraries exist to exploit all published information, using sophisticated methods, and that they are providing this information, not in a quiet and leisurely way, but while you wait. This exploitation of published data is the business librarian's output. The output from the library is information. This output is information - is what the company needs and demands. It does not want books, the cata-

logues, the shelving, or the librarian... It simply wants the output - the information.... The ability to provide accurate information quickly demonstrates the business librarian as an equal specialist, inside the management team, alongside other professional businessmen generating internal information by computer or perhaps, monitoring information on Internal performance as an accountant. Thus, the business librarian will spend more time out of the office making and maintaining external contracts than he will spend on precision cataloguing". (Armstrong, A: 1975)

The above statement highlights the importance company libraries of information in company libraries. Two types of services are extremely relevant : i) Current Awareness Service, and ii) Reference service - for providing specific pieces of information.

The current awareness service may be very effectively provided in two ways: i) circulation of news clippings ii) circulation of journals and news magazines. Speed is the key to the effectiveness of current awareness in companies. In spite of several operational problems in circulating documents, this method is the fastest way of disseminating current information to managers.

As regards reference service, the librarian must be thoroughly acquainted with the reference works and should also know where to go or whom to get in touch with for speedy answers to questions.

The librarian will also be required to undertake literature search services, but the output should not be a bibliography but take the form of a digest containing the essential information. Needs of managers often demand unconventional practices which are unacceptable to the librarians in the academic or research institutions. The role of a company library is, therefore, unconventional.

4.3 LIBRARIES IN SOCIO-ECONOMIC DEVELOPMENT RESEARCH INSTITUTIONS

The term `Socio-economic development' is derived from the social sciences. Social Sciences, in turn, refer to the disciplines concerned with man, his culture and his environment. Seligman divides social sciences into three categories:

i) Purely social sciences (which include politics, economics, history, jurisprudence, anthropology, penology, sociology, and social work);

ii) Semi-social sciences (consisting of ethics, education, philosophy, and psychology) and

iii) disciplines with social implications (viz. biology, geography, medicine, and linguistics).

The adjective "Socio-economic" is related to a number of the above disciplines. "Development" implies the process, which is aimed at satisfying the material needs of man as well as the improvement of the social conditions of his life (the quality of life), and also the fulfillment of broad human aspirations. The material needs to include, among others:

i) adequate earning opportunities to enable him to purchase the daily necessities of life;

ii) access facilities to the provision of public services for education, health and nutrition, safe drinking water, social security etc., and

iii) adequate shelter, cheap transport, etc. There is a close relationship between R&D

and research on problems of development (or development research) conducted by the Socio-Economic Development Research Institutions.

4.3.1 Socio-Economic Development Research Institutions

Establishment of Socio-Economic Development Research Institutions is a phenomenon of the late sixties. These institutions have come into existence in developing countries like India, Pakistan, Bangladesh and Sri Lanka, as well as in developed countries like Germany, the UK, the USA to undertake development research. The name of such institutions generally contain terms like "Development Studies", "Social and Economic Studies". Eg:

Centre for Development Studies, Trivandrum
Giri Institute of Development Studies, Lucknow
Centre for Economic and Social Studies, Hyderabad
Madras Institute of Development Studies, Chennai
Bangladesh Institute of Development Studies, Dhaka
Pakistan Institute of Development Economics, Islamabad
Marga Institute - Sri Lanka
Centre for Development Studies, Colombo
Institute of Development Studies, University of Sussex, UK
Development Research Institute, Netherlands

As you are aware, in India and also in many developing countries, "development" is achieved through the planning process. The Five-Year plans are the major instruments for achieving the goals of development. In formulating development plans, there is the need for a wide range of information covering many disciplines. However, the existing knowledge about the process of development is inadequate. The policy-makers associated with development plans need new insights into many problems confronting man and society for taking appropriate decisions. Generation of new knowledge through research in development is an essential pre-requisite for formulating and implementing development plans and programmes.

The academic institutions also found socio-economic problems as academically relevant research topics. The establishment of the Indian Council of Social Science Research (ICSSR) in 1969, stimulated research in social sciences in general, and in development in particular. The State governments, which are responsible for initiating and implementing plans in areas under their jurisdiction, also felt the need for research to support the planning activities.

At the global level, many agencies are involved in development work in the developing countries. Eg:

(a) Agencies of United Nations like the World Bank, the International Labour Organisation (ILO), United Nations Industrial Development Organisation (UNIDO), Economic and Social Commission for Asia and the Pacific (ESCAP);

(b) Aid agencies of governments of developed countries like United States Agency for International Development (USAID); International Development Research Centre (IDRC), Canada; Swedish Industrial Development Agency (SIDA); and

(c) Philanthropic institutions like the Ford Foundation.

The introduction of several journals like Development Economics, Development and Change, International Development Review, Journal of Development Studies and the establishment of the International System for Development Information (DEVSIS= Development Science Information System) are indicative of the growth of research in this field.

All these factors led to the establishment of socio-economic development research institutions (or development research institutions (DRI in short) within and outside the university systems, both in the developing and developed countries. While research on socio-economic issues continues to be the concern of the department of social sciences of universities, the DRIs specifically deal with developmental problems confronting the decision-makers and planners. In India several institutions were set up at the initiative of the State governments, and many institutions are financially supported by funding agencies like the ICSSR and Indian Council of Medical Research (ICMR). Besides, conducting research and bringing out publications, DRIs organise training programmes.

4.3.2 Information Requirements

The information requirements may be viewed from two angles: i) the subjects or topics on which information is required; and ii) the purpose for which the information is being sought by researchers.

The knowledge of the first is essential for building up the library collection as well as providing the right documents to the information seekers. The second aspect helps in designing and implementing library and information services.

An assessment of specific information requirements may be made from two sources: First, most of the institutions would have identified major themes of research based on their existing capabilities, their own perception of problems of development, and the requirements of the sponsoring agencies. These are generally incorporated in the long-term plans of the institutions. Second, the list of projects on hand along with a fairly detailed account of each will focus on specific information requirements.

The information-seeking behaviour of the social scientists working in DRIs is, by and large, similar to that of the scientists in R & D organisations. Like the R & D libraries, the DRI libraries should, therefore, undertake the development of user profiles for making proper assessment of the specific needs of users.

4.3.3 Collection Development

Four factors deserve special attention, while developing collection in DRI libraries: i) Unique characteristics of the development literature, ii) Inter-disciplinary nature of the topic "Development", iii) Universal character of the topic "Development"; and iv) Lack of bibliographical tools for several categories of documents. Let us discuss these factors in detail:

a) Characteristics of Development Literature

Like in any other type of library books, journals, and newspapers would constitute an important segment of the collection of DRI libraries. As you are aware, they are known as "formal" or "conventional ", (or "published") documents since they are available through normal trade channels. In the field of social sciences in general, and in the area of "development" in particular, a sizable quantity of documents remains unpublished, and, therefore, is not available for purchase. They are called "non-formal" (or "unconventional") documents.

The importance and relevance of the non-formal documents both for development research and decision making, are now well established. The study team which examined the feasibility of establishing Development Science Information System (DEVSIS) had estimated that as much as 60 per cent of the development literature belongs to the "non-formal" category. The balance is accounted for by "formal" literature (i.e. papers in journals 22 per cent and books 8 per cent). The 60 per cent of development literature remains unknown and inaccessible to many libraries and users. To quote the report: "...the bulk of the iceberg (60 per

cent) is the less accessible, grey, fugitive, invisible literature. It is made up of unpublished working papers, feasibility and pre-investment studies, theses and documents of governments and international organisations that are not widely disseminated".

2) This great variety of literature, which has come to be popularly known as "grey literature", since the publication of the report, has two common characteristics. They are usually very difficult, if not impossible to obtain, and very seldom come under bibliographical control.

3) The very purpose and process of generation of these documents make them non-formal. They are produced for specific purposes. For example, the research funding agencies would need, say, ten copies of the research reports from the institution which has been provided grants for conducting research on a specific topic. The research institutions, therefore, would produce only a limited number of typed, mimeographed (cyclostyled) or rotaprinted copies of the report for the use of the funding agency, and for its own use. This document thus is neither available through trade channels nor would it be included in any bibliographical service. Its existence may be known from the annual reports of the research institution and the funding agency. A copy may be acquired from the research institution till the stock lasts. The libraries will, therefore, be required to make special efforts in identifying, locating, and acquiring these materials. A thorough knowledge about the diverse sources which generate a wide range of "grey" literature is essential for this purpose.

Another important component of the development literature is statistical data -- quantitative information about the socio-economic processes. Statistical information is an important tool for analysing problems, taking policy decisions, formulating development plans and finally measuring the results of planning activities. The creation and development of an efficient national statistical system for the a) collection, b) processing, c) dissemination and d) maintenance of different types of data is the major responsibility of all governments. During the last four decades, India has developed a reasonably efficient statistical system.

Socio-economic data are generated and collected through four processes:

i) collection on repetitive basis by official statistical agencies through census enquiries and sample surveys (Census/Survey Data). Eg: population census, agricultural census, sample surveys of household, rural labour enquiry;

ii) collection on a continuing basis by regulatory agencies for control purposes through "returns" (Control Data). Eg: data on industrial production, labour amenities in industries, banking;

iii) routine accumulation of data as by-products of administrative activities of the governments (By-product Data). Eg: data on railway transportation, income-tax, international trade; and

iv) ad-hoc collection of data through surveys by various agencies for specific purposes. Eg: the Programme Evaluation Organisation of the Planning Commission systematically collects data for evaluating specific plan programmes.

The data thus generated are termed as "official statistics", although data under category (iv) are also collected by non-formal agencies. However, a major part of the national database comprises control and by-product data. The DRI libraries must build up a strong collection of statistical documents published by these agencies both ad-hoc (i.e. in the form of a book), and serial publications. However, it is difficult to acquire many statistical documents since they fall in the category of "grey" literature. The libraries should establish contracts with the data generating agencies and systematically produce documents not sold through normal channels.

b) Inter-disciplinary Nature of Development Literature

Development is mission-oriented task, the mission (or goal) being the overall development of the nation. The knowledge of many disciplines contribute to the understanding of the development processes and provides solutions for the problems of development. For building up collections of the DRI libraries, it is necessary to understand the scope of the development literature expressed in "subject" terms. The library should acquire selected titles in the subject areas, which have impact on the development process, e.g., while framing the policy on energy or formulating a plan for energy development, one needs some broad acquaintance with the trends of technological developments in the area in addition to the socio-economic aspects.

Librarians should have knowledge of the core subject and also related subject areas. They refer to the Subject Category Fields in reference tools like Macrothesaurus for Information Processing in the Field of Economic and Social Development (Paris: OECD, 1978). It will show the wide range of topics that fall within the domain of "Development".

c) Universal Character of Development Literature

It is generally believed that knowledge embodied in social sciences is country/region specific (i.e. geographically oriented). Because of the uniqueness of socio-political and cultural situations, the knowledge generated in one part of the globe may not have great relevance in another part. Not withstanding the country/region specific nature of several disciplines in social sciences, access to literature generated in many parts of the world is essential for several reasons:

i) The problems and processes of development in different regions of the world have many common elements, e.g., the experience of a country in one region (say, South Asia) in eradicating rural illiteracy may be relevant to another country in a different region (say, Latin America). The problems of poverty/malnutrition or population growth are universal in character.

ii) Many advanced countries are showing interest in development activities and research. They generate a large number of documents useful in many countries.

iii) Main branches of economics (e.g. analytical tools like econometrics or theoretical foundations of economics) are universal in character.

iv) Increasing economic co-operation among different countries calls for relevant information about the participating countries.

In fact, development is no longer the problem of one country, it is a global concern. The World Development Report published annually by the World Bank to review the process of development highlights this concern. The United Nations on several occasions had also stressed the need for the co-ordination of information activities in this area. The establishment of DEVSIS is an example.

d) Lack of Bibliographical Tools

It is clear from the above discussion that we know very little about "grey" literature. The DEVSIS study team report, while examining the availability of development literature itself, and of the indexing and abstracting tools recording information about it, had observed a) that certain type of development literature of potential usefulness to the development mission are not readily available; b) that would be directly relevant to development research, and c) that the users do not know of any place of which they may refer with any degree of certainty of locating them.

The reason for this information gap is the lack of bibliographical tools. This is a great handicap in acquiring development literature largely represented by the "grey" variety. The DRI libraries, therefore, should :

i) identify the relevant institutions which generate development literature from national and international directors of development research institutions;

ii) obtain the annual reports of the institutions (including those of the funding agencies) and list of publications which provide information about their literature outputs.

iii) establish contacts with these institutions with the help of the researchers to get documents of potential usefulness (More often than not, the librarians of these institutions are the useful contacts); and

iv) obtain accession lists of libraries which acquire, sizable, numbers of "grey" literature.

4.3.4 Library and Information Services

In Section 3.2 of unit-3 dealing with libraries in R & D institutions, we have stated that three types of services, viz., current awareness service, reference service, and literature search services are the common features of all types of libraries.

The social scientists in DRIs and the scientists in R & D institutions are involved in similar activities and, therefore, their information seeking behaviour is also similar. The social scientists also share with R & D scientists the same problem of "information explosion". The DRI libraries should, therefore provide:

a) current awareness service :

i) in-house service based on the documents received in the libraries, and

ii) service based on commercial publications like Current Contents (Social and Behavioural Sciences, Management Sciences).

b) undertake literature search using comprehensive indexing and abstracting journals like Guide to Indian Periodical Literature. Index India, Index to Economic Articles.

As regards the literature search service, it should be noted that many indexing and abstracting journals in the field of social sciences are also available in the digital format (CD-ROMs).

Like the R & D libraries, the DRI libraries would also be required to share the literature resources of other libraries through an inter-library lending system. This service for their users assumes great importance, particularly in respect of "grey" literature. The DRI libraries should, therefore, develop co-operative relationships among themselves and exchange information about resources.

4.4 LIBRARIES IN TRAINING INSTITUTIONS

In the context of training, three terms "education", "training" and "development", which convey overlapping concepts, are often used interchangeably. Education (or formal education) is the preparation for life as a human being, which involves imparting values, attitudes and embodying knowledge, judgement, understanding and wisdom. It is offered by school or college, or a university leading to the award of a certificate (e.g. degree/ diploma). Training, on the other hand, is aimed at increasing the skills to perform a particular job. The Oxford

English Dictionary defines training as "to put in the way of efficiency by instruction and practice". A Glossary of Training Terms defines "training" as the "systematic development of the attitude/ knowledge/skill/pattern required by an individual in order to prepare adequately for a given task or job".

The example of the training of administrators/government officials will give some idea about how the three terms overlap each other and also differ. With particular reference to the public services (e.g., Indian Administrative Service), education is understood to be the general preparation which an young person receives before entering public employment. Education from a university is the essential qualification requirement for appearing in the competitive examination conducted for recruitment to the Indian Administrative Service.

Training is understood to be the specific preparation just before entering public employment ("pre-entry" training) as well as at a later point in the career and directed towards the improvement of the effectiveness in discharging the duties assigned to the individual ("pre-entry" training). After the selection for the Indian Administrative Service, the recruits (called probationers) undergo a foundation course (Pre-entry training) of three months duration in the Lal Bahadur Shastri National Academy of Administration, Mussorie. The course covers public administration (including management) planning and economic policy, Indian history and culture, law, political theory and constitutional law. This is followed by the professional course conducted at the Academy in two phases (a total period of about 36 weeks) intercepted by one year's on-the-job training in the State of allotment. Besides, imparting further training in specific aspects of the subject mentioned above, the important purpose of the professional courses are -- a) to provide basic knowledge regarding the working of the government in general and more particularly at the district level and below at which a probationer would have to function during the first six years of his career, and b) to equip him with the basic skills that are needed to operate efficiently the complicated government machinery. An administrator may also undergo further training (post-entry training) both in the Academy (e.g., Advanced Management Development Programme) or in other training institutions (e.g., Administrative Staff College, National Institute of Rural Development, Indian Institute of Public Administration) at a later point in the service career.

The "post-entry" training programmes of "post-experience" more well-known as training programmes are the "management development" programmes.

The above example shows that the pre-entry training encompasses both education and training, since the course contents of training cover a good deal of background material which also appears in the plans of study of universities. This is deliberately done for the purpose of rounding out the educational preparation of public servants, although some of them might have obtained a better education before entering the public service. While the pre-entry training focuses on imparting skills specific to the requirements of the jobs (e.g., training for Indian Audit & Accounts Service focuses on the principles and practices of auditing and accounting in the government), the management development is a systematic and continuous process of improving the overall effectiveness of the managers/administrators to meet the changing requirements of the organisation. It does not, however, ignore the basic skill requirements, but offers something more.

In this Section, we are concerned with the libraries located in institutions which offer both pre-entry and post-entry (or post-experience) training programmes. Such institutions may be grouped into three categories:

a) those offering both formal education (which may also be called "pre-experience' education) as well as post-experience programmes

b) those offering both pre-entry and post-experience programmes

c) those offering only post-experience programmes.

To category (a), belong the Indian Institutes of Management, which offer educational programme leading to the award of Post-Graduate Diploma in Management (PGDM) and also post-experience programme in management for working managers. Most of the institutions in category (b) offer training in public services in different aress. Eg: LBS National Academy of Administration, (Mussourie), Institute of Administration, Government of Andhra Pradesh (Hyderabad), Sardar Vallabhbhai Patel National Policy Academy (Hyderabad), Indian Audit and Accounts Services Staff College (Simla), Railway Staff College (Vadodara), State Bank Staff College (Hyderabad), State Institute of Rural Development (Hyderabad), State Bank Institute for Information and Communication Management (Hyderabad).

There are two types of institutions in category (c), viz., i) those open to the managers employed in all categories of organisation- business, trade, industry and governments; and ii) those exclusively open to the host organisations. Examples of the first type are: Administrative Staff College of India (Hyderabad), the National Institute of Rural Development (Hyderabad), the National Institute of Bank Management (Pune), the National Institute for Training in Industrial Engineering (Mumbai).

Examples of the second type are:

Management Development Institute, (Bharat Heavy Electricals Ltd).

Food Corporation of India, Central Training Institute, Delhi.

The training programme offered by various institutions may be grouped into several categories;

a) Foundational Programme (also called orientation or induction programme)
b) General Management Programme;
c) Programme in Functional Areas of Management;
d) Technique-oriented programme, and
e) Programme oriented to specific sectors.

4.4.1 Nature of Activities

While the basic focus of the training institutions is obviously on training (including workshops and seminars). However, there has now been a greater realisation, that the training activities need to be supported to improve the effectiveness of training and also to use the new knowledge generated by research as valuable input to the training programmes. Another activity which is increasingly being undertaken by many training institutions is consultancy. Consultancy is problem-solving activity. The consultants examine the problems confronting an organisation, help managers in analysing the problems, and accordingly recommend practical solutions, and finally help implement their recommendations. The job of consultants thus may be likened to those of medical practioners. Involvement of trainers (faculty members) in consultancy provides them opportunity to obtain first-hand-knowledge about the practical dimensions of management and to develop problem-solving skills. In turn, this knowledge recorded in the consultancy reports is useful for the training programmes.

The tasks involved in respect of training programme may be listed as follows :

a) monitoring the training environment, both national and international, for keeping in touch with the developments in training

b) making continuous assessment of the training needs of the target population group, introducing new programmes (i.e., courses) and updating the contents of the existing programmes to respond to the changing needs of the client organisations and dropping programmes that are no longer relevant;

c) designing the structure of each programme in conformity with its objectives;

d) identifying the reading material relevant to the programme's contents;

e) collecting material for case studies and writing cases for use in the programme;

f) developing audio-visual material for teaching including computer based tutorial (CBTs on CD-ROM format)

4.4.2 Information Requirement

The libraries located in training institutions are required to provide services to support three activities: training, research, consultancy. They cater to two categories of users:

a) faculty members involved in training, research and consultation; and

b) participants to the programme offered by the institution.

In relation to the activities described in the previous section, the faculty members would need -

i) information for drawing up plans for the training programmes;

ii) literature relevant to the programmes, both for the preparation of lectures and for the use of the participants as reading material;

iii) literature relevant to the research projects;

iv) literature relevant to the consultancy projects;

v) literature relating to training and management development.

The information requirements of the participants would be, by and large, related to the contents of the programme. It is quite likely that they would also need access to the references cited in the reading material provided to them as well those referred to by the faculty members while delivering lectures. Group discussions and practical exercises (e.g. preparation of project reports) on issues related to the programme contents are two important training methodologies adopted by the institutions. The participants would need quick access to literature during their involvement in group discussions and exercises.

As regards the subject on which information is required, it may be said that the libraries of training institutions need what is known as "management information", or "management literature". Management literature has a very wide connotation. It encompasses, besides the core topic "management" (including the "analytical techniques" used in management), topics belonging to many other disciplines called "environment studies". The relative proportion of "management" and "environment studies" would depend upon the nature of the institutions. The emphasis on environment studies would be more in institutions conducting training programmes in specific sectors of the economy like banking, transportation, etc.

For example, the National Institute of Bank Management, Pune, which caters to the training needs of the banking sector, would require intensive information on banks and banking and related economic issues. The information requirements on "management" would be limited to issues relevant to the management of banks. On the other hand, the Administrative Staff College of India which offers programmes on various aspects of management would need information on banks and banking in lessor degrees, since it conducts only one course on bank management under its sectoral management programmes, the institutions involved in providing fundamental training for public services would also need intensive information about their respective sectors.

Assessment of information requirements may be made using three sources:

i) the statement of objectives of the institutes;

ii) the calendar of training programmes and the details of the programme contents;

iii) the research and consultancy programmes.

The statement of objectives provide only broad outline of the nature of activities. Generally, the calendar of training programmes is drawn much ahead of the beginning of the academic sessions. This give a total picture of the training programmes. But the objectives of each programme and its contents will provide more insights in the specific information requirements of the institution. The course contents are useful in making assessment of specific information needs. Involving the libraries with the programme designing process would, therefore, be helpful both for the collection development and for planning services. The approach in respect of the assessment of information requirements is similar to that of the R& D institutions and development research institutions.

4.4.3 Collection Development

Books, journals, and newspapers would constitute the major segment of the collection of the libraries attached to training institutions. However, in building up a book collection to support post-experience training programme it is necessary to recognise several specific categories of books -- textbooks, "slanted" books and treatises and monographs.

Textbooks are characteristically graded by levels of difficulty for use at the corresponding levels and therefore, labelled as "Introductory", "Elementary" or "Advanced". A collection of standard textbooks (often multiple copies of selected titles) is an essential requirement of training institutions particularly those offering foundational programmes. A category of books that would supplement the textbook collection is "programmed" textbooks also called "teach yourself" type of books .

In the field of management there has been a proliferation of "Slanted" books, i.e., books oriented to specific target user groups. They are introductory in nature and are extremely useful in understanding many techniques that have been drawn from other disciplines and carry typical titles like "Economics for Managers ", "Statistics for Managers", Computer Programming for Managers". Another type of slanted books deals with the management of non-profit sectors of the economy, e.g., "Management of Higher Education ", "Health Care Management System". More often than not, they are like any other books on management, with little or no reference to the concerned sectors. "Slanted" books nevertheless, would supplement the textbook collection.

Treatises and monographs are also of great relevance for training institutions. Treatises are comprehensive and well - documented compilations of the latest available information on specific subjects presented in a systematic way. They provide foundation for an in-depth study and research in these subjects. Monographs are treatises on a limited scale dealing with narrower topics.. Many of the present day publications on special topics, may be considered as monographs . Many advanced textbooks also possess the characteristics of treatises and monographs.

In training institutions, there exists a general antipathy towards what is called highly theoretical (or esoteric) books. The primary user of such books are faculty members, and therefore, to what extent such books should be acquired would evidently depend upon their research interests.

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4.7 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Write an essay on Libraries for Business, Trade and Management. Give suitable examples.
2) Trace the importance of Libraries in Socio-Economic Development Institutions.
3) Explain the collection development activities and information services of the libraries attached to Training Institutions.

II SHORT NOTES

a) Grey Literature
b) Socio-Economic Development Literature
c) Non-Book Material used for Training

BLOCK - II : MANAGEMENT OF SPECIAL LIBRARIES

In the beginning units of Block-I we have listed the characteristics of special libraries and information centres. The traits, such as location of the library, subject orientation, special formats of the material, specialist user groups, physical size of the library, and emphasis on information services, which distinguish them from other types of libraries. Much of what is done in special libraries is done in all libraries, however, the above traits are the focal points in the management of special libraries and information centres. This Block provides an overview of managing the infrastructural facilities, finances, personnel, collection development in the special libraries and information centres settings.

Unit-5 deals with Special Library Buildings and Furniture. The basic elements essential in planning and design of special library buildings, furniture and fittings and also the equipment in special libraries and information centres have been described briefly.

Unit-6 explains the Special Library Finances and Personnel. Financial estimation, sources of finance and budgeting and budgeting control in special libraries and information centres are some of the major aspects dealt in this unit. Personnel Management in special libraries and information centres needs special emphasis as the quality of specialised services depends on the qualifications and skills possessed by the staff.

Unit-7 provides an overview of Special Library Collection Development: Book and Non-Book Materials. Book selection policies and procedures in special libraries and information centres are slightly differs with other types of libraries, as they give much emphasis on Periodical Publcations and Non-Book Materials like report literature, grey literature, government and institutional publications, microforms, and magnetic and optical media. Identification of core periodicals, their selection and control need special attention.

Unit-8 aims to familiarise the different types of Reference Sources needed in special libraries and informaton centres. Most of the special libraries attached to the R&D units give priority to build collection of secondary sources of information, like Abstracting and Indexing Services in various formats. Besides print, the information sources are also available online and also on CD-ROMs and websites.

UNIT - 5 : SPECIAL LIBRARY BUILDINGS AND FURNITURE

Structure

5.0 AIMS AND OBJECTIVES

Libraries grow with the growth of publications of knowledge resources. To house these resources and to serve them to the user community, libraries need proper building and furniture. This unit aims at describing basic elements involved in designing special library buildings and furniture.

After studying this unit, you should be in a position to

- describe the basic elements essential in planning and design of special library buildings, furniture and fittings
- explain the special library equipment, including modern equipment.

5.1 INTRODUCTION

Identification of a good location for library building is very important. The site selected for a library should be approachable to all the researchers and scientists working in that organization.

In most of the organizations in developing countries, some space is alloted within the main building for the library. In some cases we find libraries packed in small rooms. As the organizations grow, the libraries will also be growing in their collection, furniture and staff. The library professionals working in these organisations have to play great role in demanding a separate building for the library.

In planning a library building, a committee consisting of an architect, an interior designer and the librarian have to study the existing structure of special library buildings in order to take improvised decisions. The architect provides his valuable experience in design and construction of the building. The interior designer contributes his expertise over the internal arrangement and decoration with furniture and fittings. The librarian will explain his requirement of the building based on his understanding of social and technical relationships, organisational structure, technical processing and readers services etc., in the library.

5.2 SPECIAL LIBRARY BUILDING

There are several factors that provide the planners with a framework for designing library building. The basic elements of planning include:

1) Physical Structure
2) Space requirements
3) The layout

5.2.1 Physical Structure

The building design, architecture and location are very important components. The architect and information professionals have to work together to find out the best solution. The Unesco's Hand book for Information Systems and Services suggested solution for problems related with space and facilities in the following parameters:

a) Site

b) Prevailing architectural style

c) Number of structures on site and future growth

d) Groups being served
   - number and kind
   - organizational structure
   - range of disciplines and research interests

e) Information operations and furniture
   size of collections and growth rate
   nature of information services
   size of information staff, nature of growth, flow of work etc.

f) Amount of money available for implementing design and facilities

Whether a new physical structure is being planned or whether a redesign of an existing structure, these parameters will help the planner for developing a structure. From the above, the first three parameters relate to the creation of a new physical structure.

The following questions may be asked while planning a library building :

a) Is the site central or convenient to the user population ?

b) Is the site near or convenient to other services and resources required by the library/ organization ?

c) Is the structure flexible to permit changes to growth or new requirements ?

d) Is the floor space adequate for current needs ? Is it adequate upto fifteen years in future ?

e) Is the floor space flexible? Does it allow changes and rearrangement of portion?

f) Will the designed structure be capable of holding heavy equipments, document stocks and files?

g) Are the work areas noise proof and ventilated ?

h) Do the site and structure have necessary conveniences for the staff and the users ?

i) Is the structure designed for safety and for security ?

j) Is the architectural style harmonious with other structures in the campus ?

5.2.2 Space Requirements

Librarians have to provide information regarding the collection size, reading facilities for the readers, staff number and their working activities and other requirements in order to plan for space requirements needed inside the library.

Storing the Collection : Books, periodicals and reports in the library stacks; trade catalogue, publishers catalogue, news letters in display areas.

Readers Activities : Readers tables and chairs, catalogue cabinets, reading rooms, carrels in stacks. A minimum floor space of 3-5.5 sq. m. per reader is required.

Staff Activities: Work rooms, technical processing rooms, computer laboratory, reprographic services, micrographic services, staff rooms etc. For each staff member approximately 10 sq. m. space has to be provided.

Service Areas : circulation counter, stair cases, lifts, corridors, cloack rooms, entrance hall etc.

5.2.3 Layout

The layout depends upon functions and the nature of organization, size of proposed library and user habits etc.

After the approximate size of the functional areas of activities have been estimated, rough sketches of possible layout can be made to visualise how the available space can be used. This assists an architect in designing a new structure. After testing with basic arrangements final layout can be determined.

The service areas, where circulation and reference activities are conducted should be immediately evident to any one entering the library. Furniture and equipment could be used for partitions of rooms whereever possible.

5.3 FURNITURE AND EQUIPMENT

Special library furniture and equipment are required for various sections in the library. In the public areas stock shelves, catalogue cabinets, reading tables, chairs, circulation counter,

reference desks, filing cabinets, exhibition cases, journal display racks, rotatory stands, display stands, kick stools, shelf ladders, discussion tables, carrels, book cases, notice boards, sign boards etc.

In staff work rooms, the furniture like work tables, chairs, filing cabinets, book trolleys, book processing material has to be procured.

The special libraries and information centres possess modern equipment like photocopy machines, microfiche reader-printer, micro-card projector, microfilming unit, tape recorder, television set and VCR, computer CD-ROMs drives, scanners, digitisers, laser printers, LCD projector, etc.

5.3.1 Precautions for Selection of Furniture and Equipment

While selecting the above furniture and equipment the following precautions must be taken into consideration.

a) Flexibility of arrangement in desirable. Ready made furniture and equipment such as catalogue cabinet, exhibition stands and circulation desks should be avoided as these are not easily mocked or expanded in the future .

b) Whereever possible book shelving should be standarised so that the parts are easily inter changeable. Furniture and other equipment should be purchased in groups and uniform sizes.

c) Comfort, durability and variety should be sought especially in furniture.

d) Standard furniture and equipment should be purchased from notable manufacturers and suppliers like Allwyn, Godrej, Vinar, Mehra etc.

e) Economy and ease of maintenance should also be taken into account.

f) Colours and materials selected should be attractive and uniform and match with interiors of the building.

5.3.2 Lighting and Air-Conditioning

Proper lighting, and air conditioning will attract the readers to sit continuously and comfortably in the library. It creates good reading atmosphere. Hence the lighting , ventilation and air conditioning should be planned accordingly.

Depending on the size, collection, usage and budget of the library ideal air conditioning installation must be considered. It should provide the required heating, ventilation, air filtration, cooling and humidity control, all with in specified temperature and humidity through out the year regardless of type outside conditions.

The design of illumination should depend on the shape and size of area, different climatic conditions like long periods of sun shine, rain etc. The type of illumination should be decided after careful consideration of its quality, function, aesthetics and cost.

Excessive glass areas would let in more natural light which in turn may cause deterioration in printed material . When artificial light is used, an intensity of 500 lux may be sufficient. (The lux is the measure of illumination expressed as lumens per square metre). Adequate ventilation and proper acoustics are needed for comfortable reading.

5.3.3 Floors and Floor Coverings

The book stack load on the floor will be heavier than any normal material. Books may weigh up to 20- 25 kg per 90 c.m. shelf. British Standards Institution code for floor loading is "a maximum of 4.0 k.n./m2 distributed load in reading rooms and 7.0 k.n. concentrated load over any square of 300 m.m. side in book stacks. In the case of multi-storeyed buildings ground floor will be ideal for book stacks.

The floor areas may be grouped into various categories like heavy usage, medium usage and protected usage. In the heavy usage areas like walking area corridors and issue section carpet or carpet tiles may be used. The medium usage areas like reference section and reading rooms, smooth carpeting may be used to prevent noise of people walking through the rooms. The protected usage areas like computer lab, microfilming, Reprographic sections must have vinyl flooring so that dust will not accumulate in these rooms.

5.3.4 Shelving

Special libraries may have collection of various types of document media. They might have reference books, reports, patents, primary & secondary journals, non-book material, audio visual material, magnetic and optical media like floppy diskettes and CD-ROMs.

Based on the layout planning shelves must be purchased. The shelf depth, length, and height should be appropriate to accomodate majority of the books. The shelf depth and height should be between 25-30 c.m. . The length of wooden shelf should be less than 90 c.m. where as metal shelving could go upto 120 c.m. The shelf length will also depends on the gaze or thickness of the material. The overall shelf length should not exceed 2 metres.

Conventional shelving is not recommended for periodicals, pamphlets and non-book materials. Periodical display racks, newspapers stands, pamphlet boxes, microfiche, floppy and CD-ROM storage boxes are needed to shelve the special materials.

5.3.5 Special Furniture and Equipment

The library furniture is available in wood, metal, plastic and other synthetic materials.

The selection of items should be based on the quality, longevity, appearance, etc.

1) ***Study Carrels :*** Special libraries should consider at least a few study carrels for private study of serious readers. Carrels, particularly those with high backs, do afford the maximum privacy, even those contemporary styles in which the design allows three or four readers to be seated at one unit, out of sight of each other. Such units are essential in crowded areas. In large libraries some rooms are used as carrels.

   Carrels with electronic gadgets are in increasing popularity. Carrels could be designed to accommodate microform readers, audio and video equipment, computer terminals, etc.

2) ***Catalogue Cabinets :*** It is most common to see card catalogues made of wood. One reason is the ease of sliding wooden trays in and out without noise. Careful attention should be paid to the design of the loop or pull on front of the tray. The pulls should be comfortable and easy to grasp. The average card catalogue drawer holds approximately 1000 cards.

3) ***Charging Desk :*** This may be of special design or may be chosen from in the standard library or office equipment depending upon the individual needs of the library.

4) ***Micrographic Material :*** Various information products are now available in micro-form media. Micrographic material is an essential addition in special libraries. These material help in saving storage place and retrieving information effectively. Micro-film may appear as 16mm or 35mm reels. Engineering drawings, maps and continuous data can be stored on microfilm.

Microfiche: A sheet of 6"x4" size can contain about 98 printed pages of information by reducing the original size to 48x. They can be easily duplicated for easy mailing. security and reference purpose.

Ultrafiche : A sheet of about 6"x4" size can contain about 3000 pages by reducing the original size to 90x.

Aperture Card : Aperture card is of size of 3 1/4" x 7 3/8 " may contain upto 8 printed pages of information.

Computer-Output-Microfilm (COM) : COM contains computer-output accorded on microfilm form. COM devices are available for business, graphic art and scientific applications.

Microform Readers/Printers are used to read the microfilm/fiche. Prints of desired size and quality can be obtained. Required number of copies can be printed as we generate from xerox machines.

5) ***Microfilming Unit :*** A micro-fiche camera films original documents and produces a completely processed and usable microfiche. The operator sits at the console and feeds in documents. The film sheet is automatically processed and dried inside the machine.

The basic microfiche cameras are rotary, planetary and step and repeat. The rotary camera is generally the least expensive and the fastest. Most rotary cameras are 16mm. Documents are transported by a moving belt into the rotary camera and filmed as fast as they are fed. Most planetary cameras are 35mm. Multiple reduction ratios are usually available without changing lenses. These are simple to operate. Step and repeat cameras expose a series of images on sheet film according to a pre-determined format in multiple rows. Usually these cameras use 105mm film.

Microfiche Reader/Printer: Microfiche reader/printer is useful for reading the fiche or film of various sizes. The required part of a fiche can be exposed and seen on A4 size screen. Output can be taken onto A4 size paper. A number of copies of the same image can also be taken. A number of lenses are provided with the microfiche reader for reading various sizes of microfiche and ultra-fiche.

5.3.6 Reprographic Equipment

Photocopying equipment is essential for any library. In special libraries Scientists, Researchers often need photocopies of general articles and book chapters. Many times current awareness bulletins are provided by taking multiple copies of the output. Many organizations will have centralised duplicating machines located in the libraries.

Many high quality machines are available in the market. Desk top xeroxing machines can only generate photocopies of the same size of the originals. Heavy duty xerox machines can be used for enlargement, reduction, multicolour, sorting and stapling etc. Various copying systems like Reflex copying, Diazo, Thermography, Xerography, Electrofax are available.

5.3.7 Computers and Communications

Modern methods of computer & communication equipment are to be added in the libraries to cope up with the development of present day information technology. These are used for library automation, networking and for providing various documenttion services. Almost all the special libraries are now equipped with computers, CD-ROM drives, multimedia systems, scanners, fax, modem and internet connectivity.

Computers play vital role in special libraries. Many libraries use computers for information storage and retrieval and also for automation activities. A computer contains 5 basic components viz., input, output, arithmetic logical, control and storage unit. Keyboard, mouse or joystick are used as input devices. Monitor, printer or plotter can be used as output devices. The data can be stored internally on hard disk or externally on floppy diskettes of 3 ½ " or 5 ¼ " size.

PC XT, PC AT and 386 computers were used in libraries until recently. Now the Pentium II systems with 266 mhz clock speed, 32 /64/128 Mb RAM and 4/8.3 GB hard disk are commonly available. Pentium III systems also came into market with higher speeds starting with 350 mhz onwards. Computers are used by the library staff for various applications in acquisitions, issues and returns, serial control etc. Some terminals are available for the users to access online public access catalogue.

5.3.8 Compact Discs and Floppies

Many databases and journals are now available on floppis, CD-ROMs (Compact Disc Read Only Memory) and DVDs (Digital Video Discs). A floppy diskette of 5 ¼ " has 1.2 MB storage capacity whereas 3 ½ " diskette can take upto 1.44 MB data. Library database backups should be taken on to floppies time to time to avoid data corruptions and computer virus.

The Compact Discs have already revolutionised the music industry. The same compact discs are used for information storage and retrieval. A single sided CD-ROM disc of 12 cm. diameter and 1.2 mm. thickness can accommodate about 650 MB data which is equal to about 3 lakh printed pages of information. Many audio, video, multimedia and interactive CDs are procured in the l braries. These CDs have to be protected in dust proof storage boxes. CD-ROM juke boxes or CD towers may be used for accessing multiple CD-ROMs. CD networking would facilitate simultaneous multiple usage of the same disc over the network.

5.3.9 Multimedia Equipment

Libraries also contain audio cassettes and video cassettes on various educational and research activities. Multimedia and interactive CDs are available in many special libraries. The equipment like audio and video cassettes players and multimedia computers should be arranged in carrels so that sounds and visuals played by the viewers will not disturb the other readers.

5.3.10 Networking and Internet

Intranets and Internet are the talk of the day. All the computers connected in the library as well as in the organisation is called Intranet. Internet is the network of the networks all over the world. Computers are normally connected with ethernet cable internally. The organisation network is connected to the world either through dial-up modem or through VSAT.

5.4 LET US SUM UP

Let us recapitulate briefly what has been described so far in this unit.

- Identification of a good location is the basic requisite in the planning of a special library building. A committee consisting of an architect, interior designer and the librarian generally study the requirements of a special library building.
- The basic elements required to be considered while planning are physical structure, space requirements and the layout.
- Special library furniture and equipment required for various sections of a special library are book shelves, catalogue cabinets, reading tables, chairs, circulation counter, reference desks, filing cabinets, exhibition cases, journal display racks, rotatory stands, display stands, carrels, notice boards, sign boards, etc.
- Micrographic equipment and computer are increasingly finding their place in the special libraries . These equipment require special care and treatment

5.5 REFERENCES AND RECOMMENDED BOOKS

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5.6 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Explain the basic elements required for planning a special library building.

2) List out the various furniture and equipment required for a special library.

Briefly describe each item.

II SHORT NOTES

a) Study Carrel

b) Micrographic Equipment

c) Interior Design

UNIT - 6 : SPECIAL LIBRARY FINANCES AND PERSONNEL

Structure

6.0 AIMS AND OBJECTIVES

This unit aims to cover the areas related to financial estimations, ources of finance and budgeting and budget control in special libraries and information centres. It also aims to give an overview of personnel management in special libraries.

After studying this unit, you should be in a position to

- discuss the issues relating to financial management in special libraries and information centres
- explain personnel management in special libraries and information centres.

6.1 INTRODUCTION

Financial Management in libraries is concerned with determining income from all sources and limiting the expenditure within that income. The commercial organisations gener-

ally view the difference between the expenditure and the income in terms of profit or loss, which is not applicable to libraries and information centres as these are not-for-profit organisations. The special libraries and information centres are mostly supported by the grants from their parent institutions. As the concept of marketing of information services drives in, LICs have started thinking and working in terms of earning units.

As special libraries serve a limited number of specialised clientele, their services have a consideration of `quality-rather-than-quantity', besides their usefulness. The grants are mostly used for acquisition of macro and micro documents and salaries. The expenditure is also required for shelving, equipment, stationery and possibly for the services of temporary staff. The costs are likely to fall under three main headings: staff, stock and equipment. Budget must be prepared with a specific purpose and audience in mind as the special librarians have to influence the authorities with their negotiating power.

The quality and usefulness of special library service depends on the efficiency of the library staff. The staff represent the service, and they are key to the organisation of services. To discuss the staffing of a special library, we need to study the selection, recruitment, professional development, responsibility, service conditions and motivation of the staff.

6.2 FINANCIAL MANAGEMENT

Financial Management in libraries includes aspects like determination of finance, sources of finance, estimation of finance, preparation of budget, etc. Let us examine them in the context of special librarianship.

6.2.1 Determination of Finance

Libraries always suffer with financial limitations and crunch. The increase in conversion rate of foreign exchange and hike in the production cost of books and journals many times upset the library budget. The financial estimates and requirement should be determined in a planned manner in the special libraries. Previous years' financial plans and figures will help in estimating the projections for current and future years. Perspective plans will enable proper planning of the library expenditure.

6.2.2 Sources of Finance

The sources of finance in a special library can be listed as below:

- ⇒ Regular library budget.
- ⇒ Non plan budget
- ⇒ Funding agencies of national and international level
- ⇒ Fines from the library users for over due books
- ⇒ Reprographic and micrographic charges
- ⇒ CD-ROM, internet and online searches
- ⇒ Institutional memberships
- ⇒ Generation and sale of bibliographies
- ⇒ Indexing and abstracting services
- ⇒ Translation services
- ⇒ Marketing of information products
- ⇒ Conducting training programs
- ⇒ Consultancy services

6.2.3 Administration of Budget

Budgeting is the act of planning for revenue and expenditure over a period of time, usually a financial year. A budget is prepared before the expenditure takes place.

6.2.4 Preparation of the budget

The chief librarian or the information centre manager is responsible to prepare a budget. In large library systems, the departmental heads or branch librarians will prepare their own budgets and submit to the chief librarian. The chief librarian will prepare the final budget proposals to the library committee. The library committee, which consists of all heads of sections, Administrative Officer, Finance Officer, and the Director, will scrutinize the budget proposals. The proposed budget with proper justification will be sent to the parent organization.

The library managers should take time to put to understand the policies and process the budget in the parent organization. They should also learn to win budget arguments in the organization. Many times the librarian may not be invited for the organization's budget allocation committee. If the librarian's personal nature is effective, key members of the budget committee will be supportive for allocation to the library.

6.3 FINANCIAL ESTIMATION METHODS

There are several methods used by librarians all over the world in the financial estimation for their libraries and information centres. The important ones are :

6.3.1 Per Capita Method

A minimum amount per head working in an organization should be fixed. In special libraries per head amount calculation may be based on the type of research carried, number of managers, researchers and technicians working in that organization. Different group of people can have different per capita amount. This method is useful in the organizations where total annual expenditure in net is available.

6.3.2 Cost of Additions Method

In this method, the total annual budget is estimated on the basis of the cost of the total documents procured in one year. The budget spent in one year can be estimated only at the end of the year.

6.3.3 Method of Details

The total expenditure on purchase of documents, reprography, micrography, online, binding, staff salaries and other expenses incurred in one year will be calculated. Based on this expenditure, budget estimates for the next year will be made. This method holds good for many libraries.

6.3.4 Methods of Proportion

A minimum proportion or percentage of the total budget incurred by the organization is to be considered for its library. The percentage of allocation may depend on the type of library like industrial, research, extension etc. In the case of an industrial library it was recommended that 2 % of the budget of the organization should be spent on the library. In research organization, where the information is sought from various sources, it was recommended that at least 6

% of the institution budget should be spend on the library. The proportion allocated to the library, some times depend on the management, library committee and amount of research carried out in that organization. In general a proportion of 2 to 10% of the organization budget is spent on special libraries.

6.4 PERSONNEL MANAGEMENT

Personnel management plays vital role in any organization. Managing machines can be easier than managing the people. The process of advertising, interviewing and recruiting needs lot of attention. Once a candidate is selected, the organization can not change or remove him, easily even he/she was proved unfit for the post. The attitude, intelligence and general capability of the candidate must be judged before the recruitment. Good human relations must be maintained and the staff should be motivated to perform the jobs more effectively.

6.4.1 Qualifications

The normal library operations like book procurement, classification, cataloguing and issues/returns in special libraries will be almost similar to these of Academic and public libraries. Special libraries need to provide specialised services with the help of modern gadgets like microfilm, Reprographic, computer, multimedia and Internet etc. The services like SDI, Current awareness, News Clippings, Literature search, Indexing and abstracting, Repackaging and Marketing of information products are needed. Hence special library personnel should have the subject background, working experience in the relevant areas.

Many special libraries prefer to recruit professional staff with the related background areas with specialised training in Documentation, computerization etc. Preference will be given to those having working experience in special libraries. Scientific and technical libraries choose the candidate with service background and computer exposure.

Before recruiting a person, the job description, job specification, nature of duties and level of the job should be kept in mind.

6.4.2 Selection

In special libraries library staff should cultivate interest in gathering and providing information for researchers, administrators etc. They should be able to train their clients in accessing bibliographical information effectively and expeditiously.

The selection of the library staff should be properly planned and made by aptitude test, group discussions and personal interview etc. Normally the posts are advertised in newspapers & professional journals inviting applications from candidates fulfilling the qualification and experience. Written tests are conducted to short list the candidates. In some organization a screening committee will be made to evolve the criteria to short list the candidates. The short listed candidates will be called for interview. Occasionally experts will be identified and selected in absentia for managerial positions in special libraries.

The interview committee will consist of the Head of the organization, Administrative head and one or two subject experts from the outside organizations. Once the candidate is selected, an appointment letter will be issued with the terms and conditions. Appropriate section and work will be assigned after the candidate joins the organization. The selected candidate will be on probationary period for about one or two years. During this period the candidate's performance will be evaluated and made permanent.

In selecting a candidate, the organization may also give priority to the internal eligible candidates. This will give encouragement for the internal candidates. If more posts are available, outside candidates must also be selected, so that new intellectual ideas can be added to the organizational progress.

6.4.3 Professional Development

The library staff should be involved in the professional development activities. Special libraries have recognized associations like IASLIC, ASLIB, SIS, SLA, ALSD etc. These associations organize conferences, seminars, special lectures and produce news letters and professional journals. The staff should be encouraged to become members of such associations, present papers in the conferences and publish papers in the professional journals. This helps not only the staff but also the whole organization as the staff can contribute more to the organization with new ideas.

6.4.4 Responsibilities

Human resource management is a very important aspect for any organization. It helps to identify the activities and the amount of work to be carried out by the existing staff members.

Each employee should be made responsible for a specific job. The tasks may be assigned based on interests, and experience in that area. Once a staff member accepts a specific job, he/she should be given, some autonomy to perform the job effectively. If many people should interest in one area, the job can be distributed on rotation basis. By giving responsibilities, employees will be encouraged to perform the job effectively. The duties and tasks to be performed by each employee have to be recorded. The chief librarian has to monitor the performance of the self periodically.

6.4.5 Service Conditions

In the appointment letter some important terms and conditions will be intimated to the candidate. Different types of organizations like State Govt., Central Govt. public sector, Autonomous will have different service conditions.

The service conditions include their age of superannuation, responsibilities, pay and perks, retirement benefits code of conduct etc. Each employee while entering the service should be aware of his present and future prospects. Such policy will help the management and that staff to work more closely and effectively.

6.4.6 Motivation and Control

Human relations play vital role in motivating people for improved productivity. There should be personal discussions between the management and staff to find out and solve minor problems, if any. Periodical meetings should be held with the staff to take cumulative ideas for providing better library service.

Staff need to be encouraged to perform better. Some incentives must be provided occasionally. In case of extremely meritorious cases special promotions and increments could be provided.

The staff should be motivated to go for higher studies and specialised training in related areas. Whenever possible study leave should be given to the deserving staff for prosecuting higher studies. Time scale promotions and deputation to higher post could be considered Unnecessary chit chatting in the office, spending more time in the canteens, frequent late coming and early going from the office should be discouraged and controlled.

6.5 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

- Financial management in special libraries and information centres is concerned with determining the income mostly in the form of grants from the parent body and limiting the expendiutre within that income.
- There are various methods of financial estimation. The major ones include -- Per capita method, Cost of additions, Method of details and the Methods of proportion.
- Personnel management in special libraries is an important area as the quality and usefulness of service depends on the efficiency of the library staff.

6.6 REFERENCES AND RECOMMENDED BOOKS

ANDHRA Pradesh Open University. *Special Librarianship* (BLISc Course Material). Hyderabad: APOU, 1986.

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6.7 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Explain the Financial Management with special reference to special libraries in India.

2) Discuss the importance of Personnel Management in special libraries.

II SHORT NOTES

a) Per Capita Method

b) Qualifications of Special Library staff

UNIT - 7 : SPECIAL LIBRARY COLLECTION DEVELOPMENT : BOOKS AND NBMS

Structure

7.0 AIMS AND OBJECTIVES

This unit aims to describe the criteria for book selection in special libraries, acquisition policy and procedures, identification of core periodicals and serials control. It also aims to describe various non-book material and grey literature, including the report literature, technical reports, government publications, microforms, magnetic and optical media publications, which are used in special libraries and information centres.

After studying this unit, you should be in a position to

- list out various book and non-book materials required in a special library
- describe book selection policy and methods used in a special library
- explain collection development of non-book materials in a special library

7.1 INTRODUCTION

Document collection forms an important component on which the other activities and services depend in a library. The librarians, through selection and acquisition of documents take care of the users' requirement for information. Collection here refers to all information sources in whatever format they are produced. It includes not only conventional documents, like books and periodicals, but also non-book materials such as audio-visual materials, microforms, compact discs and other electronically stored information. Selection of stock in special libraries does not usually involve formal selection committees as it may be in public or academic libraries. Selection is done through combination of suggestions and requests made by both librarians as well as users specialising the subject. Uptodate material in the subject area of the parent organisation should receive priority in selecting the material.

7.2 BOOK SELECTION

Books, treatises and monographs constitute major collection in any library. Book selection is the process of choosing books for the library. Thousands of books are published every day. The cost of books is growing up. No library can afford to buy all the books published even in its own area of specialisation due to the financial constraints. Book selection is an intellectual process that involves various principles and tools. It is an important activity to meet the information needs of large number of library clientele.

7.2.1 Book Selection Policy

1) The library should have a written statement of policy covering the organizational needs and users demands.

2) The adopted policy should be strictly adhered to.

7.2.2 Types of Documents to be Selected

Special libraries aim at providing latest information to the researchers/scientists working in organization. They focus on collecting information rather than books. Some basic books on various aspects may be required on all the areas of the institutional activities. Reference books like encyclopedias, dictionaries, directories, yearbooks and statistical sources will provide upto date information. Handbooks, monographs, advances, annual reviews provide handy and latest information in specialised areas.

Journals, indexing & abstracting periodicals, conference proceedings, theses and dissertations, research and technical reports are essential in a special library collection.

7.2.3 Book Selection Tools

Various tools and guides are available to select books in special libraries. Some of the important points to be considered before proceeding to selection of documents are -

1) Study existing collection : The existing collection should be studied carefully to identify the weaker and stronger areas .

2) ***Accession lists of other libraries :*** The accession lists of similar subject area libraries can be procured for identifying good books.

3) ***Publishers and Book Sellers Catalogues :*** Some publishers and book sellers deal with specialised areas of subjects. Their catalogues will be helpful for selection of books. New and forth coming catalogues from subject publishers will be very helpful.

4) ***Book Exhibition :*** Books can be selected from the book fairs and exhibitions held locally and nationally.

5) ***Bibliographies :*** National bibliographies like British National Bibiolgraphy, Indian National Bibliography, Whitaker's Cumulative Book Index, Books-in-print etc., can be used to select books.

6) ***Book Reviews and Book Reviewing Periodicals :*** Some journals are exclusively devoted for book reviews. Some indexing and abstracting periodicals will also contain few book reviews in every issue.

7.2.4 Book Acquisition - Policy and Procedures

The process of book acquisition includes the activities like preparation of book selection slips, book selection committee decisions, placing orders for books, receiving the books and making payment for procured books etc.

1) Book Acquisition Policy

Special libraries will have certain policies to procure the books. The books must be recommended by the researcher, scientist or librarian. These proposals should be submitted to the library committee for its recommendation. The financial concurrence and approval should be made by competent authority for purchase of recommended books.

2) Book Acquisition Procedures

Book acquisition is done in three ways : i) Purchase ii) Gifts/Donations iii) Exchange. Many international and national organizations do donate their publications including their annual reports and research highlights. Organisations like British Library and United States Information Service also donate books.

Some organizations provide books and publications on exchange basis. While receiving the books, the institution will come to an understanding that it would reciprocate by sending its own publications.

For purchase of books, stipulated procedures in the organization have to be followed. Some of the regularly practised procedures are:

1) ***Tenders/Quotations :*** Book acquisition has to be done by following certain government rules and regulations. The organization will call for tenders for supply of books by announcing in leading newspapers. If the procurement is to a limited amount. and period, quotations will be invited from local book suppliers.

2) ***Appointment of Approved Firms :*** The tenders and quotations will contain the information like the name of the firm, its clients, experience in the areas of book supplies, library discounts as per GOC, methods and mode of supply of books and other acceptable terms and conditions. A comparative statement will be made available and list of approved firms will be generated.

3) *On-Approval Basis :* Books will be brought by the approved firms on specialised areas and exhibited in the libraries for about 15 days. The researchers, scientists and library professionals will select the books.

4) *Role of Library Committee :* The list of books selected by the researchers/scientists will be made available to the library committee. The committee will go through the list and scrutinises the usefulness of the recommended books. If sufficient funds are not available, the committee will prioritise the books to be procured.

5) *Standing Orders :* Some advances, annual reviews, progresses, serial publications and yearbooks that are regularly required by the organization will be ordered to the book sellers on standing order basis. Whenever a new volume is published, the same will be supplied to the library.

6) *Co-operative Acquisition :* Due to limitation of funds, libraries may prefer to go for co-operative acquisition methods. By this libraries located at near by places can purchase different titles and share the resources.

7.3 SELECTION AND ACQUISITION OF SERIALS

Selection and acquisition of Serial publications is primarily based on their identification, which is generally done by the users specialising the subject. Librarians help the users in identifying the required subject periodicals through various directories. In this section we will discuss about the identification of core periodicals, methods of acquisition and their management.

7.3.1 Identification of Core Periodicals

Periodicals are publications containing articles and brought out continuously at certain intervals of time. Periodicals may be grouped into three categories: 1) Magazines, 2) Journals, and 3) Serial publications.

Magazines are popular periodicals that contain topics of mixed interest to the public. Journals are devoted to specific subjects and contain articles pertinent to that subject. Serial publications are normally published every year and appear as Advances in... Annual review of... Progress in ... etc.

Journals contain articles that provide un-filtered first hand information required for researchers and scientists. Primary journals contain the research articles in which the original research findings are published. Secondary journals contain information about information. Abstracting and indexing journals are put under this category.

The periodicals may be weekly, fortnightly, monthly, quarterly, half yearly, annual etc.

Selection of periodicals in special libraries is a difficult task. The library needs to know the requirements of the readers. The selection of periodicals for subscription / renewal in special libraries depend on the following:

1) The scope of the library.
2) Availability of financial resources.
3) Readers demands
4) Usage of existing periodicals in the library.

Core periodicals in relevant subjects have to be identified from various sources. The journals may be recommended by the scientists or the researchers. They may be identified for selection from announcements and reviews or from the list of most cited journals.

7.3.2 Methods of Acquisition

The periodicals can be acquired through any one of the following methods:

1) By Subscription
2) By Exchange
3) By Gift
4) Through Institutional Membership

1) By Subscription: The periodicals are generally procured directly from the publishers or through subscription agents authorised by the publishers. The subscription agents are appointed on the basis of terms and conditions of supply of periodicals.

2) By Exchange: Organisations exchange their periodicals with other organisations for their publications. Exchange is also done on a piece for piece basis, that is, a duplicate issue of journal is exchanged for another issue of a journal that is missing in the library. This would help in making complete sets of periodicals.

3) By Gift: Many organisations and learned societies send their publications free of cost for the sake of publicity for their research output. Some libraries do send their abstracting and indexing periodicals to other libraries. Some publishers send their periodicals for six months to one year on gift basis to make the libraries subscribe to them at a later date.

4) Through Institutional Membership: Several professionals associations/ learned societies generally publish one or more regular periodicals. These publications will be sent to the libraries having institutional membership to the learned societies.

7.3.3 Procurement of Periodicals

Periodicals can be procured directly from the publishers or through subscription agents. It is better to procure Indian periodicals from the publishers to ensure regular supply and safety of payments made in advance. In the case of foreign periodicals subscription may also be made through subscription agencies. Selection of subscription agents is rather a different task. We must verify the reliability, reputation, and quality of service of the subscription agencies.

Administrative procedures necessitate the calling for quotations. The subscription agencies would be required to furnish their terms and conditions for supply of journals in respect of conversion rates, advance payment, handling charges, postage charges, supply of missing issues, execution of agreement, production of bank guarantee etc.

7.3.4 Serials Control

In research libraries and university libraries hundreds of journals with different frequencies are procured. It is necessary to maintain a record of received issues and send reminders for missing issues. There are various methods of recording the journal issues.

1) Register System : The periodicals may be entered in Register in alphabetical order by journal titles or by periodicity of the journals. This system is suitable to small libraries.

2) Ledger System : The Ledger System is suitable for medium sized libraries. Each journal is allotted one or two pages arranged in an alphabetical order of journal title. An index to periodicals is given in the beginning of the ledger.

3) One Card System : It is difficult to keep a watch on receipt of journals in Register and Ledger systems. Small libraries subscribing to about 100 periodicals may use

this system. In One Card System, blank cards of 6"x4" size with particulars like title of periodical, frequency, publisher, supplier, receipt particulars, etc. on the recto of the cards are recorded. On verso of the card the bill number and date, subscription amount, voucher number and date, reminders sent, etc. will be recorded..

4) ***Three Card System :*** Dr.S.R.Ranganathan has devised this system. The three cards used in this system are - 1) Register Card, 2) Check Card, and 3) Classified Card. These are of 5"x3" size with different colours.

Register Card contains information about the title of periodicals, publisher, vendor, periodicity, order number and date, volume, year, bill number and date, date of receipt, etc. Check Card is also called Due Date Card. It keeps watch on receipt of different issues of periodicals and reminds the person handling the system and alerts him to send reminders for over-due receipts. The number and date of reminders sent is recorded on respective cards. Classified Index Card can be used as Subject Cards. Cards are arranged according to class numbers. It contains information like class number, annual subscription, periodicity, title, vendor, publisher, volumes available, indexes, etc.

*5) **Kardex :*** The Remington Rand of India has introduced this system. The steel cabinet with 10 ½" x 24" x 20 ½" size is used for recording the periodicals. Each unit contains seven trays and holds a total number of 504 cards. For each periodical a buttom card and a top card are prepared. The bottom card contains information including the journal title, subscription number, periodicity, year, volume, issue, etc. The top card will contain information like volume number, date of publication, date of receipt of bill, voucher number, subscription amount, agent, volume number, etc.

*6) **Computerised Serials Control :*** With the use of computer programmes and software serials control has become very easy. Journal subscriptions, renewals, receipt of journals, claims for missing issues, etc. can be done automatically. The journals list can be sorted and printed in desired formats.

7.4 SELECTION AND ACQUISITON OF NBM

According to Dr. S.R. Ranganathan, the documents can be grouped into conventional (Books, monographs, periodicals, reports, maps, atlases etc.), neo-conventional (Standards, specification, patents, etc.), non-conventional (Microfiche, microfilm, audio video, floppy diskettes, CD-ROM etc.) and Meta-documents (Large size documents like Chemical Abstracts). All the neo-conventional, non-conventional and meta-documents can be called as non-book material (NBM). From the type, all the documents other than books, monographs and treatises will come under NBM. Special libraries are more concerned with the collection of this type of material.

7.4.1 Report Literature

Many research and development organizations occasionally produce their research findings in the form of research reports. They contain research progress and research results which are mostly sponsored by the organizations. Research reports bear unique code numbers and produced in limited numbers. They are published for internal and restricted circulation. There are few accepted standards available for presentation of information in reports i.e., BS 4111:1972. Specification for the presentation of research and development reports. ANSI 239.18 : 1974: Guidelines for format and production of scientific and technical reports.

7.4.2 Patents

Inventions and innovations are made in all the fields of science and technology. If inventors want to have rights and protection they need to patent their discoveries/achievements. The

patent is a limited monopoly granted by the appropriate government. If any body wants to use a patented invention for commercial purpose, they need to pay some royalty to the inventor. Patentee may be an individual, company, university or organization. In India, patent rights are normally allowed for 14 years on every registered patent. For obtaining a patent, the inventor has to submit an application to the patent office by certifying that the invention was of his own intellectual discovery. The patent office will examine the patent and publish it in its official patent gazette (Gazette of India, Part III, Section 2). If no opposing claim was made by other party for 18 months, the patent will be granted.

The patent will contain the following details:

1) Name and Address of the patentee
2) Patent Number (and Country)
3) Date of Application
4) Title of the Invention
5) Patent Classification Number
6) Brief statement of invention
7) Details of the invention
8) Application and uses of the invention
9) Limitations and constraints

7.4.3 Standards

In order to maintain uniformity in various industrial and manufacturing process, methods, measurements and terminologies certain standards have to be adopted and followed. Standards are prescribed for accepted quality and performance value of products like electrical, cable, laboratory and engineering appliances. There are standards in non-industrial sectors also, for uniform practice and performance. Standards are available for producing bibliographies, measures, dimensions, test methods, practices etc.

International Standards should be adopted to facilitate uniform production and trade in various countries. Standardised parts should be used in all manufacturing sectors so that spare parts for all machines are available everywhere. The International Standards Organization (ISO), British Standards Organization (BSO), Indian Standards Institution (ISI) etc., evolved and provided the standards on various aspects. Each standard bears a unique identification code comprising letters and numbers.

E.g.: IS 368 - 1963 Electric Immersion Heaters

BS 3456 -1963 Electric Immersion Heaters

7.4.4 Government Publications

Government policies, procedures, decisions and progress are produced in various formats and methods. They are produced for officials to carry out and implement the government's decisions. Some documents are produced to let people know about the government policies its benefits to the public. Government publications provide and statistical data relating to socio-economic issues, development plans and policy decisions. They also provide legal, trade, industrial, business acts and rules. Government publications can be grouped into 4 categories.

By subject (e.g. Agriculture in brief)

By frequency of publications (e.g. Monthly bulletins)

By form of presentation (e.g. Statistical directories, year books)

By source of origin (e.g. Parliamentary, legislation, judicious, constitutional etc.)

7.4.5 Microforms

The printed information is photographically reduced and made available in microform. To read the microform, a magnifying device has to be used. Depending upon the nature form and size of reduction, microforms can be grouped into a categories.

1) *Microfilm* : It is available in 16 mm & 35 mm format.

2) *Microfiche* : A microfiche of 6"x 4" can occupying about 98 printed pages reduced to the size of 24x. An ultra fiche of 6"x4" can occupy about 3000 pages with reduction of 60x.

3) *Micro-Opaque* : The micro images are printed on opaque card. These can be read by a magnifying lens. But these can't be reproduced.

4) *Aperture cards* : These are the card pieces of 18x8 cm size with windows into which microfilm pieces are inserted.

Microfilm and microfiche are very common in the special libraries. The cost of production, storage space in microform will be more economical than book form. Many international organizations like IDRC, UNESCO, ILO, ICRISAT, UMI are producing their reports in microform.

7.4.6 Magnetic Media

Since the information is available through computers, many information products are now available in magnetic media. Any library having computers can use this material effectively. The production cost is cheaper and retrieval will be faster. Magnetic tapes and floppy diskettes are two important types of magnetic media. Magnetic tape is like microfilm, which contains information on magnetic tape. Floppy diskettes are of two types. A floppy of 5 ¼ " size can occupying about 1.2 MB data where as a floppy of 3 ½ " size can occupying about 1.44 MB storage capacity.

E.g.: Current Contents on Diskettes. Philadelphia: ISI, 1995 - .(Weekly)

a) Physical and Chemical Sciences

b) Social and Behavioural sciences

and five other editions.

7.4.7 Optical Disks

The compact disks are used for information storage and retrieval. Many encyclopaedias, dictionaries, yearbooks, indexing & abstracting journals are available in CD-ROM (Compact Disk Read Only Memory) form. A single sized CD-ROM can store about 650 MB i.e. about 3,00,000 printed pages. Jukeboxes, CD towers will be useful for the network and multiple user access.

E.g.: 1) Chemical Abstracts

2) CABI

7.5 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

- Books, treatises and monographs constitute the major items of document collection. Special libraries, especially those devoted to the Research and Development incur a major portion of their budget on acquiring the research periodicals.
- Book selection is an intellectual process as it involves various principles and tools of selection. A written policy statement is required to provide guidelines for book selection.
- Computerised Serial Control systems are replacing the traditional methods of serial registry systems, such as Ledger system, Three Card system, Kardex, etc.
- Special library collection also concentrates on non-book materials, (which consists of report literature, patents, standards, government publications, microforms, magnetic media, optical discs, etc.)

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7.7 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) What is Collection Development ? Explain the problems of collection development with special reference to special libraries.

2) Discuss the methods of Serial Control in special libraries.

3) What is Non-Book Material ? Discuss any three of them used in special libraries.

II SHORT NOTES

a) Microforms
b) Book Selection Policy
c) Co-operative Acquisition

UNIT - 8 : COLLECTION DEVELOPMENT IN SPECIAL LIBRARIES : REFERENCE SOURCES

Structure

8.0 AIMS AND OBJECTIVES

The aim of this unit is to familiarise you with different types of reference collection in special libraries. Further it also aims to help you to build reference collection on specialised areas.

After studying this unit, you should be in a position to

- list out various reference sources required in a special library
- describe the features of major reference sources
- provide examples of guides to basic and specialised reference sources.

8.1 INTRODUCTION

We see two kinds of reference sources in a library. They are General and Special reference books. As you know, reference books differ from the other books in the format and content of the subject matter. These books are not used for continuous reading. The arrangement of the subject content is alphabetical, chronological, logical, classified or tabular form. Reference books are used for consultation as sources of information. These sources provide instant answers to a wide range of enquiries.

Reference collection development in special libraries is crucial task. In order to provide latest information to the users the library has to procure reference documents. This unit deals

with the reference tools that are useful in special libraries. These include dictionaries, encyclopedia, directories, yearbooks, abstracting & indexing periodicals etc. It also prescribes the guides that are useful in selecting and collecting reference books in the special libraries.

8.2 REFERENCE SOURCES

According to Librarian's Glossary, "Books such as dictionaries, encyclopedias, yearbooks, indexes, which are compiled to supply definite pieces of information to varying extent and intended to be referred to rather than read through". Let us discuss the nature of reference sources used in special libraries.

8.2.1 Dictionaries

The word `dictionary' is derived from a Latin word `dictionarium', where dicto meaning `a word'. Dictionary is most important and commonly used reference source. This is frequently referenced at home, office, college or library while reading, writing and discussing. These are widely used for getting meaning of words. In addition to spelling and meaning of words, dictionaries provide synonyms, antonyms, homonyms, products, usage etc.

Various alternate names for dictionary include lexicon, thesaurus, vocabulary, glossary, wordbook etc.

Various types of dictionaries are used for different purposes.

Types of dictionaries

1) General
2) Subject
3) Translating
4) Special

I. General Dictionaries

The general dictionaries contain very popular words and their meanings. These can be classified into four groups according to purpose, size, volume and usage.

E.g.: *Oxford English Dictionary,* 2nd ed. Oxford: Clarendon Press, 1989.
Webster's Third New International Dictionary, 3rd ed, Springfields: G&C Merriam,1961
Random House Dictionary of the English Language, New York: Random House, 1968.

Oxford, Collins, Longman, Chambers, Cassell, Webster, Funn & Wagenals are some of the famous publishers of the general dictionaries.

II. Subject Dictionaries

Subject dictionaries contain the terms related to a particular subject. Rapid growth of knowledge specialization in the fields necessitated the development of subject dictionaries.

They contain highly specialized terms of a particular subject. They provide descriptive information and accurate definitions of technical terms.

McGraw-Hill, Elsevier, Penguin, Chambers are some of the leading publishers bringing out subject dictionaries.

Eg: *The McGraw-Hill Dictionary of Modern Economics: a hand-book of terms and organizations /by Greenwood.* 3rd ed. New York : McGraw-Hill, 1983.

III. Translating Dictionaries

They give exact equivalent words, in or and more languages but not the definite words. The vocabulary is limited. Historical and etymological details are not given. Pronunciation, parts of speech and gender are provided for the convenience of the translator.

In translating dictionaries you have bilingual dictionaries which deals with two languages, Trilingual dictionaries dealing with three languages and multi-lingual dictionaries dealing with four or five languages.

E.g.: *Elsevier's Russian-English Dictionary/by Macura.* New York: Elsevier, 1990.
Oxford Advanced Learner's English-Chinese Dictionary, 3rd ed/ by A.S. Hanby. Beizing; Hongkong: OUP. 1989.

Twenty one language dictionary/ by H.L. Ouseg, Owen, 1962.

IV. Special Dictionaries

Unlike general dictionaries special dictionaries deal with specific disciplines & subjects. These are useful for those who study a specific subject in detail. General dictionaries do not cover all these special terms.

Some dictionaries cover linguistic aspects like pronunciation, punctuation, spelling, synonyms and antonyms usage, etymological and historical details. Dictionaries covering a special type or class of words like slang, new words, difficult words abbreviations and acronyms, dialect words and obsolete words.

Eg.: *Webster's new dictionary of Synonyms: a dictionary of discriminated synonyms with antonyms and analogous and contrasted words.* Springfold, Massachusetts : G & G Merriam Co., 1980

8.2.2 Encyclopedias

The word `encyclopedia' is derived from the Greek word *Enkyklospaedia,* where *En* means in, *Kyklos* means a circus and *pedia* means institutions. i.e. at Circle or complete system of learning. Encyclopedia is storehouse of valuable knowledge providing significant information.

Encyclopedias consist of articles covering all branches of knowledge. The subjects are arranged alphabetically . At the end of each article, bibliography is provided. It contains diagrams, illustrations, photographs and short biographies of notable people. Usually encyclopedias appear in multi-volumes.

Types of Encyclopedias : 1) General, and 2) Special or Subject

I. General Encyclopedias

Encyclopedia contains articles related to all branches of knowledge. They deal the subjects minutely. They provide brief information on all the subjects and written in simple language for the benefit of the general users. Annuals or supplements are provided to supplement the new developments. They are grouped into different categories according to size, format, user's age, area covered and language.

E.g.: *The New Encyclopedia Britanica,* 15th ed, Chicago: Encyclopedia Britanica, (32 Volumes)

A World Book Encyclopedia. Chicago: World Book Child Craft International, 1989. (24 Volumes)

II. Special or Subject Encyclopedias

These encyclopedias will focus on a particular subject and cover in depth. The articles are arranged alphabetically. These are published in almost all the subjects to benefit the researchers and scientists working in that area. Annual supplements are also produced for incorporating latest developments in the specified areas.

Eg: *McGraw-Hill Encyclopedia of Science and Technology*, 6th ed. New York: McGraw-Hill, 1987. (15 volumes)

Encyclopedia of Library and Information Science, New York: Marcel Dekker,

8.2.2 Directories

Directories provide information on organizations, institutions, associations and persons etc. Directories are useful sources of information for reference purpose. They provide information related to name, address, functions, structure, objectives etc. The entries in the directories are arranged alphabetically or classified order. Directories of persons, industries, universities, exporters and importers, telephone department etc., are well known sources of information. The directories can be couped into two categories : 1. General and 2. Special.

I. General Directories

These provide information about persons and places at National and International level.

Eg: *Times of India Directory and Yearbook including Who is Who. Bombay:* Benenett Longman, 1950 - (Annual) (Ceased Publication)

II. Special Directories

These provide information about educational, professional, trade and business organizations. Their coverage may be local, regional, national and international.

E.g.: *Commonwealth Universities Yearbook.* London: Association of Commonwealth Universities.

Encyclopedia of Associations. Detroit: Gale Research Co. (Bi-annual) 3 Volumes.

8.2.3 Yearbooks

The developments, achievements of the previous year are published every year in the form of year books. Year books are published serially with updated statistical and descriptive information on various aspects. These are very good reference sources and helpful to the students appearing in competitive examinations. Year books can be grouped into two categories: 1) General Yearbooks, and 2) Supplements to Encyclopedias.

I. General Yearbooks

They record the significant events of the previous years. The arrangements of information is very simple and an index is provided for easy access to information. International Year books, National Year books, Organizational Year books and Subject Year books come under general year books.

E.g: *Statesman's Yearbook, Statistical and Historical Annual of the States of World.* London: New York: Macmillan, 1864- . (Annual)

India : A Reference Annual. Delhi: Ministry of Information & Broadcasting, 1953- (Annual)

II. Supplements to Encyclopedias

Almost all the encyclopedias publish supplements every year incorporating the latest developments in the subject concerned. They record the major events of the previous year. They vary in their coverage, arrangement, presentation, index etc. The encyclopedia supplements could be adult, juvenile, or subject oriented.

E.g: *Britanica Book of the Year.* Chicago: Encyclopedia Briannica Inc.,1938- . (Annual)
Americana Annual: Encyclopedia of Events. New York: Americana Incorp., 1923-

8.2.4 Abstracting and Indexing Tools

These are called as secondary periodicals, which provide the filtered information from the primary journals. They provide information about information and help researchers to know the latest developments in their areas.

Eg: *Current Contents*
Biological Abstracts
Chemical Abstracts
Library and Information Science Abstracts

8.3 GUIDES TO REFERENCE SOURCES

To guide the librarians, there are some secondary sources of information, which help in evaluating the reference sources. These are called as Guides Reference Sources. There are two types of such sources: Guides to General or Basic Reference Sources, and Guides to Special Reference Sources.

8.3.1 Guides to Basic Reference Sources

Some of the most frequently used guides to select the basic reference sources are:

A. General Guides to Reference Books

Eg.: *Guide to Reference Material.* 4th ed/by Albert John Walford. London: Library Association, 1987.

It is published in three separate volumes: 1) Science and Technology, 2) Social Sciences, and 3) Generalities, Languages, Arts and Literature. UDC system is followed in the arrangement of entries. Annotated entries are provided. Author, title and subject index are provided for each volume.

B. Current Sources to Reference Books

Eg.: *Book List. 1905* - . Chicago: ALA, (s.m.)
In the middle of each issue reviews prepared by ALA will be appeared.

Introduction to Reference Work/ William A. Katz. New York: McGraw-Hill, 1978. (2v.) It covers all general and special reference sources in all the fields of knowledge.

C. Guides to National Reference Sources

I. American Reference Books

Eg:. *American Reference Books Annual,* 1970 - (Vol.1)/ed. by Bohlan S. Wynar. Littleton: Libraries Unlimited, 1985.

Published annually and it gives about 3000 entries. General Reference Works are given in Part-1 and Subject reference works in Part-2. Five yearly cumulations are available.

II. Australian Reference Books

Eg. *Guide to Australian Reference Sources:* Humanities/by Wilma Roadford. *Sidney:* Library Association of Australia, 1983. 81p.

It gives nearly 400 items with annotations.

III. Canadian Reference Books

Eg.: *Canadian Reference Sources:* A Selective Guide/ by Dorathy E. Ryder. *2nd ed. Ottawa:* Canadian Library Association, 1981. 311p.

It is a selective annotated guide to published books in Canada

8.3.2 Guides to Special Reference Sources

There are guides to special reference sources, which help the subject specialists looking for the reference sources in a particular subject area.

I. Indexing and Abstracting

Eg.: *Abstracting and Indexing Sources in Science and Technology.* 2nd ed. Metuchen: Scare Crow Press, 1985.
(It gives about 200 titles arranged by broad subject categories).

Abstracting and Indexing Service Directory. Michigan: Gale, 1983.

II. Union Lists

Eg.: United States, Library of Congress, General and Bibliographic Division. *Union Lists of Serials: A Bibliography/* compiled by Ruth S. Freitag. New York: Library of Congress, 1964
(It lists about 1200 union lists arranged geographically).

III. Bibliography of Bibliographies

Eg.: *Indian Reference Sources: An Annotated Guide to Indian Reference Material.* 2 v. 2nd ed /by H.D.Sharma, Varanasi: Indian Bibliographic Center, 1986.

First published in 1974. It covers all Indian languages. Volume-1 covers Generalia and Humanities. Volume-2 covers Social Sciences, Pure Science and Applied Science. Arrangement of entries is by subject. Author and title index is given at the end.

IV. Encyclopaedias

Eg.: *Best Encyclopaedias: A Guide to General and Subject Encyclopaedias,* 4th ed. Ed/ by Kister, K.F. .Phonix: Oryx press, 1986. 356p.

The first three editions were published by R.R. Bowker. 4th ed published by Oryx press. It gives 52 general and 450 specialised encyclopaedias grouped under subject categories.

V. Dictionaries

Eg.: *World Dictionaries in Print:* A Guide to General and Subject *Dictionaries in World Languages.* New York: Bowker, 1983. 579p.

More than 13,000 dictionaries in 238 languages published in 100 countries are listed. Includes technical, subject and language dictionaries.

VI. Directories

Eg.: *International Bibliography of Special Directories/* ed by H. Lengenfelder. 7th ed. Munich; New York: Saur-Gale, 1983. 474p.

Earlier published as International Bibliography of Directories. It contains 6,000 entries divided into 72 subject groups. Sub-entries are arranged by country.

VII. Biographies

Eg. *ARBA Guide to Biographical Dictionaries/* ed by Bohdan S.Wynar. Littleton, Colorado: Libraries Limited, 1986. 444p.

VIII. Geographical Sources

Eg.: *Encyclopaedia of Geographic Information Sources.* 4th ed./Ed. by Jennifer Mossman. Detroit: Gale, 1988.

Published in 2 vols. Volume-1: U.S. in 428 pages with location index published in 1986. Volume-2: International in 479 pages with city, country and regional index.

IX. Statistical Sources

Eg:. *Statistical Sources, 1991.* 14th ed./ Ed by Jacqueline Wasserman O Brien and Steven R. Wasserman. 2v. Detroit: Gale Research Inc, 1990. 3800p.

Covers more than 22,000 specified topics. It contains 94,000 citations and adds nearly 200 more international sources.

X. CD-ROM Sources

Eg. *CD-ROM End User.*
Lists CD-ROM products and titles subject wise.

Silver Platter CD-ROM Product Directory, 1998.
It contains CD-ROM and Online databases on various disciplines.

XI. Online and Internet Sources

Eg. Guide to Internet Sources

Britannica Internet guide. http://www.ebig.com
It classifies, rates and reviews about 65,000 sites

Web Directories: http://wws.studyweb.com
It has about 15000 academic and research URLs

8.4 LET US SUM UP

- Books, such as dictionaries, encyclopedias, yearbooks, directories and indexes are called Reference sources. They are compiled to supply specific pieces of information.

- Abstracting and Indexing services provide the filtered information from the primary sources. They provide information about the books and articles appearing in primary periodicals and help the researchers to locate the recent publications.
- Guides to reference sources help the librarians to locate and evluate information sources before purchasing them.

8.5 REFERENCES AND RECOMMENDED BOOKS

ANDHRA Pradesh Open University. *Special Librarianship. Hyderabad:* APOU, 1986.

GUIDE to reference material, 4th ed / edited by Albert John Walford. London: LA, 1987. 4v.

INFORMATION Sources: an international selective guide/ K.S. Umapathy. New Delhi: Vikas, 1978.

KATZ, William A. *Introduction to reference work.* New York: McGraw-Hill, 1978.

8.6 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) List out the various Reference Sources. Briefly discuss any three categories found in special library collection with examples.

2) What are the Guides to Reference Sources ? Describe briefly any three guides with examples.

II SHORT NOTES

a) Subject Dictionaries

b) Subject Encyclopedias

c) Abstracting Periodicals

BLOCK - III: SPECIAL LIBRARY SERVICES

Emphasis on Information services is the most distinguishing characteristic feature of the special libraries. The parent bodies establish libraries for getting relevant and uptodate information and as quickly as possible. Specialised services organised around a spcialised collection in anticipation of the needs of the clientele and quick response to their information requirements are the most important function of a special library. The services do not end there. The librarians alert their clientele to the existence of new information even they come to know that such information exists. Access to information from various sources, retrieval of needed information and quick dissemination to its clientele are the basic aspects involved in special library services.

Unit-9 explains the User Needs Survey. It provides an overview of User Studies, their origin, scope and development, and also various methods used to survey the user needs. It also touches on User Education.

Unit-10 describes the Planning and Organisation of Special Library Services. Special Libraries include a variety of information services, such as Information and Reference Service, Current Awareness and SDI Service, Documentation Services, and Micrographic and Reprographic services. Besides planning for information services, we have also discussed how special libraries should plan for change in IT environment.

Unit-11 deals with Searching the Online and CD-ROM Databases. It categorises the databases into three groups, namely, Source, Reference and Mixed type and describes the structure and organisation of records in a database. It also explains the method of searching the databases, such as ERIC, Chemical Abstracts, Biotechnology Abstracts and MEDLINE.

Unit-12 introduces the various Information Products useful to the users of special libraries and information centres. It also categorises the information sources/ products into documentary and non-documentary, and the documentary sources are divided into primary, secondary and tertiary sources.

UNIT - 9 : USER NEEDS SURVEY

Structure

9.0 AIMS AND OBJECTIVES

In this unit we introduce you to the user needs, user needs surveys and their methods, and various user education programmes.

After studying this unit, you should be in a position

- to discuss the importance of user surveys for efficient planning and development of library services
- to describe the various methods of conducting user surveys
- to describe the importance and methods of user education.

9.1 INTRODUCTION

From the previous chapters, we have to learnt that special library's emphasis is on disseminating information to specialist groups of Users. In order to assess the utility of the services provided, it is essential to know the information needs and requirements of the users. How exactly the user behaves while searching for some information, what type of documents

are frequently used and how the information is used when obtained, all these aspects of information use will help the special librarian (Information officers / scientists) to plan and organize the information services more efficiently. Thus, user studies, with research on users aim to further understanding of the information seeking behaviour of the users and in turn help in the improvements of information transfer systems. Other related concepts used to describe the studies are `Information needs' and `Information seeking behaviour' studies.

The information about user needs and their information seeking behavior greatly influences the services that are to be rendered in a special library. Following examples illustrate the point. Current Contents, is an example of Current Awareness Service provided, based on user behaviour studies. The most prevalent habit among the scientists is to browse through the content pages of the current issues of journals, as the first step to gather current information. Reproduction and circulation of the contents pages of current issues of journals have therefore become the most accepted form of Current Awareness Service.

9.2 USER STUDIES - ORIGIN, SCOPE AND TYPES

Having understood the importance of user studies, one should have an idea about their origin and development, scope and types of user studies.

9.2.1 Origin and Development of User Studies

The origin of user studies can be traced back to Royal Society's Conference on Scientific information in 1948 in London and the Washington Conference of 1958. A study entitled Pilot Study on the Use of Scientific Literature by Scientists conducted by Ralph R Shaw is considered another pioneer study in this direction. An attempt to understand the scientific communication system, its function and channels, a study was carried out by Glock, Menzel, Glessner and Sowers, in which 77 scientists were interviewed.

In 1959-60, Vogit made a study to determine scientists' approach to information and to relate these approaches to the purpose for which the information was sought. By 1977, large number of user surveys of different types and varying quality have been carried out. Thus, the review of user studies shows a strong interest in analysing the information needs and channels of information flow among scientists.

9.2.2 Scope of User Surveys

Although a large number of surveys were conducted world over there is no widely accepted formal methodology for library use studies. Mostly, the techniques are drawn from disciplines like sociology and psychology, statistics, operation research studies, systems analysis. As a result, the findings of such studies lack universal acceptability. However, over the years, standard methodologies have been emerged.

Based on their coverage (scope), User Studies may be grouped under four broad categories:

1) General surveys covering users in specific broad disciplines
(Eg: Sciences, Social sciences, etc.)

2) Surveys covering users in specific disciplines
(Eg: Chemistry, physics, economics etc.)

3) Surveys covering specific types of users
(Eg: Researchers, industry personnel, engineers, etc.)

4) Surveys limited to users in specific organisation.

The objectives of all such surveys are either to introduce new services or to evaluate and improve existing services both at macro-level and organisational level.

9.2.3 Types of User Studies

Professor Herbert Menzel has grouped the user studies into three main categories. They are as follows:

1) Communication Behaviour Studies: Surveys which are conducted to find out the pattern of overall interaction of user community with the communication system.

2) Use studies: Surveys conducted to find the relative use of different channels like primary, secondary periodicals, citation indexes, abstracts etc.

3) Information flow studies: Surveys conducted to find out the pattern of flow of information in the communication system.

However, a survey may consider all the three as different points of approach.

9.3 NATURE OF INFORMATION NEEDS

User studies conducted in the past revealed that the same person can interact with the information system in different ways at different times depending upon his purpose, stage of work, general interest and so on. From different types of Information requirements have been identified.

1) Current Approach: The need felt by the user to keep himself abreast of the current developments either in his specific field or in the broader fields of interest;

2) Everyday Approach: The factual information which is frequently referred by the users;

3) Exhaustive Approach: User searching for almost all relevant documents in his specific field and study.

4) Catching up Approach: This is an occasional need felt by the user in order to know the recent developments in the subject in which he is not an expert.

The findings based on such information needs will help to modify, and improve the communication information systems.

9.4 INFORMATION CONTENTS OF USER SURVEY

In order to determine the scope of document collections and kinds of services to be provided, the following types of information about the users can be useful.

a) personal information: Age, education, training and special expertise

b) Subjects of interest

c) Membership of professional bodies

d) Preference for journals

e) Types of information service preferred - CAS; SDI; Abstracts etc

f) Kinds of information media preferred - books, journals, reports, etc

g) Actual use of different types of documents

The information like frequency of library visits, time spent in gathering information, nature of the sources used greatly influence the library professionals to plan and organise their collections to suit the needs of users.

9.5 SURVEY METHODS

The first step in users survey is to planning the survey. This involves identification of the need for conducting the survey; identifying the target user community, deciding the sample making use of the various sampling techniques available and determining the technique (Questionnaire, interview etc.) to be employed in the Survey.

Survey methods used in information use studies can be broadly categorised as follows:

I Conventional Methods

a) Questionnaire

b) Interview

c) Observation - By Library staff; Self; Dairy

II Indirect Methods

a) Analysis of library records

b) Citation analysis

III Unconventional Methods

Depending upon the purpose and objectives of the study, of the above mentioned lists can be selected. For example, if the study intends to find out the subject areas of greatest interest to library users with the aim of building up collections or weeding out of little used material, indirect method like analysis of loan (circulation) records for a certain period may be selected. This kind of survey would be easier to do and more reliable than interrogation of library users.

9.5.1 Questionnaire Method

Questionnaire is the standard method with wide applicability to library surveys. Questionnaire includes a set of questions that are formulated based on the objectives of the study. The questionnaire is distributed to the users from whom the responses are sought.

The questions asked in the questionnaire may be of different. A question may seek factual information or opinion of the respondent about a particular service or situation. The designer of the questionnaire has to be careful in framing the questions. Questions should be brief, precise and avoid ambiguity. Questions should be logical and ensure continuity of thought. A small and simple questionnaire will result in high response.

Advantages:

1) *Lower cost :* Questionnaire can be mailed to get response from geographically scattered user population. The cost of mail are low compared to other methods which involve personal interaction with the users.

2) *Low bias factor:* As there is no personal interaction between the user and the investigator, the bias is reduced to minimum in case of carefully structured questionnaire.

3) *Accessibility:* The questionnaire has wider accessibility as it can be mailed to persons any where in the world.

Disadvantages:

1) It requires simple questioning

2) In questionnaire method, there is no facility to cross check the users response, no opportunity to get clarification for ambiguous answers etc.

3) The researcher has no control over who fills the questionnaire. Thus, if the right person do not answer the questionnaire, the entire survey will become a futile exercise

4) Another disadvantage of this method is the low response rate.

9.5.2 Interview Method

In the Interview method, questions are asked in person. Interview may be structured or unstructured. An interview may use a predetermined set of questions in a particular order to get information from the user. This is called Structured Interview. In the unstructured interview, there is no fixed order of questions and the interview may be more like a discussion. For the interview to be successful, the interviewer should possess considerable skill in eliciting information from the users. The interview method has greater flexibility and facilitates to obtain more detailed information from the respondents. It also has the advantage of having control over the situation and ensures high response rate. However, this method has certain limitations as it is time consuming and costly.

9.5.3 Observation Method

The Observation method can be grouped into three types: Observation by Library Staff, Observation by Self and Dairy method.

I Observation By Library Staff

Observation is the simple technique of carefully and systematically watching people by library staff and recording the observations made on them. This technique in certain instances tends to be more accurate than questionnaire method. For example, if an organization wants to find out library usage or library traffic, observation method can be used in this case may not give reliable information, as users may count the days of library use at random and may give more generalized usage frequencies.

II Observation By Self

Apart from observation by library staff self observations of users also can be employed. In order to know the areas of subject interest of the users, the librarian can ask the specialists to mark the sections while the specialist is scanning a particular document. This direction to the user will help the librarian to get reliable information regarding the areas of subject interest of the specialist, the journals that are most useful to the specialists and so on.

III Dairy Method

Other methods of non-questionnaire techniques include the dairy method. If the study involves knowing people's activities or reactions over a period of time, users may be asked to maintain a dairy.

This method overcomes the memory problem. However the method has several limitations. People are often self conscious about keeping personal records. Dropout rate is also found to be more. Users who are emotionally involved in the subject may cause personal bias in the study.

9.5.4 Indirect Methods

In addition to direct methods of user survey, there are some Indirect methods such as Analysis of Library Records, and Citation Analysis.

1) Analysis of Library Records

This is an important method employed in user studies. The records maintained in a library like circulation records, details of reference queries, inter library loan records, photocopying requisition records etc. can be systematically analysed to know the use of documents/information by the users.

2) Citation Analysis

The citation study is an useful means to assess the pattern of information use and extent of use of published sources of information. We can assess the type of literature used by different scientists through citation analysis method. Science Citation Index compiled by Eugene Garfield, which can be used to find out the citing document or the cited reference, if one knows any access point, i.e., source document or the reference cited. Thus, using citation analysis it is possible to identify the Key documents used by a scientist, Core journals in a specific subject discipline and so on. However, the accuracy of the findings of citation analysis method has been much debated.

9.5.5 Data Analysis and Interpretation

Once the data is collected using any of the above techniques, the next step involves analysis. At this stage, data will be sorted out, and presented in tabular form and percentages, averages are taken whereever necessary. From the tables, the findings are summed up.

Report is the logical expression of the findings of the study in a convenient format.

The user needs surveys are often criticised that they fail to give a complete picture of scientists' information gathering habits. Wrong selection of the technique may result in ambiguity in responses lack of in depth analysis leads to superficiality of the study. As a consequence of all the defects mentioned above, the results of the various surveys have remained largely incompatible.

Not withstanding its limitations, the user surveys provide valuable guidelines for building up library collection and organising services. The surveys also ensure the participation of users in the library activities which in turn make the collection and services responsive to the information needs of the users.

9.6 USER EDUCATION

The first two laws of library science enunciated by Dr.S.R.Ranganathan "Books are for use" and "Every book its reader" calls for awareness among the library users about the existing library resources and the services offered by the library. The books being inert cannot leap to the lap of readers by themselves. If the vast majority of books and journals are not put to proper use, lakhs of rupees spent on procuring them will become wasteful expenditure. 'User Education' is one of the important techniques adopted by the librarian to promote use of books in the library.

9.6.1 Need for User Education

User education means educating, acquainting or familiarising the library users with the various library tools, techniques and mechanical devices in the art of using library and the various services provided by the library to save the valuable time and energy of the scientists in searching for information.

For example, the search for literature consumes a lot of time of the scientists / specialist users. He can save his valuable time if he is aware of the existence of information in the library. For this purpose, he can make use of the various indexing, abstracting and bibliographical services offered by the library for his investigation or research work and contribute to the development of the subject.

The three main functions of a librarian are collection, storage and dissemination of documents and knowledge contained in them. These functions can never be discharged efficiently unless the users know, "How to find knowledge", "where to find knowledge" and "How to use the knowledge" so collected. This requires a thorough knowledge of the libraries or information centres and the services offered by them. Library users should also be aware that the large resources of other libraries and information centres can also be accessed through resource sharing.

In order to derive maximum advantage out of the services and resources of the library and information centres, it is desirable on part of the users to acquaint themselves with the techniques and devices used to obtain relevant information.

Knowledge about the classification and cataloguing systems, an understanding of the shelf arrangement followed in the library will help the specialist user to save considerable amount of time spent in searching for the documents. Services like Reference service, bibliographical and documentation services, book reservations etc. should be extensively availed by the specialist users.

User education, user orientation, user assistance, user instruction, initiation are the terms synonymously used for educating the user regarding library use. However, the orientation and initiation are meant only for new users of the library, while user education is meant for new as well as existing potential users of the library.

9.6.2 Methods of User Education

There are many methods of user education. Some of the major methods are -

1) Shelf Guiding
2) Orientation Week
3) Lecture Method
4) Library Tour
5) Audio-Visual Method
6) Printed Booklets, etc.

Depending upon the situation, one or a combination of two or more methods can be adopted.

I Users' Responsibilities

Library user must be initiated to follow certain procedures to derive maximum advantage of the library services with least possible expenditure of time and energy.

The responsibilities of the users are :

1) To attend library orientation or lectures
2) To read carefully the library guides or bulletins meant for library users
3) To familiarise oneself with the general layout of the library, its various sections and their working
4) To develop familiarity with the classification and cataloguing systems followed in the library
5) To develop acquaintance and personal rapport with the librarian and library staff
6) To learn the techniques of using various types of reference books, library tools, guides, etc.
7) To have complete knowledge of library rules and regulations and to follow them strictly while using the library.

9.7 LET US SUM UP

In the present day context of digital libraries, electronic publications, Internet and networking of libraries, the user education assumes utmost importance. The specialist users must be familiarisd with the software adopted for providing various services, information search strategies, retrieval techniques and the access to different databases and networks.

Thorough knowledge about the above mentioned criteria is essential to make efficient use of the technological innovations. Otherwise, the technology in spite of easing the procedures will become a menace for the library users.

9.8 REFERENCES AND RECOMMENDED BOOKS

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9.9 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) List out the various User Survey methods and describe briefly each one of them.
2) Explain the importance of User Education and list out the various methods of user education used in libraries.

II SHORT NOTES

a) Nature of Information Needs
b) User Responsibilities
c) Contents of User Survey

UNIT - 10 : PLANNING AND ORGANISATION OF SPECIAL LIBRARY SERVICES

Structure

10.0 AIMS AND OBJECTIVES

As times change, special libraries need change in their structure and services. This needs proper planning and organisation of special library services to suit the user needs. This unit introduces the planning and organisation of special library services.

After studying this unit, you should be in a position to

- discuss the necessity for planning various services in a special library
- explain the advantages of planning for change, that is, incorporating IT in providing special library services.

10.1 INTRODUCTION

Planning has been defined as the process of turning objectives into actions. Planning involves actions taken in the present with regard to the future. Planning sets out the strategies and stages for achieving a set of desired objectives. It provides a means of monitoring progress and contributes to the control for self evaluation on a continuing basis. Planning gives a sense of purpose and direction to an organisation. Thus, planning reduces uncertainty and increases conformity. Without proper plan, organisations will lead to fragmented development.

Planning is of great importance in times of change. When resources are constrained, then it becomes essential for the organisations to set priorities and review strategies in order to deploy those limited resources as efficiently and effectively as possible. Most of the libraries very often come across this situation. For these reasons there is a strong emphasis on planning in libraries throughout the world. British Library in formulating its Strategic Plan (1985-1990) has emphasised the importance of planning in clarifying priorities, assessing user needs and exploring the scope and importance of developing new services, to cooperate with other libraries to obtain greatest benefit from the available resources.

Thus, library plan helps to maximise the use of resources by converting the informal cooperation into more deliberately planned relationships. In the present day context of Information Technology, planning assumes greater importance. Planning for IT in libraries has to take into consideration:

1) The potential of IT
2) Impact on the library organisation
3) Impact of IT on the nature of library services
4) The cost and funding of IT based library services
5) Management of change consequent upon introduction of IT in libraries

In order to plan effectively, data regarding the existing situation of library and its services must be available. The data regarding library collection, user needs, services provided, infrastructural facilities, financial provision etc. should be available to the planner to prepare sensible plan for development. In the absence of such data, the planner has to start from the beginning.

10.2 PLANNING SPECIAL LIBRARY SERVICES

Planning of special library services involves systematic study of the specialist users of the system. The planning of services that are to be provided in a special library can be grouped into:

1) Basic Technical Operations like; identification, selection and procurement of documents or items of information; their conservation and storage;
2) Access and Making information available for use in a convenient form to the specialist users. This requires the provision of various kinds of services to users.

10.2.1 Technical Operations

Activities related to the functions of collection and preservation may be described as `technical operations'. The function of collection involves identification, selection and procurement of documents or items of information, while preservation is concerned with physical conservation, storage and weeding out of fraudulent information/documents. The purpose of these operations is to facilitate the use of information and information access through various kinds of services to the users. The effectiveness of library and information services to users therefore depends to a great extent on the efficiency of the technical operations.

1) Identification

Identification of documents with the help of various library tools like publishers catalogues, subject bibliographies, periodical directories etc, is the primary function of the librarian. The librarian should gain sufficient knowledge about the availability of documents with book sellers, publishers, agents or book shops, in order to procure them.

2) Selection

Library's success in meeting the needs of its users depends to a great extent on its ability to select from the large volume of publications/literature available, those which are most relevant to the needs of its users. In Chapter 9, it is discussed in detail how to obtain knowledge of the users needs and information seeking behaviour of users in a special library. It is noticed that most often, scientists/specialist users need information to know the status of research going on in different parts of the world; to obtain up to date information regarding developments in the subject of specialisation. This requires that scientist/specialist user requires first hand information which is available in the primary sources like periodicals, research reports, conference proceedings, scientific expeditions, patents, standards, trade literature, theses and dissertations etc. Information officer must select from these various publications apart from the secondary sources like Indexing and Abstracting periodicals, Reference books, Treatises, Monographs, Text books etc. Information Officer should exercise great skills in the selection of documents. Clear cut selection procedures and policies must be laid down for this purpose.

3) Procurement

Once the materials are selected, the next step is to acquire those materials. The most common methods of procurement are purchase and gift or exchange. Sometimes, to satisfy the requirement of users, materials may also be procured on Inter Library Loan for a limited period of time.

4) Conservation and Storage

The planning of library service must ensure that the materials acquired in the library are adequately protected against damage, theft or loss and stored under satisfactory conditions for future use. The provision of accommodation, furniture and equipment for the storage of library collections should be adequately planned. Policies and programmes for storage, retention and discarding must be clearly laid down.

10.2.2 Access and Users Services

Before users can make use of library collections, they must be acquainted with the existence and contents of the library collections. This requires provision of guides to library resources and provision of adequate arrangements for gaining access to them.

Information officer can promote the use of information and library by providing various services to its users. The services required in a special library are discussed here.

10.3 INFORMATION AND REFERENCE SERVICE

Although the basic approach to reference service and the techniques of answering reference questions are similar in all libraries, there are two distinctive features of reference service provided in special libraries.

a) The reference enquiries in special libraries are related to specific areas, ie., related to the activities of the parent organisation;

b) Enquiries may range from simple facts to complex questions involving extensive search.

However, from the results of many studies on reference work in scientific and technical libraries, several generalisations can be made:

a) 25% of the demands are simple facts and figures, which can be answered from any standard reference tools;

b) 20% of the demands are for description of an object, process, method or concept. Answers to such questions may not generally be available in reference tools, but in any relevant document on the subject;

c) The balance comprise major enquiries that involve search of the relevant literature. These include:

- assessment and integration of information;
- conversion of information to another form;
- the integration of documented information and unpublished knowledge;
- substantial assistance from outside contacts and services
- searches in interdisciplinary fields in foreign documents and comprehensive searches

Types of Reference Enquiries

Hanson grouped the types of reference queries into six categories:

a) Inquiries for simple facts and figures;
b) `Some important information about.....
c) All the information .....
d) Needle in a haystack
e) Very recent literature
f) Foreign language literature

Qualities and Qualifications of Reference Librarian

In order to provide efficient reference service, the reference librarian should have:

1) a thorough knowledge of the subject fields served by the library;
2) a collection of specialised reference tools as well as knowledge of information sources;
3) familiarity with the contents of library materials.

The answers provided in response to queries must be sufficiently documented. The answers should be provided in the form of a bibliography which is arranged in a helpful order. The user will be greatly benefited if the reference librarian can indicate the availability of relevant documents in the library.

10.4 CURRENT AWARENESS AND SDI SERVICES

Scientific research demands that the knowledge of current literature should be available to the scientists to know the developments in the subject field. Therefore, scientists adopt various methods to keep themselves abreast of the current developments. These include:

a) regular perusal of current issues of journals either received through personal subscriptions or those available in the special libraries attached to their organisations;

b) scanning the current awareness bulletins which disseminate the contents of the current literature;

c) maintaining formal and informal contacts with researchers working in similar areas both within and outside the country by exchanging reprints and working papers;

d) obtaining reprints of papers published in current journals as well as working papers from authors; and

d) attending seminars, conferences, colloquia etc. organised at institutional, national and international levels.

However, such personal efforts of scientists have their limitations for several reasons, ex: vastness of the literature; lack of access to information; lack of time etc. It is, therefore, necessary for the special libraries to adopt systematic methods to bring the contents of literature to the notice of the users . Thus, any effort made to bring current literature to the notice of the users may be termed as Current Awareness Service. It may be defined as "a system of service which ensures that all the (current) information likely to influence the progress of a research worker or a research team is made available to them in the right time and in a convenient form". While the publications like periodicals, reports, patents etc. contain current information, the information about the information contents of these various types of documents can be disseminated to the scientists in the form of current awareness bulletins. The current awareness bulletins compiled by the libraries based on the information available in their particular library are termed as 'in-house current awareness bulletins' or 'in-house documentation lists'. The library can also subscribe to the commercially available bulletins like *Current Contents, Management Contents* etc. which have very comprehensive coverage.

10.4.1 Methods of Current Awareness Service (CAS)

Although the compilation and circulation of in-house bulletins and the use of commercially published ones are the most widely accepted methods of providing current awareness service in special libraries, there are several other methods to bring to the notice of a user on the current information available in the library. Some of the most commonly used methods are discussed below.

a) Display Method

The very purpose of displaying the current issues of journals, as soon as they are received, on the specially designed display racks is to facilitate browsing by users. Most of the scientists use this facilities to keep in touch with new journal literature.

b) Individual Publications

The library staff are generally aware of the needs and interests of the users. As and when new documents are received they notify the receipts to the concerned users. The internal telephone or a formal notification slip may be used for this purpose.

c) Routing of Journals

Routing of journals to the users, for a long time, was the most accepted form of current awareness service. The library first ascertains from the users the titles of journals they would like to see regularly. On receipt of a journal, a routing slip containing the names of the concerned users is attached to it. The names are generally listed alphabetically, or the hierarchical positions may determine the order of listing. After perusal, each user passes on the journal to the next person. The last recipient sends back the journal to the library. Alternatively, the journal may be sent to the second person and the process is repeated to cover all the persons in the list.

However, the operation of the system is extremely unsatisfactory for several reasons, e.g., 1) most of the users do not promptly pass on the journals to the next person. The user may also be away from his office on leave or on tour. Therefore, when the last person receives an issue, it is no longer a `current issue'; ii) keeping track of the journals is a difficult task, and iii) the entire operation is time consuming.

d) Reproduction of Content Pages

Instead of routing the journals, photocopies of content pages may be distributed to users after ascertaining their interests.

e) Use of Commercially Published Services

The scientists' requirements of current literature is not restricted to only those documents received by their libraries. With the introduction of services like *Current Contents* or the *CA Select services* of the Chemical Abstracts, keeping abreast of the new developments has become an easy task. The relevant documents identified through these publications can be obtained either by Inter library loan procedure or directly from the authors.

10.4.2 Selective Dissemination of Information (SDI)

In the year 1959, Mr. Hans Peter Luhn of IBM has introduced for the first time the idea of Selective Dissemination of Information. When Current Awareness Service is offered to an individual user (or a team of users with similar subject interests) on specific demand, it is referred as Selective Dissemination of Information. In the earlier days, the system of SDI was operated manually. However, with the advent of computers, the entire process has become very simple and less time consuming.

Basically, the system operates as follows:

1) Each user submits a "profile" of his interests - usually a list of indexing terms taken from a standard list, along with the address of the individual user. This data is transferred to computer storage through appropriate input medium.
2) The items of information received in the library is indexed and stored in computer.
3) The computer compares the two inputs at predetermined intervals. Where sufficient terms for user profile and document profile match, such list of references are taken in print and sent to the specialist along with a response card.
4) The user retains the printed list and notes on the response card his remarks about the extent of use of the documents listed.
5) The information obtained through response card is used by the library to update the user profile to ensure more efficient service.

The effectiveness of the SDI system depends on how often an update of the `user profile' and `document profile' are maintained in the library. Evaluation of the service is another important factor that determines the effectiveness of this service.

10.5 DOCUMENTATION SERVICE

Dr. S.R.Ranganathan has defined documentation as promotion and practice of bringing into use of nascent micro-thought by a specialist pinpointed, exhaustive, expeditious service communicated through several periodical reports and articles.

Documentation is the process of collecting and subject classifying all the items of new observations and making them available to the user in a convenient form. All the activities that are targeted to bring nascent information to the specialist user form part of documentation work. The following services are covered by documentation work.

1) Bibliographies
2) Indexing services
3) Abstracting services

11.1 INTRODUCTION

Online Searching is a process of interacting with the computer systems to access information to meet the particular requests from the users and the search is usually conducted from a computer communicating with a remote computer system, on which the required database is located. The searching process is dynamic and interactive as the results are made available almost instantly. The users can accept the results or refine his/her original request for search till the searcher gets possibly the desired information by the user. Some databases are very small and specialised containing a few thousand records, while others are large and general with several millions of records. Some databases go back to two or more decades back in their coverage and while others cover only more recent information. Therefore, the searchers have to make their searching in multiple databases.

Many databases are now available on CD-ROM (Compact Disc Read Only Memory). Searching the databases on CD-ROMs have many advantages - providing database access to more number of users in a fairly stress-free environment, no external service has to be accessed and paid for it, and there is no need for establishing communication links. The users could search the online databases, if necessary, to update their information and thus, complement the CD-ROM search results.

SilverPlatter and CD Plus publish information/data in CD-ROM format exclusively. Many online hosts like DIALOG are now publish their services in both online and CD-ROM formats. Many publishers, for example, Biological Abstracts, Current Contents and Chemical Abstracts distribute their established print products using CD-ROM format. Not only bibliographic/reference databases, many journals are now available as full-text databases in electronic format and these are known as Electronic Journals.

Now-a-days, many publishers of databases have created their own web sites and they are now available on Internet. Many big Libraries and Information Centres in India and abroad are creating their own locally stored databases, which are open searching online.

11.2 DATABASES - TYPES, STRUCTURE AND ORGANISATION

There are several kinds of databases available as Online and CD-ROM databases. These databases can be grouped primarily into three types. They are

Types of Databases

Source Databases	Reference Databases	Mixed types
Full text	Referral	(more than one)
Numeric	Bibliographic	
Textual/Numeric		

Source Databases are primary sources of information. These can be divided into three categories, such as Full text, Numeric, Textual-Numeric and Software. Full Text Databases contain the complete text of a document (like primary sources of information, court cases, encyclopedias and newspaper articles). Numeric Databases are machine-readable collections of numeric data. Textual-Numeric Databases consists of records with both textual and numeric fields and these are primarily designed for giving facts or Question-Answering. These are also sometimes referred to as Directory-Type Databases.

Reference Databases contain a collection of data referring a user to another. These databases may be further grouped into Referral and Bibliographic databases based on the nature of data they contain. Bibliographic Databases contain records with clues on intellectual content and physical characteristics of the graphic material (printed). In other words, these are the surrogates of primary sources, guiding the user to a published document. Source and Referral databases together are referred to as Non-Bibliographic Databases.

There are several examples of databases. Some major databases in some subject fields are listed below:

I. BIBLIOGRAPHIC DATABASES :

1) Agriculture	:	AGRICOLA, BIOSIS PREVIEWS
2) Books and Monographs	:	BOOK REVIEW INDEX, BOOKS IN PRINT, LC MARC
3) Business and Economics	:	ABI/INFORM, MANAGEMENT CONTENTS
4) Chemistry	:	CA SEARCH
5) Current Affairs	:	MAGAZINE INDEX, PAIS, UPI NEWS
6) Education	:	ERIC, ICDE
7) Medicine/Biological Sci.	:	MEDLINE, BIOSIS PREVIEWS, EMBASE
8) Multidisciplinary Areas	:	DISSERTATION ABSTRACTS
9) Science & Technology	:	COMPENDEX, INSPEC, SCISEARCH
10) Humanities & Social Sci.	:	HISTORICAL ABSTRACTS, PSYCINFO, SOCIAL SCISEARCH, SOCIOLOGICAL ABSTRACTS

II. DIRECTORY TYPE DATABASES :

1) Census data
2) Telephone Directory

11.2.2 Database Structure and Organisation

Record structure and file organisation are essential aspects of Database design and development. Information about the entities/objects (like books, journal articles or other documents), which refers to a document surrogate, is stored in a record. A field or subfield of a record is a set of characateristics that represent the value of an attribute for the entity/object. For example, author, title, publisher, date of publication, etc. are the fields. Database producers use different fields in their record structures, depending on the nature of the database they produce. The following list shows the selected data fields and descriptions from the ERIC Resources in Education Database.

Add date : Julian date of recording when record was added to the file. Eg:73032 for 2/1/73

Change date : Binary Julian date that record was last changed

Accession Number : Sequentially assigned to records, 2 character prefix ED followed by 6 decimal digits

Clearinghouse Accession Number : Accession Number assigned by the originating clearinghouse

Publication Type : Three character codes for identifying the class of publication Eg: map, report

Publication Date : The date the publication was published or issued.

Title : The title and subtitle, if any, of the document

Personal Author : The name of the person(s) who wrote the report

Institution Code : An alphanumeric code assigned by ERIC to institution originating the publication

Sponsoring Agency Code : A code assigned by ERIC to the agency that sponsored the publication

Descritors : A term that is a member of the Thesaurus of ERIC Descriptors

Identifiers : A natural language term that describes an entity or subject dealt with by the document.

EDRS Price : Price of the paper document or microfiche copies obtained from ERIC Doc. Repr. Service

Descriptive Note : Cataloguing information augmenting the document description

Page : Number of pages in the document

Level : Code indicating availability from ERIC Document Reproduction Service (EDRS)

Issue : The Issue of the RIE in which the index record was published

Abstract : A brief narrative summary of the document

Report Number A number assigned to the document by the organisation that produced/ disseminated it

Contract Number : An alphanumeric code identifying the govt. contract supporting the publication

Grant Number : An alphanumeric code identifying the grant supporting the publication

Project Number : An alphanumeric code assigned by the sponsoring agency to the project of publication

Availability : Indicates where and in what form this publication is available, other than from EDRS.

Journal Citation : Journal name, volume number, inclusive pagination and date

Geographic Source : An alphanumeric code indicating the country of origin (incl. State and province)

Government Status : Designates official/govt. agency publications: federal/state/local, foreign

Institution Name : Name of the corporate source

Sponsoring Agency Name : Name of the sponsoring agency

d) Reproduction of Content Pages

Instead of routing the journals, photocopies of content pages may be distributed to users after ascertaining their interests.

e) Use of Commercially Published Services

The scientists' requirements of current literature is not restricted to only those documents received by their libraries. With the introduction of services like *Current Contents* or the *CA Select services* of the Chemical Abstracts, keeping abreast of the new developments has become an easy task. The relevant documents identified through these publications can be obtained either by Inter library loan procedure or directly from the authors.

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Basically, the system operates as follows:

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1) Bibliographies
2) Indexing services
3) Abstracting services

4) Translation
5) Current Awareness Service
6) Selective Dissemination of Information
7) Literature search
8) Union catalogues
9) Reprography & Micrography etc.

The CAS and SDI are discussed in the previous section. The other important documentation services like Indexing, Abstracting, Bibliographic services, Reprography and Micrography are discussed here.

10.5.1 Indexing Services

An index is a "systematic guide to the text of any reading material or to the contents of other collected documentary material, comprising series, with headings arranged alphabetical or other chosen order, and with references to show where each item indexed is located" (BSI).

The process of indexing involves scanning the documents, analysing the contents of the documents according to predetermined criteria, tagging individual items with appropriate identifiers and adding locative information to each identifier for the indication of its location in the store of information.

Thus, an index is a working tool designed to help the user to find his way about the mass of documented information in a given subject field. It provides a communication link between a source of information and the user.

Indexing Language

Indexing language is needed to represent the contents of a document precisely in order to facilitate literature search. Such Indexing Language will help in Vocabulary control, minimising the problems of synonyms, homonyms in information retrieval and for precise representation of the subject. Thesaurus, Subject Heading lists, Classification Schemes are some examples of vocabulary control devices or Indexing languages.

Broadly, ndexing Languages can be classified as Natural Language Indexing and Assigned/Derived Indexing systems. Any Information Retrieval system without vocabulary control is referred to as " Natural-language" or "Free text" indexing system.

In Assigned/Derived Indexing, the indexer assigns terms or descriptors on the basis of subjective interpretation of the concepts implied in the document.

Types of Indexes

There are several types of indexes. Some of them are:

1) Alphabetic Subject Index
2) Classified Index
3) Coordinate Indexes- Pre coordinate and Post coordinate
4) PRECIS and NEPHIS
5) Citation Indexes
6) Computer aided indexes

Citation Indexes (eg. : *Science Citation Index*) and the computer aided indexes like KWIC are found to be mostly used in the information retrieval of scientific and technical literature.

Whatever be the technique of indexing followed, no scientific or special library can do effectively without proper indexing system.

10.5.2 Abstracting Services

Abstracts are important retrieval media and current awareness tools. Due to information explosion in almost all fields of intellectual activities, the scientist or researcher who is busy with investigation in his specialised subject may not find time to go through all the information that is being produced in the subject. Therefore, it becomes essential to provide the relevant information to the specialist user in condensed form. Abstracting services play an important role in keeping the user well informed.

An abstract is a summary or the abridgement of the important part of a publication or article accompanied by an adequate bibliographical description to enable the publication or article to be traced. According to Maizell and others, "an abstract simply defined, is a condensation that presents succinctly, the objectives, scope and findings of a document. This information is usually conveyed together with an indexing system, which further helps to identify document content. An abstract as a rule, is aimed at a specific group of users who either may not have easy access to the original document". However, in simple words, an abstract is a summary of a document. Adequate bibliographic details are provided so that one can trace the document. The concerned document may be a book, an article from a periodical or some other form of recorded knowledge.

Types of Abstracts

There are two major kinds of abstracts namely, indicative abstracts and informative abstracts.

1) *Indicative Abstract* : An indicative abstract is an outline of the original document. It summarizes the contents, indicates the scope and content of the documents. It enables the readers to decide whether or not the original document is useful for further study. This type of abstract cannot serve as a substitute for the original document.

2) *Informative Abstract* : An informative abstract usually contains scope, purpose, methods used, kind of treatment, results or findings, conclusions or interpretation of the results obtained by the author. Informative abstracts are more useful to the scientific community. The length of informative abstract usually varies from 50 to 150 words.

Besides these two traditional abstracts, some other types of abstracts can be identified.

3) *Critical Abstract*: Apart from describing the content of the document, it also evaluates the work and its presentation.

4) *Pseudo Abstract*: It is described as an abstract of a paper that has not been, and may never be written. It originates from the practice of inviting speakers before professional associations to submit abstracts of their papers for publication prior to delivery of their papers.

5) *Slant Abstract*: Documents are often found to contain information of multidisciplinary character. In such cases, where the contents of the same document have to be disseminated to serve the interests of scientists and technologists belonging to different disciplines one or the same abstract cannot do the job. It has to be slanted by changing the focus oriented to specific needs of the discipline. Emphasis on methodology and equipment are more important in a slanted abstract.

6) *Telegraphic Abstract*: It is a detailed index to a graphic index.

7) *Auto-Abstract*: Sentences from the document are selected for inclusion in the abstract on the basis of the number of keywords they contain. Computer is used to identify the high frequency words occurring in the document.

The special librarian can select any of the suitable types to serve the specialist readers. The special librarian should have specialised skills in selecting the documents for abstracting, preparing the abstracts and providing the services.

10.6 MICROGRAPHY AND REPROGRAPHY

Micrography and Reprography have become an indispensable part of information storage and retrieval systems.

Reprography

Reprography is concerned with the methods of duplication of original matter. It signifies all the various activities and techniques associated with the facsimile reproduction of documents. Microfilm, micro-print, photostat, reflex copy, xerography, thermofax, diazo, offset and all other varieties of processes used for making copies of documents constitute `Reprography'.

Copies of any document can be reproduced rapidly and economically through reprographic method. In the present day of information explosion, it becomes impossible for any individual or institution to obtain all the information that is published in original. Reprographic methods are widely used in preparing copies of published or unpublished material, rare documents, manuscripts, pages of periodicals, books, newspapers, graphic materials, etc. and to conserve storage space through miniaturisation of documents.

Reprographic systems can be grouped into two categories: 1) Photographic copying processes, and 2) Micro-recording process.

Photographic copying involves two processes - Wet processing and Dry processing. Wet Processing includes techniques like - i) Photostat, ii) Reflex copying, iii) Direct Positive copying, and iv) Heliographic Dyeline methods or Diazo printing. Dry Processing involves - i) Xerography, ii) Copyflo, iii) Thermofax, and iv) Copycat Diazotherm.

Micro-Recording process consists of i) Microfilm/fiche, ii) Microcard, and iii) Filmstrip.

Of all the reprographic techniques, xerography has revolutionised the method of documentary reproduction.

Microforms

Microforms are miniaturised formats for information. Microforms include microfilm, microcards, microfiche, aperture cards, microprint, and computer output microfilm (COM). Microforms, except for COM, are created by photographing pages of paper, reducing them and printing them onto a nylon base. Microforms can be either positive or negative images. Each has a range of applications designed to fulfil specific user requirements and it is important to select the form to match the need.

Microfilm designates a size of microform on a continuous roll of either 8, 16, or 35 mm. Microfilm rolls are available in a variety of container formats such as reel, cartridge, cassette and jacket.

Microfiche is available in a standardised size of 4"x6" transparent film containing several rows of single microfilm frames. One microfiche can contain over 100 pages of 8"x11" sheets of paper.

d) Reproduction of Content Pages

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e) Use of Commercially Published Services

The scientists' requirements of current literature is not restricted to only those documents received by their libraries. With the introduction of services like *Current Contents* or the *CA Select services* of the Chemical Abstracts, keeping abreast of the new developments has become an easy task. The relevant documents identified through these publications can be obtained either by Inter library loan procedure or directly from the authors.

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1) Each user submits a "profile" of his interests - usually a list of indexing terms taken from a standard list, along with the address of the individual user. This data is transferred to computer storage through appropriate input medium.
2) The items of information received in the library is indexed and stored in computer.
3) The computer compares the two inputs at predetermined intervals. Where sufficient terms for user profile and document profile match, such list of references are taken in print and sent to the specialist along with a response card.
4) The user retains the printed list and notes on the response card his remarks about the extent of use of the documents listed.
5) The information obtained through response card is used by the library to update the user profile to ensure more efficient service.

The effectiveness of the SDI system depends on how often an update of the `user profile' and `document profile' are maintained in the library. Evaluation of the service is another important factor that determines the effectiveness of this service.

10.5 DOCUMENTATION SERVICE

Dr. S.R.Ranganathan has defined documentation as promotion and practice of bringing into use of nascent micro-thought by a specialist pinpointed, exhaustive, expeditious service communicated through several periodical reports and articles.

Documentation is the process of collecting and subject classifying all the items of new observations and making them available to the user in a convenient form. All the activities that are targeted to bring nascent information to the specialist user form part of documentation work. The following services are covered by documentation work.

1) Bibliographies
2) Indexing services
3) Abstracting services

4) Translation
5) Current Awareness Service
6) Selective Dissemination of Information
7) Literature search
8) Union catalogues
9) Reprography & Micrography etc.

The CAS and SDI are discussed in the previous section. The other important documentation services like Indexing, Abstracting, Bibliographic services, Reprography and Micrography are discussed here.

10.5.1 Indexing Services

An index is a "systematic guide to the text of any reading material or to the contents of other collected documentary material, comprising series, with headings arranged alphabetical or other chosen order, and with references to show where each item indexed is located" (BSI).

The process of indexing involves scanning the documents, analysing the contents of the documents according to predetermined criteria, tagging individual items with appropriate identifiers and adding locative information to each identifier for the indication of its location in the store of information.

Thus, an index is a working tool designed to help the user to find his way about the mass of documented information in a given subject field. It provides a communication link between a source of information and the user.

Indexing Language

Indexing language is needed to represent the contents of a document precisely in order to facilitate literature search. Such Indexing Language will help in Vocabulary control, minimising the problems of synonyms, homonyms in information retrieval and for precise representation of the subject. Thesaurus, Subject Heading lists, Classification Schemes are some examples of vocabulary control devices or Indexing languages.

Broadly, ndexing Languages can be classified as Natural Language Indexing and Assigned/Derived Indexing systems. Any Information Retrieval system without vocabulary control is referred to as " Natural-language" or "Free text" indexing system.

In Assigned/Derived Indexing, the indexer assigns terms or descriptors on the basis of subjective interpretation of the concepts implied in the document.

Types of Indexes

There are several types of indexes. Some of them are:

1) Alphabetic Subject Index
2) Classified Index
3) Coordinate Indexes- Pre coordinate and Post coordinate
4) PRECIS and NEPHIS
5) Citation Indexes
6) Computer aided indexes

Citation Indexes (eg. : *Science Citation Index*) and the computer aided indexes like KWIC are found to be mostly used in the information retrieval of scientific and technical literature.

Whatever be the technique of indexing followed, no scientific or special library can do effectively without proper indexing system.

10.5.2 Abstracting Services

Abstracts are important retrieval media and current awareness tools. Due to information explosion in almost all fields of intellectual activities, the scientist or researcher who is busy with investigation in his specialised subject may not find time to go through all the information that is being produced in the subject. Therefore, it becomes essential to provide the relevant information to the specialist user in condensed form. Abstracting services play an important role in keeping the user well informed.

An abstract is a summary or the abridgement of the important part of a publication or article accompanied by an adequate bibliographical description to enable the publication or article to be traced. According to Maizell and others, "an abstract simply defined, is a condensation that presents succinctly, the objectives, scope and findings of a document. This information is usually conveyed together with an indexing system, which further helps to identify document content. An abstract as a rule, is aimed at a specific group of users who either may not have easy access to the original document". However, in simple words, an abstract is a summary of a document. Adequate bibliographic details are provided so that one can trace the document. The concerned document may be a book, an article from a periodical or some other form of recorded knowledge.

Types of Abstracts

There are two major kinds of abstracts namely, indicative abstracts and informative abstracts.

1) *Indicative Abstract* : An indicative abstract is an outline of the original document. It summarizes the contents, indicates the scope and content of the documents. It enables the readers to decide whether or not the original document is useful for further study. This type of abstract cannot serve as a substitute for the original document.

2) *Informative Abstract* : An informative abstract usually contains scope, purpose, methods used, kind of treatment, results or findings, conclusions or interpretation of the results obtained by the author. Informative abstracts are more useful to the scientific community. The length of informative abstract usually varies from 50 to 150 words.

Besides these two traditional abstracts, some other types of abstracts can be identified.

3) *Critical Abstract*: Apart from describing the content of the document, it also evaluates the work and its presentation.

4) *Pseudo Abstract*: It is described as an abstract of a paper that has not been, and may never be written. It originates from the practice of inviting speakers before professional associations to submit abstracts of their papers for publication prior to delivery of their papers.

5) *Slant Abstract*: Documents are often found to contain information of multidisciplinary character. In such cases, where the contents of the same document have to be disseminated to serve the interests of scientists and technologists belonging to different disciplines one or the same abstract cannot do the job. It has to be slanted by changing the focus oriented to specific needs of the discipline. Emphasis on methodology and equipment are more important in a slanted abstract.

6) *Telegraphic Abstract*: It is a detailed index to a graphic index.

7) *Auto-Abstract*: Sentences from the document are selected for inclusion in the abstract on the basis of the number of keywords they contain. Computer is used to identify the high frequency words occurring in the document.

The special librarian can select any of the suitable types to serve the specialist readers. The special librarian should have specialised skills in selecting the documents for abstracting, preparing the abstracts and providing the services.

10.6 MICROGRAPHY AND REPROGRAPHY

Micrography and Reprography have become an indispensable part of information storage and retrieval systems.

Reprography

Reprography is concerned with the methods of duplication of original matter. It signifies all the various activities and techniques associated with the facsimile reproduction of documents. Microfilm, micro-print, photostat, reflex copy, xerography, thermofax, diazo, offset and all other varieties of processes used for making copies of documents constitute `Reprography'.

Copies of any document can be reproduced rapidly and economically through reprographic method. In the present day of information explosion, it becomes impossible for any individual or institution to obtain all the information that is published in original. Reprographic methods are widely used in preparing copies of published or unpublished material, rare documents, manuscripts, pages of periodicals, books, newspapers, graphic materials, etc. and to conserve storage space through miniaturisation of documents.

Reprographic systems can be grouped into two categories: 1) Photographic copying processes, and 2) Micro-recording process.

Photographic copying involves two processes - Wet processing and Dry processing. Wet Processing includes techniques like - i) Photostat, ii) Reflex copying, iii) Direct Positive copying, and iv) Heliographic Dyeline methods or Diazo printing. Dry Processing involves - i) Xerography, ii) Copyflo, iii) Thermofax, and iv) Copycat Diazotherm.

Micro-Recording process consists of i) Microfilm/fiche, ii) Microcard, and iii) Filmstrip.

Of all the reprographic techniques, xerography has revolutionised the method of documentary reproduction.

Microforms

Microforms are miniaturised formats for information. Microforms include microfilm, microcards, microfiche, aperture cards, microprint, and computer output microfilm (COM). Microforms, except for COM, are created by photographing pages of paper, reducing them and printing them onto a nylon base. Microforms can be either positive or negative images. Each has a range of applications designed to fulfil specific user requirements and it is important to select the form to match the need.

Microfilm designates a size of microform on a continuous roll of either 8, 16, or 35 mm. Microfilm rolls are available in a variety of container formats such as reel, cartridge, cassette and jacket.

Microfiche is available in a standardised size of 4"x6" transparent film containing several rows of single microfilm frames. One microfiche can contain over 100 pages of 8"x11" sheets of paper.

Microcard is a term referring to a 3"x5" sheet of transparent film or its positive.

Micro-Opaque refers to the positive image of micro-miniaturisation. The image is viewed as any "hard copy" of paper with black lines on a white background.

Micrographic Equipment

The following tools and materials must be present in the special libraries and information centre for providing a successful micrographic service.

a) It must have few Microfiche-cum-Microfilm Readers
b) Microfiche-cum-Microfilm Reader-Printer
c) Microfilm/fiche filming equipment
d) Ultrafiche Reader
e) Sufficient stock of microfichs and microfilms.

Micro Publishers

Bell and Howell (UK), Oxford Microform Systems (London), World Microfilms Publishers Limited (London), University of Microfilms International (USA), University of Chicago Press are some of the prominent publishers of microforms.

10.7 PLANNING FOR CHANGE IN *IT* ENVIRONMENT

Integration of information technology is of crucial consideration for providing special library services. Computerisation in special library can aid in the provision of current awareness services and selective dissemination of information services. Information technology widens the specialist's access to information. Rather than relying on the library's own holdings, technology provides an opportunity to access information available at remote sites through online and networking facilities. Thus, the application of IT enables the special library and information centres to disseminate information in various methods and assigns added value to its services.

Planning of IT in libraries has to take into consideration the following points:

1) The potential of IT
2) Impact on the library organisation
3) Impact of IT on the nature of library services
4) Cost and funding of IT based library services, and
5) Management of change consequent upon introduction of IT in libraries.

10.8 LET US SUM UP

Technology has the potential to affect fundamental change on the organisational structure of a library. IT can place a special library in a 'web' of electronic connections with other libraries, information sources and services, suppliers, other specialist customers and agencies providing information.

10.9 REFERENCES AND RECOMMENDED BOOKS

BOB, McKee. *Planning library service*. London: Clive Bingley, 1983.

GUHA, B.(ed). *Library and information science horizon*. New Delhi: Allied, 1988.

PARKER, Stephen J. (ed). *Aspects of library development planning*. London: Mansell Publi., 1983.

RIAZ MUHAMMAD. *Modern techniques of documentation and information work*. New Delhi: Atlntic Publi., 1989.

10.10 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Explain the various elements of planning special library services.

2) Write an essay on organisation of Current Awareness Services and Selective Dissemination of Information in special libraries.

3) Discuss the role of Indexing and Abstracting services in Special libraries.

II SHORT NOTES

a) Routing of Journals

b) Micrography

UNIT - 11 : SEARCHING THE ONLINE AND CD-ROM DATABASES

Structure

11.0 AIMS AND OBJECTIVES

In Block-III of Course-03: Information Processing and Retrieval, we have learnt about Database Access, Searching and Retrieval of Information. The present unit describes the database searching with specific examples.

After studying the unit, we should be in a position to

- explain the method of searching online and CD-ROM databases
- describe how to search databases, such as ERIC, Chemical Abstracts, Biotechnology Abstracts, Medline, etc.

11.1 INTRODUCTION

Online Searching is a process of interacting with the computer systems to access information to meet the particular requests from the users and the search is usually conducted from a computer communicating with a remote computer system, on which the required database is located. The searching process is dynamic and interactive as the results are made available almost instantly. The users can accept the results or refine his/her original request for search till the searcher gets possibly the desired information by the user. Some databases are very small and specialised containing a few thousand records, while others are large and general with several millions of records. Some databases go back to two or more decades back in their coverage and while others cover only more recent information. Therefore, the searchers have to make their searching in multiple databases.

Many databases are now available on CD-ROM (Compact Disc Read Only Memory). Searching the databases on CD-ROMs have many advantages - providing database access to more number of users in a fairly stress-free environment, no external service has to be accessed and paid for it, and there is no need for establishing communication links. The users could search the online databases, if necessary, to update their information and thus, complement the CD-ROM search results.

SilverPlatter and CD Plus publish information/data in CD-ROM format exclusively. Many online hosts like DIALOG are now publish their services in both online and CD-ROM formats. Many publishers, for example, Biological Abstracts, Current Contents and Chemical Abstracts distribute their established print products using CD-ROM format. Not only bibliographic/reference databases, many journals are now available as full-text databases in electronic format and these are known as Electronic Journals.

Now-a-days, many publishers of databases have created their own web sites and they are now available on Internet. Many big Libraries and Information Centres in India and abroad are creating their own locally stored databases, which are open searching online.

11.2 DATABASES - TYPES, STRUCTURE AND ORGANISATION

There are several kinds of databases available as Online and CD-ROM databases. These databases can be grouped primarily into three types. They are

Types of Databases

Source Databases	Reference Databases	Mixed types
Full text	Referral	(more than one)
Numeric	Bibliographic	
Textual/Numeric		

Source Databases are primary sources of information. These can be divided into three categories, such as Full text, Numeric, Textual-Numeric and Software. Full Text Databases contain the complete text of a document (like primary sources of information, court cases, encyclopedias and newspaper articles). Numeric Databases are machine-readable collections of numeric data. Textual-Numeric Databases consists of records with both textual and numeric fields and these are primarily designed for giving facts or Question-Answering. These are also sometimes referred to as Directory-Type Databases.

Reference Databases contain a collection of data referring a user to another. These databases may be further grouped into Referral and Bibliographic databases based on the nature of data they contain. Bibliographic Databases contain records with clues on intellectual content and physical characteristics of the graphic material (printed). In other words, these are the surrogates of primary sources, guiding the user to a published document. Source and Referral databases together are referred to as Non-Bibliographic Databases.

There are several examples of databases. Some major databases in some subject fields are listed below:

I. BIBLIOGRAPHIC DATABASES :

1) Agriculture	:	AGRICOLA, BIOSIS PREVIEWS
2) Books and Monographs	:	BOOK REVIEW INDEX, BOOKS IN PRINT, LC MARC
3) Business and Economics	:	ABI/INFORM, MANAGEMENT CONTENTS
4) Chemistry	:	CA SEARCH
5) Current Affairs	:	MAGAZINE INDEX, PAIS, UPI NEWS
6) Education	:	ERIC, ICDE
7) Medicine/Biological Sci.	:	MEDLINE, BIOSIS PREVIEWS, EMBASE
8) Multidisciplinary Areas	:	DISSERTATION ABSTRACTS
9) Science & Technology	:	COMPENDEX, INSPEC, SCISEARCH
10) Humanities & Social Sci.	:	HISTORICAL ABSTRACTS, PSYCINFO, SOCIAL SCISEARCH, SOCIOLOGICAL ABSTRACTS

II. DIRECTORY TYPE DATABASES :

1) Census data
2) Telephone Directory

11.2.2 Database Structure and Organisation

Record structure and file organisation are essential aspects of Database design and development. Information about the entities/objects (like books, journal articles or other documents), which refers to a document surrogate, is stored in a record. A field or subfield of a record is a set of characateristics that represent the value of an attribute for the entity/object. For example, author, title, publisher, date of publication, etc. are the fields. Database producers use different fields in their record structures, depending on the nature of the database they produce. The following list shows the selected data fields and descriptions from the ERIC Resources in Education Database.

Add date : Julian date of recording when record was added to the file. Eg:73032 for 2/1/73

Change date : Binary Julian date that record was last changed

Accession Number : Sequentially assigned to records, 2 character prefix ED followed by 6 decimal digits

Clearinghouse Accession Number : Accession Number assigned by the originating clearinghouse

Publication Type : Three character codes for identifying the class of publication Eg: map, report

Publication Date : The date the publication was published or issued.

Title : The title and subtitle, if any, of the document

Personal Author : The name of the person(s) who wrote the report

Institution Code : An alphanumeric code assigned by ERIC to institution originating the publication

Sponsoring Agency Code : A code assigned by ERIC to the agency that sponsored the publication

Descritors : A term that is a member of the Thesaurus of ERIC Descriptors

Identifiers : A natural language term that describes an entity or subject dealt with by the document.

EDRS Price : Price of the paper document or microfiche copies obtained from ERIC Doc. Repr. Service

Descriptive Note : Cataloguing information augmenting the document description

Page : Number of pages in the document

Level : Code indicating availability from ERIC Document Reproduction Service (EDRS)

Issue : The Issue of the RIE in which the index record was published

Abstract : A brief narrative summary of the document

Report Number A number assigned to the document by the organisation that produced/ disseminated it

Contract Number : An alphanumeric code identifying the govt. contract supporting the publication

Grant Number : An alphanumeric code identifying the grant supporting the publication

Project Number : An alphanumeric code assigned by the sponsoring agency to the project of publication

Availability : Indicates where and in what form this publication is available, other than from EDRS.

Journal Citation : Journal name, volume number, inclusive pagination and date

Geographic Source : An alphanumeric code indicating the country of origin (incl. State and province)

Government Status : Designates official/govt. agency publications: federal/state/local, foreign

Institution Name : Name of the corporate source

Sponsoring Agency Name : Name of the sponsoring agency

A Portion of an ERIC Record is shown below:

Meadow, Charles T. "Adventures in the Silicon Trade." Bulletin of the American Society for Information Science 8 (4) (1981) 15-17

Abstract : Recounts some of the problems encountered in the use of an Osborne microcomputer. For personal purposes by a computing veteran, describes some of the shortcomings of the sales. System for microcomputers as it presently exists, and makes some conjectures concerning the impact of those shortcomings on the personal computer industry.

Descriptors: Computer Programs; *Electronics Industry; *Guides; Merchandise Information; * Microcomputers; Problems; Programming; Purchasing

Identifiers : Customer Services; *Osborne I

Source : ERIC Data Base Master Files. (IN HARTER, Stephen P. Online Information Retrieval: Concepts, Principles and Techniques. Orlando: Academic Press, 1986. P.68-70

11.2.3 Search Software

Online information service providers and the producers/suppliers of the CD-ROMs provide the search software to their subscribers. Search Software is a programme or a set of programmes, which processes a search request, carries out a search on the stored data database and reports on information found. Much of the software used for online searching is that of the Free Text Retrieval (FTX) type. (Eg: Quest, Quest Plus, Dialog).

The Search Software searches the terms from, say the title or abstract in the bibliographic records. The search is also carried out in the Index files of the database. The retrieval items may be a complete record as a whole or part of it. The items may be displayed on the monitor screen, downloaded into the system hard disc/floppy and/or printed

Databases, however, use different search software and various levels of searching. Let us examine Searching methods of some of the major bibliographic databases, such as ERIC, Biotechnology, Chemical Abstracts and MEDLINE.

11.3 SEARCHING ERIC DATABASE

The ERIC CD-ROM database was published by National Information Services Corporation (NISC) 3100 St. Paul Street, Baltimore, Maryland 21218 USA. ERIC database is also available online at the website: www.nisc.com

The database contains Resources in Education (RIE), Current Index to Journals in Education (CIJE), ERIC Digests, and The Thesaurus of ERIC descriptors, which are licensed from the U.S. Department of Education, Educational Resources Information Center (ERIC).

The NISC owns the property of ROMWright software, database format, indexes, and arrangement of data in the ERIC database. ERIC database may be searched through three modes. They are I) Novice Search Mode, ii) Advanced Search Mode, and iii) Expert Search Mode.

11.3.1 Novice Search Mode

The Novice mode features the most commonly used indexes and fields for searching and emphasizes a Subject index for easy retrieval. It is based on the most significant descriptive and textual elements (i.e., fields) of the records. Novice's Search Mode is for the beginners who are not fully familiar with the database searching. It has a straight forward search screen for the

users. Subject field Search scans the most commonly queried fields, e.g., Title, Abstract, and Key Terms, simultaneously. Author Search scans both personal and institutional author names at once.

Searching is simply a matter of typing terms or phrases to search and clicking on the `Search Icon' or pressing `Enter' button. Records are displayed in the lower half of the screen in the Short Record display mode, by default. Words or phrases within the may be connected with search operators to exclude unwanted records as well as retrieve intended, meaningful records.

The Search operators in ERIC database include: Boolean (AND, OR and NOT), truncation , range, and proximity. Parentheses may also be used to group and order the processing of search terms.

Sample Search:

1) The phrase "Learning Activities" in the Title, Abstract or Key Term fields.

2) The Author "Jenkins*" retrieves records with that name (eg: Jenkins, Alan or Jenkinski, Mary)

3) Records with a Publication Year "1993-1997" (inclusive)

ERIC Database providers recommend some Search Tips for the Novice. They are

- The Subject field in the Novice mode searches the Title, Abstract, and Key Term fields, returning the largest possible match count.
- Use the AutoDex for each field. The AutoDex is simply a list of database terms that have significant retrieval value. Terms can be inserted into search fields directly from the AutoDex, simply double-click on the term, click the Insert icon, or press wer Insert key.
- If we get zero matches, read Improving Wer Search Strategy for an explanation and tips on how to create a successful search.

To clear the Searches, Click to Clear all search fields and erase wer entire search strategy Before clearing, Save the search using the Save icon.

11.3.2 Advanced Search Mode

The Advanced mode provides more versatility and focus than the Novice mode. In order to switch to search modes, one should first select `Searching' from the Main Menu, and then click on `Advanced search'.

The Advanced mode includes every search field in the database. We can search fields concurrently, in any combination, or individually. Usually the more search fields are used to narrow down the search and the fewer the search results are produced. The records retrieved meet all the search criteria specified. In order to broaden the search, the Boolean operator OR can be used to connect the fields.

In the Advanced search mode, the first six fields are displayed by default. To see the rest of the fields, we can use the Resize Buttons (on the Resize Bar & Buttons) to display all available search fields.

Searching is a simple matter of typing terms and clicking on the Search icon or pressing Enter. Records are displayed in the lower half of the screen in the Short Record display mode, by default. To begin, type wer search in the space directly next to any field name. Connect words or phrases with search operators to exclude unwanted records as well as retrieve intended, meaningful records. Search operators include: Boolean , truncation, range, and

proximity . Use parentheses to group and order the processing of search terms according to wer needs. If we search more than one field at a time, we must establish the Boolean relationships between fields.

Sample Advanced Mode Search in ERIC

(Title OR Key Terms) AND Language AND Publication Year

(Title= elementary mathematics OR (Key Terms= mathematical concepts or mathematics curriculum)) AND Language= English AND Pub. Year= 1990-1996

This search will retrieve records that include:

1. (Records with Key Terms of either mathematical concepts or mathematics curriculum) OR records with elementary mathematics in the Title
2. And records in the Language of English
3. And records with a Publication Year between 1990 and 1996 (inclusive).

Advanced Search Tips:

- The Subject field in the Advanced mode searches the Title, Abstract, and Key Term fields, returning the largest possible match count. Use fields such as Key Terms. Language, or Journal Title to limit the scope of wer search.
- Use the AutoDex for each field. The AutoDex is simply a list of database terms that have significant retrieval value. Terms can be inserted into search fields directly from the AutoDex, simply double-click on the term, click on the Insert icon, or press wer Insert key.
- If we get zero matches, read Improving Wer Search Strategy for an explanation and tips on how to create a successful search.

1.3.3 Expert Search Mode

Several Special Techniques and Syntax are involved in Expert Search Mode.

1. Boolean set searching: Narrow or broaden a search simply by typing AND, OR, or NOT on a new search line along with a search term.
2. Grouped search terms: Parentheses are essential for good Expert Mode Searching. Parentheses need to be used always to group terms and operations in relation to the search fields specified. If a search field is not specified, the Subject Index is searched by default. If we forget the parentheses, only the term immediately following the field tag is searched in the specified field; the remaining term(s) are searched in the general Subject search instead.

   Wrong: kt = family OR health - "Health" is not searched as a Key Term but rather as a general Subject search.

   Right: kt = (family OR health) Both "family" and "health" are searched as Key Terms.
3. Nesting: kt = ((family OR health) AND (planning OR services)) If we group several operations within parentheses, surround everything in the search field with other parentheses: i.e., "nest" parentheses within parentheses when necessary. (Note: When we transfer a search to Expert from Novice or Advanced mode, parentheses are supplied automatically for each search field -- all text in the field is surrounded, even if it is just one word).

4. Unary NOT syntax: py = NOT 1989; NOT py=1989; NOT (py=1989); NOT #1; py = NOT #1; py = (NOT #1). All are valid unary NOT statements. We can also search multiple fields with unary NOT, e.g. py=#1 AND la = NOT French; NOT py=#1 AND la = NOT French

5. Range-operator syntax: py=<>1989; py=>=1992, etc. Search field tags must still be followed by "=" even if a range operator is next. The field tag's "=" is never part of any search operator; it must follow the search-field tag in every instance.

Search Restrictions

1. Disallowed: Specifying a search-field tag with a Set# or Ref# for which a different tag has already been specified. We cannot specify one search-field tag, and then reuse the Set# or Ref# with a different index. Why not? Search fields are indexes. If we are referring to a previous search [item], the Set#/Ref# refers to both the search [item] and its index. Since the Set#/Ref# refers to the index already, it would be either redundant to re-specify it, or ambiguous to change indexes this way. Note: We can specify any search-field tag with a Set# or Ref# which refers to a default Subject search [item], i.e., a search [item] with no field tag.

2. Disallowed: Using a Set# in a phrase/proximity search or phrase/proximity searching by a Ref# which itself stands for phrase/proximity [in a previous search].

Example: Set #1: hot water #1A=HOT, #1B=WATER, #1C=#1A #1B

In our next search, suppose we wish to add the word "bottle," in order to search the phrase "hot water bottle." We can search (a) the Ref#s plus "bottle", (b) the whole phrase spelled out, or (c) with the Boolean AND:

Set #2: #1a #1b bottle OR hot water bottle OR #1c AND bottle (all are valid searches)

11.4 SEARCHING CHEMICAL ABSTRACTS DATABASE

The Chemical Abstracts (CA) database includes a broad spectrum of technical and scientific information including Biochemistry, Physical, Inorganic, and Analytical Chemistry, Applied Chemistry and Chemical Engineering, Macromolecular Chemistry, and Organic Chemistry. These original references are made available in 50 languages, while all are available in English in the CA database. References may be in the form of journals, patents, technical reports, disserta-tions, conference proceedings, and books. CA selects nearly 650,000 documents and 123,000 patents for abstracting each year.

CA on CD is updated monthly and includes indexing information as it becomes available. Each monthly update contains all of the information for the calendar year-to-date.

11.4.1 CA on CD and CA Collective Indexes

The CA on CD and CI on CD can be used for the following purposes:

Access Scientific Information
Choose a Database
Use Word Search
Search Results List
Use Index Browse
Use Substance Hierarchy

Use Formula Hierarchy

Display Information

Save Documents

Copy to the Clipboard

Print Documents

Order Documents

Save Search Strategies

Use Bookmarks

The Retrieved records from CA consisting of the following items:

Bibliographic data

CA abstracts (including abstract drawing) - included in CA on CD and CI on CD with Abstracts

CA Volume Index entries

Chemical Substance Index entries

General Subject Index entries

Patent information

Chemical Substances

CAS Registry Numbers

CA index name(s)

Molecular Formulas

Browsable search indexes which include:

INDEX	AVAILABILITY	CA on CD
CA Collective Indexes on CD WORD (default)	yes	yes
LANGUAGE	yes	no
UPDATE	yes	no
AUTHOR	yes	yes
YEAR	yes	no
CAS RN	yes	yes
ORGANIZATION	yes	no
PATENT NUMBER	yes	yes
COMPOUND	yes	yes
GENERAL SUBJECT	yes	yes
DOCUMENT TYPE	yes	no
FORMULA	yes	yes
JOURNAL	yes	no
CA SECTION	yes	no
CAN	yes	yes

11.4.2 Simple Searching

CA on CD allows the users to do Simple searching for one to twenty alternative terms in the same search index. Boolean searching using multiple terms from one or more search index. Browsing mechanism presenting an hierarchical organization of chemical substance names. The organization brings related com-pounds together. Browsing mechanism presenting an hierarchical organization of molecular formulas and their chemical substance names, just as in the chemical substance hierarchy.

Marking selected answers for printing, saving, or DDS (Document Detective Service) order form production. Printing search results in one of three predefined print formats. Saving answer text to disk in one of four predefined formats. Copying selected text to other applications via the Windows clipboard.

CA on CD has the following advantages:

Saving search queries for later use.

Using bookmarks for later reference.

A mechanism to select from a list of installed databases.

Sharing of saved queries between CA on CD Annual Databases and CA

Collective Indexes on CD.

Search Help

CA on CD and CI on CD provides the Search Help in using Word Search, Multiple Words, and Term Relationships.

Use Word Search: To search for a word or a combination of words in any searchable field, enter words in upper or lower case and as a single word or a phrase, e.g., acid, Nitrogen Oxide. Enter numeric values for publication dates, CAS Registry Numbers, and molecular formulas. Access Word Search, by selecting Word Search from the Search menu, or by clicking the Search icon.

CA on CD Search Indexes :

Word	-	Contains single words from document titles, abstracts, keyword phrases, organization location, General Subject Headings, and index modification phrases.
Author	-	Author and inventor names
Organization	-	Organizations, corporate sources, patent assign-ees, and corporate authors
Gen. Subj.	-	General Subject Index headings
Journal	-	Abbreviated journal titles
Language	-	Language of the source document
Year	-	Source document publication year
Patent No.	-	Patent country code and patent number (includes patent application number) from both patent document records and patent families
Doc. Type	-	Type of document

CA Section	-	CA section number and title as a bound phrase. CA section and section cross-reference numbers
Update	-	Bound phrases of the form YYYY-UU (such as 1996-02 or 1996-12) and VVV-II (such as 120-04). The YYYY-UU entries corre-spond to the CA on CD year and update number. The VVV-II corre-spond to CA volume and issue numbers.
CAS RN	-	CAS Registry Numbers
Compound	-	Compounds or chemical names
Formula	-	Substance molecular formulas
CAN	-	CA Abstract Number

CA Collective Indexes on CD Search Indexes :

The CA Collective Indexes on CD Search Indexes allow the same items as listed above - Word, Author, Gen. Subj., Patent No., CAS RN, Compound, Formula, CAN etc.

Searching Multiple Words

Enter the first word in the first Word Search entry box, then select a search field. Enter the second term in the second Word Search entry box. Then select a search field for the second term. Continue entering terms and selecting search fields for all of wer search terms. Click Search to start the search.

Combining multiple terms

Use Boolean operators to combine multiple search terms. The operators are located to the left of wer search term boxes and may be viewed by clicking on the arrow in the box containing AND.

The Boolean operators include :

AND: Documents must include all search terms. AND may minimize the number of documents retrieved because all terms must be present in the record, e.g., FATTY AND FOOD retrieves records with both FATTY and FOOD in the document. AND is the default option. If we do not select a Boolean operator, AND logic is assumed.

OR: Documents must include either term or all terms. This option may retrieve more documents because we have expanded the number of terms that may be present in wer search. For example, BENZENE OR BENZYL retrieves records with either BENZENE or BENZYL in the document and those with BENZENE and BENZYL.

NOT: Records must include the first search term but not the second search term. For example, LACTOSE NOT MILK retrieves documents that contain the term LACTOSE provided the term MILK is not contained in the same record.

Setting Term Relationships

Use Word Relationship, located at the bottom of the Word Search Template, to specify where multiple search terms must appear within a document. Word relationships apply between rows in the Word Search dialog box. Word adjacency always applies within rows in the WORD index. The Word Relationship options include:

SAME DOCUMENT: Documents must contain wer search terms in any order and in any field of the display record. This is a broad search type and is also the default option. If we do not select a Word Relationship, Same Document is assumed.

SAME PARAGRAPH: Documents must contain wer search terms in any order within the same paragraph or index entry.

WORDS APART: Lets we specify the maximum number of terms that may occur between search terms. Enter a number between 0 and 9.

EXACT ORDER: Documents must contain wer search terms in the exact order that they were typed.

Using Wild Cards or Truncation

Append Wild Cards to search terms to retrieve variant forms of the term, e.g., singular, plural, or to mask characters within a character string, e.g., SULFURYL, SULFONYL. Wild cards are not permitted at the beginning of any term.

Two types of wild cards are available:

?: represents exactly one character. The ? may be used anywhere, except at the beginning of a term. For example, BASE? retrieves BASES or BASED, but not BASE. LI?E retrieves LIFE, LINE, or LIKE.

: represents any number of characters, including none. This wild card may only be used at the end of wer search term. For exam-ple, OXID retrieves OXIDE, OXIDES, or OXIDIZING.

11.4. 3 Advanced Searching

Advanced Search Tools are used to refine search results. These tools are available while entering search terms or while displaying document records.

To search for synonymous terms in the Word Search dialog box, enter wer term in a word entry box. Then type OR (the OR Boolean operator), followed by a related term. We may enter any number of terms in the word entry box, e.g. MILK OR PROTEIN OR CALCIUM.

Select the WORD search field and then click Search to retrieve a document title list. Each document title listed has at least one occurrence of one of the search terms and may include all search terms. Also, use the OR operator in conjunction with other Boolean operators. For example, if we enter MILK OR PROTEIN AND VIRUS, the system automatically inserts parenthesis around the OR statement to imply executable priority. Parenthesis are internally inserted around search terms that precede the changed Boolean operator, i.e., (MILK OR PROTEIN) AND VIRUS. The documents re-trieved contain the terms MILK and VIRUS, PROTEIN and VIRUS, and MILK and PROTEIN and VIRUS.

STOP WORDS

Stopwords are frequently used words. Stopwords are not searcha-ble. Stopwords include: AN, AND, AS, AT, BY, FOR, FROM, IN, NOT, OF, ON, OR, THE, TO, and WITH

A Sample Search from CA on CD

28 A human antibody specific for hepatitis C virus core protein: synthesis in a bacterial system and characterization.

22 Synthesis of the palmitoylated and farnesylated C-terminal lipohexapeptide of the human N-ras protein by employing an enzymically removable urethane protecting group.

21 Cloning and functional characterization of human selenophosphate synthetase, an essential component of selenoprotein synthesis.

18 Beta-adrenergic regulation of cyclic AMP synthesis in cultured human syncytiotrophoblast.

16 Specificity of intrathecal IgG synthesis for HTLV-1 core and envelope proteins in HAM/TSP.

11 Diabetes-induced activation of system y+ and nitric oxide synthase in human endothelial cells: association with membrane hyperpolarization.

9 Expression of the human gene encoding urokinase plasminogen activator receptor is activated by disruption of the cytoskeleton.

11.5 SEARCHING *BIOTECHNOLOGY ABSTRACTS* DATABASE

Derwent Biotechnology Abstracts, produced by Derwent Information Ltd (London), provides comprehensive coverage of publications describing research in the field of biotechnology. It covers all aspects of biotechnology, including genetic engineering, biochemical engineering, fermentation, cell culture and waste-disposa. provides detailed coverage of all aspects of biotechnology from agricultural use to pharmaceuticals, including genetics, downstream processing and more. The database corresponds to the printed publication of the same name.

The database includes publications as reported in scientific journals and in the patents literature since 1982. Over 1,100 journals published in 20 languages are regularly and promptly scanned for relevant papers. The worldwide patent literature and conference proceedings are also covered. Each month data from 1000 to 1200 documents are added to the database. The frequency of updation is biweekly. As of December 1999, the file size exceeds with 2 lakh documents.

Each record in the database files comprises a detailed abstract of up to 200 words together with controlled-language indexing. Literature records also include complete bibliographic information and patent documents that include patent number, patentee and publication details. Approximately 27 percent of the records are patent records.

Derwent Biotechnology Abstracts database can be accessed online from DIALOG, Internet website and on CD-ROM produced by SilverPlatter.

A Sample Search from Derwent Biotechnology Abstracts Database

No.	Records	Request
1	1697	INSULIN
2	19648	HUMAN
3	22983	RECOMBINANT
4	21455	GENETIC
5	36159	ENGINEERING
6	92	(INSULIN and HUMAN and RECOMBINANT) and GENETIC ENGINEERING)
7	127776	LA = "ENGLISH"
8	61	#6 and (LA = "ENGLISH")
9	49461	PT = "PATENT"
* 10	21	#8 and (PT = "PATENT")

Record 1 of 21 - Derwent Biotechnology Abstracts
AN: 94-06124
CA: Tufts-Coll.

TI: recombinant hormone e.g. somatotropin prep, insulin prep., recombinant somatotropin prep., mamma tissue-specific gene expression in mouse, rat, guinea pig, goat, cow, horse, pig transgenic animal milk, myogenic vector system, beta-casein mouse mammary-tumor virus, beta-lactoglobulin promoter

* mammal (Vol.13, No.11)

IM: D-PHARMACEUTICALS D2-Hormones; E-AGRICULTURE E5-Agriculture,-Other; A-GENETIC-ENGINEERING-AND-FERMENTATION A1-Nucleic-Acid-Technology

GE: WO-; WO 9405782; 17.03.94
PN: 10.09.92-92US-0943059; 10.09.93 as 93WO-US08618
XR: 1994
PR: 94

Record 2 of 21 - Derwent Biotechnology Abstracts
AN: 94-03814
CA: HSC-Res.Develop.

TI: clinical, pre-clinical autoimmune disease, insulin-dependent diabetes mellitus diagnosis, recombinant cattle serum albumin peptide prep., protein sequence, immunoassay * mammal (Vol.13, No.7)

IM:D-PHARMACEUTICALS D3-Peptides-and-Proteins; A-GENETIC-ENGINEERING-AND-FERMENTATION A1-Nucleic-Acid-Technology

GE: WO-; WO 9402507; 03.02.94
PN: 28.07.92-92CA-2074790; 28.07.93 as 93WO-CA00304
XR: 1994
PR: 94

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Record 21 of 21 - Derwent Biotechnology Abstracts
AN: 87-04775
CA: Hoechst

TI: human, pig, cattle recombinant pro-insulin, prepro-insulin chem. or enzyme cleavage, cyanogen bromide, protease

* mammal peptide hormone Escherichia coli bacterium

IM: D-PHARMACEUTICALS D2-Hormones; C-CHEMISTRY C1-Analysis-and-Structure; A-MICROBIOLOGY A1-Genetics

GE: US-; US4639332; 27.01.87
PN: 03.08.83-DE-327928; 01.08.84 as 636672
XR: 1987
PR: 87

11.6 SEARCHING MEDLINE DATABASE

National Library of Medicine (NLM) is one of the important bodies in the development of online information industry. NLM is located at the National Institutes of Health (NIH). NLM is dedicated to making the world's biomedical information available throughout the US. It is available at the website: http://www.nlm.nih.gov

MEDLINE is the major bibliographic database in the field of health sciences, produced by the NLM. The database contains over nine million references and is growing at the rate of approximately 25,000 items per month. It has been developed in conjunction with publishers of biomedical literature as a search tool for accessing literature citations and linking to full-text journals at Web sites of participating publishers. MEDLINE is available through Internet Grateful Med (IGM) and PubMed.

11.6.1 PubMed Search System

The publishers participating in the PubMed project supply NLM with formatted citations prior to or at the time of publication, and NLM adds them to the PubMed search system. If the publisher has a WWW site that offers full text of its journals, PubMed provides links to that site. In addition, PubMed provides a WWW service, which allows publishers (or other outside users) to match up their own citations to PubMed entries, using bibliographic information such as journal, volume, issue, page number, and year. This permits publishers easily to link from references in their published articles directly to entries in PubMed.

Database Coverage

The PubMed Search System provides access to the PubMed database of bibliographic information, which is drawn primarily from MEDLINE and PREMEDLINE. In addition, for participating journals that are indexed selectively for MEDLINE, PubMed includes all articles from that journal, not just those that are included in MEDLINE. Finally, PubMed also provides access to the molecular biology databases included in NCBI's Entrez retrieval system. It is expected that access to additional National Library of Medicine databases will be added in the future.

MEDLINE (MEDlars onLINE) is the National Library of Medicine's (NLM) premier bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and the preclinical sciences. The MEDLINE file contains bibliographic citations and author abstracts from approximately 3,900 current biomedical journals published in the United States and 70 foreign countries. The file contains approximately 9 million records dating back to 1966. Coverage is worldwide, but most records are from English-language sources or have English abstracts. Each MEDLINE record is identified with a unique identifying number called a MEDLINE UID (MUID in PubMed). Citations for MEDLINE are created by the National Library of Medicine, International MEDLARS partners, and cooperating professional organizations. MEDLINE records are incorporated into PubMed weekly, and are also assigned a PubMed unique identifier (PMID).

PREMEDLINE was introduced by the National Library of Medicine in August 1996. The PREMEDLINE database provides basic citation information and abstracts before the full records are prepared and added to MEDLINE. New records are added to PREMEDLINE daily, and each record receives a MEDLINE UI from the beginning. After MeSH terms, publication types, GenBank accession numbers, and other indexing data added, the completed records are added weekly to MEDLINE, and deleted from the interim PREMEDLINE database. PREMEDLINE records are incorporated into PubMed on a daily basis, and assigned a PubMed unique identifer (PMID).

Some of the PubMed bibliographic data is transmitted to PubMed directly by publishers, and assigned a PubMed identifier (PMID). This data is also used by the NLM as input for PREMEDLINE. For a short period of time, while being processed for PREMEDLINE, this data may appear only in PubMed. When a publisher-supplied citation is subsequently incorporated into PREMEDLINE, it is updated to include the UI in addition to the PMID. Later, when the record receives its MeSH terms and other MEDLINE database elements, it will be updated again. Publishers may also, at any time, submit corrections and updates of their citations to PubMed.

PubMedOnly : Articles Not in MEDLINE or PREMEDLINE

Some of the articles received electronically from publishers, however, will never be replaced by PREMEDLINE or MEDLINE articles. This occurs when a particular article in a selectively indexed journal is out of scope for MEDLINE (such as a geology article in a general scientific journal like Science or Nature), but the publisher provides PubMed with electronic information for the entire journal. These records have only a PMID, and no UI.

PubMed Journal Information

Journal Browser allows we to look up journal names, MEDLINE abbreviations, or ISSN numbers for journals that are included in the PubMed system.

Journals Full Text

MEDLINE Journals With Links to Publishers' Web Sites for a list of Web-based journals to which PubMed currently provides links. New journals are regularly added. Web-based journals usually contain the full-text of the original article, but this is not always the case. It varies by publisher and journal. Some sites may require that we register, subscribe, or pay a fee in order to view the full text of an article. Contact the journal publishers as noted on their individual Web sites for specific access information.

Journals by FTP full list of the PubMed journals is also available by ftp.

Linking to PubMed

Users can create WWW links to retrieve and display one or more PubMed records, using HTML syntax. (See PubMed and Entrez Databases for detailed information on how to link to specific citations, how to create links that perform searches, how to use Boolean expressions, and how to specify output formats).

PubMed Citation Matcher

The Citation Matcher allows users to match their own list of citations to PubMed entries, using bibliographic information such as journal, volume, issue, page number, and year. The Citation Matcher reports the corresponding PMID or UI. This number can then be used to easily to link to PubMed. This service is used heavily by publishers or other database providers who wish to link from bibliographic references on their WWW sites directly to entries in PubMed.

This facility allows we to find the PubMed ID or the MEDLINE UI of any article in the database, given its bibliographic information (journal, volume, page, etc.). If we wish to enter information manually to look for a single article, use the Citation Matcher for Single Articles. If we wish to give the matcher formatted information to look for many articles all at once, see the Batch-oriented citation matcher. If we wish to construct URLs that permit we to operate the Citation Matcher directly. (See How to Link to the Citation Matcher).

11.6.2 Searching PubMed

PubMed provides various links to answers/information for the frequently asked questions by the users as listed below:

- How do I find articles about a disease or condition?
- Can I search by the author of an article?
- I am looking for a specific article. I have the journal name, title, and author's name. Is there a quick way to retrieve a single citation?
- Can I specify a single date or date range as part of my search?
- Can I use a "wildcard" (*) when searching in PubMed?
- Can I do adjacency searching?

The links to the above questions to help the users to understand the method of searching the PubMed. It also answers how to display the results on a single page, print and save the information, search strategies, list of the journals indexed for Medline, order of displaying the citations and the links to Related Articles, etc. from the database.

PubMed provides access to the MEDLINE database, which contains bibliographic citations and abstracts (if abstracts are available in the journal) from more than 3,900 biomedical journals. PubMed does not itself include the full-text of articles. However, PubMed makes available the several options for obtaining the full-text copy of an article:

1) PubMed links to the Web sites of publishers who offer full-text access. PubMed currently links to publisher Web sites where several hundred journal titles are available. These publisher Web sites may require a subscription or fee in order to view the full-text of an article.

2) When a citation contains a link to the full-text, a button with the name of the journal will display in PubMed's detailed display next to the Links label. For example, enter a search for articles from Biological Chemistry (J Biol Chem) and click on Display to review the detailed results. Next, click on the button "JBC Online" to link to the publisher's web site.

3) A list of journals with links to full-text can be viewed from PubMed's Journal Browser.

4) The Order button on the Document Summary Page allows we to order documents from a library in wer area using the Loansome Doc feature of PubMed. Document ordering via Loansome Doc is available for all MEDLINE and PREMEDLINE citations - these citations have been assigned a MEDLINE UI (a unique identifier number) which is required for ordering.

Searching to find articles about a disease or condition?

Please be aware that it is not the intention of the National Library of Medicine (NLM) to provide specific medical advice, but rather to provide users with access to sources of information to better understand their health and their diagnosed disorders. Specific medical advice can not be provided and NLM urges users to consult a qualified healthcare professional for answers to personal questions. NLM does not have pamphlets or other materials to mail.

The National Library of Medicine provides access to its MEDLINE database FREE of charge on the World Wide Web so that we can conduct wer own research. NLM's MEDLINE database has more than 9 million references to articles published in 3,900 biomedical journals. From PubMed, to retrieve citations to articles discussing a specific disease or condition follow the steps below.

A Quick PubMed Search:

1. Enter wer search term(s) in the PubMed query box (e.g., rheumatoid arthritis) and click on the Search button.
2. PubMed will display an initial batch of citations. From this page, the Document Summary Page, we can browse the results to determine which citations we may want to display in abstract format, or to retrieve a copy of the full-text of the article. In addition, if we find one citation that is "on-target," use the Related Articles link to retrieve additional articles that are closely related to the "on-target" article.

For more detailed instruction on searching in PubMed, PubMed's online Help -- available from the PubMed home page sidebar or from the question mark (?) link on the title bar at the top of a display page may be used.

Additional Resources:

In addition to accessing PubMed for citations to journal articles, the following consumer health information resources are also very helpful:

- NLM's MEDLINEplus is an easy-to-understand resource for the public which includes MEDLINE as well as links to self-help groups, access to National Institute of Health consumer-related organizations, clearinghouses, health-related organizations, and clinical trials.
- The Healthfinder web site can lead we to selected online publications, clearinghouses, databases, web sites, and support and self-help groups, as well as the government agencies and not-for-profit organizations that produce reliable information for the public.
- The Health Information page presents an introduction to some of the many health information resources provided by the National Institutes of Health.
- The National Health Information Center is specifically designed to provide the public with information on medical conditions. In addition to visiting their web site, we can also contact them via email: nhicinfo@health.org
- The National Women's Health Information Center web site links we to current health information resources for the consumer, the researcher, and the health care professional. It has excellent general resources, including the Merck Manual of Diagnosis and Therapy.
- The National Cancer Institute conducts and supports research, training, health information dissemination, and other programs with respect to the cause, diagnosis, prevention, and treatment of cancer, rehabilitation from cancer, and the continuing care of cancer patients and the families of cancer patients.
- The NLM HIV/AIDS Resources web site links we to online databases, conference information, publications, outreach activities, treatment information, clinical trials information and related Internet resources outside NLM.

Search by the Author of an Article?

Searching by a particular author is easy. Enter the author's name in the format of last name plus initials (e.g., waldman bj). PubMed automatically truncates on the author's name to account for varying middle initials and designations such as Jr. or 2nd. In addition, we can also combine a subject terms or a journal title with the author's name (e.g., waldman bj arthroplasty). The following points may be noted while searching by author of an article:

1. To turn off the automatic truncation so that we retrieve based only on the single first initial, use double quotes around the surname and first initial qualified with the author search field tag [au], e.g., "waldman b" [au] .

2. If we enter just the author's last name, i.e., no initial, PubMed will search that name in All Fields not just the Author field. In addition to retrieving citations to article with the author's last name, we may also retrieve citations to article discussing an author by that last name.

Searching a specific article with the journal name, title, and author's name.

PubMed's Citation Matcher is a fill-in-the-blank form that allows we to enter journal citation information to locate a record for a specific single article, or items indexed from a particular volume or issue of a journal. The Citation Matcher is available from PubMed's home page sidebar.

The Citation Matcher allows we to enter any or all of the following bibliographic elements: journal title, date, volume, issue, page, or author. On the Citation Matcher page, enter the bibliographic data we have (as instructed on the screen), and click on Search. If there are any citations that match, PubMed will display wer search results.

Specifying a single date or specific date range as part of search

The users can specify a single date or date range as part of wer search strategy. PubMed contains two date fields:

- Date of Publication, [dp] -- The date that the article was published. Note: Use this date field to retrieve articles published on a specific date or within a certain time period.
- Entrez Date, [edat] - Contains the date that a record was initially added to PubMed. Note: Use this date field to retrieve citations that have been added since a previous search.

To add a date or date range to wer search strategy, follow the steps below:

1. Dates must be entered using the format yyyy/mm/dd [date field]. The month and day are optional.

2. To enter a date range, use the colon (:) between two dates, e.g., yyyy/mm/dd:yyyy/mm/dd [date field]. The month and day are optional.

3. We must combine the date or date range using the Boolean operator, AND (must be in uppercase) to wer search strategy, e.g., yyyy/mm [date field] AND term.

Examples:

- Retrieve citations to articles discussing cardiac surgery in children that have been added to PubMed from Oct 5, 1998 to Dec 4, 1998: 1998/10/05:1998/12/04 [edat] AND cardiac surgery children
- Retrieve citations to articles published in the June 1998 issue of the Journal of Vascular Surgery : journal of vascular surgery AND 1998/06 [dp]
- Retrieve citations added to PubMed from Oct 5, 1998 to Dec 4, 1998 : 1998/10/05:1998/12/04 [edat]
- Retrieve citations to articles that were published on Mar 15, 1998: 1998/03/15 [dp]

Using "Wildcard" (*) when Searching in PubMed?

An asterisk (*) is used to find all words that begin with a given text string. Place an asterisk at the end of a term to search for all terms that begin with that word; for example bacter* will find all terms that begin with the root bacter; e.g., bacteria, bacterium, bacteriophage.

PubMed uses only the first 150 variations of a truncated term. If a truncated term, e.g., staph*, produces more than 150 variations, PubMed displays the warning message shown below on the Document Summary Page (or Current Query in Advanced Search Mode).

Wildcard search for 'term*' used only the first 150 variations. Lengthen the root word to search for all endings. This warning message also appears in the Details box (on the Document Summary Page) where we can edit the truncated term and resubmit the search. The following points are to kept in mind while using Wildcard option.

1. Phrases that include a space in a word after the asterisk will NOT be included; for instance, infection* includes "infections," but not "infection control."
2. Truncation turns off Automatic Term Mapping and, also the automatic explosion of a MeSH term for more specific terms indented under it. For example, heart attack* will not map to the MeSH term, Myocardial Infarction or include any of the more specific indentions, e.g., Myocardial Stunning; Shock, Cardiogenic.

Adjacency Searching

PubMed does not actually perform adjacency searching but uses a Phrase List (a list of recognized phrases) against which search terms are matched. PubMed may fail to find our specific phrase because it is not in the Phrase List. However, we can enclose our phrase in quotes (e.g., "single cell") to force PubMed to check a second list, the Compound Word Dictionary for wer phrase. This dictionary contains several million phrases generated from the citation titles and abstracts, the UMLS and the MeSH vocabulary.

The phrase may actually appear in the citation and abstract data, but may not appear in either the Phrase L st or the Compound Word Dictionary. If this is the case, then the individual terms are combined (ANDed) together and searched in All Fields. We can see how PubMed has translated wer search terms by clicking on the Details button from the Document Summary Page (results screen), see examples below.

Example without double quotes:

If we enter: single cell PubMed will search these terms as: single[All Fields] AND("Cells"[MeSH Terms] OR cell[Text Word])

Example with double quotes:

If we enter: "single cell" PubMed will search these terms as: "single cell"[All Fields]

For more detailed description on the above topic please refer to PubMed's online Help -- available from the PubMed home page sidebar or from the question mark (?) link on the title bar at the top of a display page.

Printing and Saving

On the Document Summary Page (results screen), PubMed displays wer citations in batches - the default is 20 citations per page. We can print, save, or order citations only one page at a time.

To save a search strategy in PubMed, follow the steps below:

1. First, we must construct wer search strategy from the Basic Mode (PubMed's home page) or from the Boolean Search mode, and click on Search.
2. While on the Document Summary page (initial display of citations), use wer web browser's function to save the URL or address location (e.g., bookmarks, favorite places).
3. When we save the URL it will be saved as "PubMed medline query". Use wer web browser's edit function to change the title to reflect the subject of wer search strategy.

PubMed is developing a "cubby" service - a place to store wer stuff (e.g., search strategies, user profiles). The new "cubby" service, along with other PubMed features under development, are discussed under the New/Noteworthy section in PubMed.

Searching and Downloading the Entire List of the Journals indexed for MEDLINE

The entire list of journals indexed for MEDLINE is available for download into a file in four different formats (Uncompressed, GNU zip, UNIX Compress or PKZIP) from the Citation Matcher.

Search for a Few Specific Journal(s):

We can use PubMed's Journal Browser to search for specific journals. The Journal Browser (available from PubMed's home page sidebar) allows we to look up a journal by title or by the MEDLINE journal abbreviation and search for citations from that journal.

To do this, from the Journal Browser page, enter either the full journal title or MEDLINE abbreviation in the query box and click on Start. The Journal Browser will display a listing of possible matches each with the full journal title, ISSN number, and MEDLINE abbreviation. Click on the MEDLINE abbreviation to retrieve all of the citations for that journal that are available in PubMed.

In what order are the citations displayed in PubMed?

Citations in PubMed are displayed in Entrez Date order - last in, first out. The Entrez date is the date that a record was initially added to PubMed and should not be confused with the publication date which is the date an article was published.

We can use the Entrez Date pull-down menu to limit wer retrieval to a pre-selected range of dates or use the Entrez Date search field qualifier to specify a single date or date range. The Entrez Date does not display as part of the record.

In what order are citations from the Related Articles link displayed?

The Related Articles link displays citations in rank order from the most to least relevant compared to the citation we linked from.

Sample Search from Medline Database

No.	Records	Request
1	181	explode "MYOCARDIAL-INFARCTION"/ drug-therapy
2	726	CP = "INDIA"
* 3	2	#1 and (CP = "INDIA")

Record 1 of 2 - MEDLINE (R) 10/97-12/97

TI: Safety of thrombolysis during mensturation [letter]

AU: Manoria-PC

SO: J-Assoc-Physicians-India. 1995 Jan; 43(1): 73

ISSN: 0004-5772

PY: 1995

LA: ENGLISH

CP: INDIA

MESH: Electrocardiography-; Menstruation-; Myocardial-Infarction-diagnosis; Myocardial-Infarction-drug-therapy; Safety-; Thrombolytic-Therapy

MESH: *Echocardiography-; *Myocardial-Infarction-ultrasonography

TG: Female; Human

PT: LETTER

AN: 97427759

UD: 9711

Record 2 of 2 - MEDLINE (R) 10/97-12/97

TI: Severe backache during thrombolytic therapy with streptokinase.

AU: Suresh-V; Maliyil-MV

AD: Department of Medicine and Cardiology, General Hospital, Tata Tea Ltd, Munnar.

SO: J-Assoc-Physicians-India. 1996 Oct; 44(10): 743

ISSN: 0004-5772

PY: 1996

LA: ENGLISH

CP: INDIA

MESH: Diabetes-Mellitus,-Non-Insulin-Dependent-complications; Fibrinolytic-Agents-administration-and-dosage; Infusions,-Intravenous; Middle-Age; Myocardial-Infarction-complications; Myocardial-Infarction-drug-therapy; Streptokinase-administration-and-dosage

MESH: *Fibrinolytic-Agents-adverse-effects; *Low-Back-Pain-chemically-induced; *Streptokinase-adverse-effects; *Thrombolytic-Therapy-adverse-effects

TG: Case-Report; Human; Male

PT: JOURNAL-ARTICLE

RN: EC 3.4.-; 0

NM: Streptokinase; Fibrinolytic-Agents

AN: 97395105

UD: 9710

11.7 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

* Online Searching is a process of interacting with the computer systems to access information to meet the particular requests from the users and the search is usually conducted from a computer communicating with a remote computer system, on which the required database is located

* Many databases are now available on CD-ROM (Compact Disc Read Only Memory). Searching the databases on CD-ROMs have many advantages - providing database access to more number of users in a fairly stress-free environment, no external service has to be accessed and paid for it, and there is no need for establishing communication links. The users could search the online databases, if necessary, to update their information and thus, complement the CD-ROM search results.

* There are several kinds of databases available as Online and CD-ROM databases. These databases can be grouped primarily into three types. They are Source Databases (Full text, Numeric and Textual-Numeric), . Reference Databases (Referral and Bibliographic) and Mixed types (more than one).

* Database producers use different fields in their record structures, depending on the nature of the database they produce. The fields are searchable with a Search Software developed by the database base producers/vendors.

* In the present unit we have discussed the various methods of searching the databases such as ERIC, Biotechnology Abstracts, Chemical Abstracts and Medline.

11.8 REFERENCES AND RECOMMENDED BOOKS

CD-ROM in Libraries: Management Issues/ edited by Terry Hanson and Joan Day. Bowker Saur, 1994.

FECKO, Mary Beth. *Electronic Resources: Access and Issues.* London: Bowker Saur, 1997.

HARTER, Stephen P. *Online Information Retrieval: Concepts, Principles and Techniques.* Orlando: Academic Press, 1986

NISC Discover: ERIC on CD-ROM. (1985-March 1999), Chemical Abstracts (CD-ROM), Derwent Biotechnology Abstracts (CD-ROM) and Medline (CD-ROM)

ONLINE Searching: Principles and Practices/ R.J. Hartley et al. London: Bowker Saur, 1992.

Website of Medline (http://www.nlm.nih.gov)

11.9 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Explain the structure and organisation of a database with a suitable example.

2) Discuss the methods of searching any one of these databases: ERIC, CA, MEDLINE and Biotechnology.

II SHORT NOTES

a) Search Software

b) Bibliographic Database

c) Online Services

UNIT - 12 : INFORMATION PRODUCTS

Structure

12.0 AIMS AND OBJECTIVES

This unit aims to provide an overview of various information products which are useful for a special library.

After studying this unit, you should be in a position to

- list out various information sources required for special library
- describe the various information sources with examples from specialised subject disciplines
- discuss the various formats of information products useful for a special library.

12.1 INTRODUCTION

There is a phenomenal growth of literature all over the world. It is estimated that literature doubles every decade. To quote *McGraw-Hill Encyclopaedia of Science and Technology*, "the literature is world-wide in origin, international in language diverse in subject content, complex in form, uneven in quality and tremendous in amount. It is also

explosive." Consequent upon the tremendous growth of scientific literature, the problem of searching for information has become a serious concern for special library and information professionals.

The special libraries should have a comprehensive knowledge of the sources of information and the technique of retrieving the same to serve the specialist users. The knowledge of various information sources will help the librarian to develop effective collection development policy. This calls for the special librarians to identify the information sources according to the needs of specialist users. In addition to performing their germane role, a special librarian is expected to play an important role in the different stages of preparation of information products.

In this unit, we shall discuss in detail the various sources of information, taking examples from various subject fields.

12.2 TYPES OF INFORMATION SOURCES

The various types of information sources can be grouped into two broad categories, namely, `Documentary Sources' and `Non-Documentary Sources.'

Non-Documentary Sources can be further divided into i) Formal Sources, and ii) Non-Formal Sources,

i) Formal Sources include research organisations, learned and professional societies industries, government departments, colleges, universities and consultants.

ii) Informal Sources refer to discussion or dialogue with the experts, attending professional meetings and conferences.

The Documentary Sources may be categorised as i) Primary Sources, ii) Secondary Sources, and iii) Tertiary Sources of Information.

12.3 PRIMARY SOURCES

The primary sources are the first published records of original research and development. Primary sources are most important for research. They help the researcher to keep himself uptodate and well informed of the latest developments. By its nature, the primary literature is widely scattered, and it is difficult to locate it.

The original reports of scientific and technical investigation form the bulk of primary sources. Some of these records may be largely observational (eg. reports of scientific research), or descriptive (eg. trade literature), but most of these are reports of experiments containing findings and conclusions.

Primary sources are published in a variety of forms. The important forms of primary sources are discussed in detail here.

12.3.1 Reports

A Report is defined as a document which gives the results of the progress with a research/development investigation. It draws conclusions and makes recommendations and initially submitted to a person or body for whom the work was carried out. Commonly, a report bears a number which identifies both the report and the issuing authority. The essential feature of a report and in particular of scientific or technical report is that it aims to convey certain specific information to specific readers.

The Characteristics of Technical Reports are

1) They are produced to report to a sponsoring agency on the progress of result of research on development.

2) They allow prompt dissemination of research results. Since there are no review bodies and no rules to be met, reports can be printed and disseminated quickly

3) They are considered as information literature. They have no space restrictions, and they can be very short or several volumes long. They can include comprehensive tables and illustrations. Whereas a journal article must necessarily fit space restriction

4) They have report numbers.

5) They allow flexible distribution of results. It means they have restricted access. Whereas journals are public and available to any one who chooses to subscribe. technical reports can be distributed to as small or large a population as the author or the distributing agency desires.

The report literature appeared for the first time in aeronautics and aircraft industry. They appeared in Great Britain from 1909 as a series of the Advisory Committee for Aeronautics, (now the Aeronautical Research Council.)

In U.S.A. the National Advisory Committee for Aeronautics (now known as NASA), issued the first report on the behaviour of aeroplane in gusts in 1915. The development of report as a major means of communication, however, dates back to 1941, when the establishment of U.S. Office of the Scientific Research and development (OSRD) took place. This agency was established to mobilise scientific and technical information resources for national defence. The OSRD was later abandoned and a number of special agencies were created specifically to organise and disseminate reports information. In the United States, there are four government agencies which are responsible for the largest output of technical reports:

1) National Technical Information Service (NTIS)

2) The Defence Technical Information Centre (DTIC)

3) The National Aeronautics and Space Administration. Scientific and Technical Information Facility (NASA / STIF)

4) The Office of Scientific and Technical Information (OSTI) of the Department of Energy (DOE)

Advantages:

Reports offer a number of advantages over other means of dissemination.

a) Greater speed

b) Greater flexibility, and

c) Opportunity to go into details, if necessary.

Problems:

There are several problems with regard to the use of report literature. Some of them are-

a) The problem of non-availability, linked with incomplete or incorrect identification

b) Classified reports are usually marked `Secret', `Restricted'. `Confidential', `Not for publication' and `Property.' Safeguarding and protection of classified documents against unlawful dissemination is essential because of their importance to national defence.

c) They are not available through normal publishing channels

d) A number of reports are prepared with limited readership in mind.

Categories of Reports:

The following are the types of reports:

1) The individual authors' preprint, which may end as a journal article

2) The corporate proposal type report, aimed at a prospective customer

3) The institutional report, the purpose of which is budget justification and image enhancement

4) The contract progress report, primarily aimed at the sponsor, but also available to interested persons

5) The final report on a technical contract

6) Trend report

7) The book in report form, typically a review or state- of -the-art survey

8) The committee type report.

Examples :

1) State-of-the-art Reports:

India, Department of Science & Technology. *State-of-the-Art report on studies on Himalayan Glaciers*. New Delhi, 1984.

Gupta, C.P. *State-of-the-Art Report on Combustion, Air pollution and Combustion Devices.* New Delhi: Department of Science & Technology, 1985.

2) Trend Reports:

Central Machine Tools Institute. *Trend Report on Electro-chemical Machine*. 1965-72. 2v. Bangalore, NICMAP.

Central Leather Research Institute. *Trend Report on Garment and Globe Leather*. Madras: NICLAI, 1984.

12.3.2 Patents

Patents are important sources of primary literature. They are of immense value to a special library, especially for scientific and technological institutions as these are indicators of scientific advance. New developments are often appear as patent literature before they are published elsewhere.

Essentially, a patent is a privilege offered by the State to the inventor. The State guarantees to the inventor the sole right for a certain period of years, to make, use or sell his invention. The purpose is to enable the inventor to have a fair reward and to encourage him in his further efforts.

All major countries have developed patenting system, most of them based on the UK model. The earliest law for the grant of patents of inventions was a decree of Venitian State Senate in 1474.

In India, the patent system is 25 years old and the present law is governed by Patent Act, 1970 and the Patent Rules. The Patents Act makes a solid effort in the direction of encouraging the setting up new industries based on the latest technologies as disclosed in the patents

In the United Kingdom, the British Library Lending Division (BLLD) receives doctoral theses from a limited number of British Universities. One useful source for British Doctoral theses is *Index to theses accepted for Higher Degree by Universities of Great Britain and Ireland and the Council for National Academic Awards* compiled and published by ASLIB since 1953.

In the U.S.A. and Canada 300 co-operative institutions submit either the full texts or abstracts of doctoral dissertations to Xerox University Microfilms who, then publishes a monthly compilation called *Dissertations Abstracts International* (DAI). This publication appears in two sections: A. Humanities and B. Social Sciences.

The National Social Science Documentation Centre (ICSSR) in India has derived a scheme to create a document base of dissertations. Under the scheme, the doctoral scholars are invited to deposit a copy of their theses along with its abstracts at this centre against a token payment of Rs.400. The centre so far has a collection of 2,000 theses.

12.4 SECONDARY SOURCES OF INFORMATION

Secondary sources of information are those which are either compiled from or refer to primary sources of information. The original information is usually modified, selected or reorganised so as to serve a definite purpose or group of users. These contain organised repackaged knowledge and the information is made available in a more convenient form. Secondary sources are more easily available and they serve as bibliographical tools to access primary sources of information. Encyclopaedias, dictionaries, handbooks and manuals, text books, annual reviews, abstracting and indexing periodicals belong to the category of secondary sources.

12.4.1 Indexing Periodicals

An indexing periodical is a regularly issued compilation of titles of articles that appear in current primary source journals. Generally, titles of new books, pamphlets, etc. are also included.

Examples:

Applied Science and Technology Index. New York: HW Wilson
Biological and Agricultural Index. New York: HW Wilson
Index to Legal Publications. New York: HW Wilson

12.4.2 Abstracting Periodicals

An abstracting periodical is a regularly issued compilation of concise summaries of - i) significant Articles (often in a very limited subject field) that appear in current primary source journals, and ii) important new research monographs, reports, patents and other primary source publications in that field.

Examples:

Indian Science Abstracts. New Delhi: INSDOC, 1965 -
Biological Abstracts. Philadelphia: Biosciences Information Service 1926 -
Chemical Abstracts. Easton Pa : American Chemical Society, 1907 -
Physics Abstracts. London: Institute of Electrical Engineers

12.5 TERTIARY SOURCES OF INFORMATION

These contain information distilled and collected from primary and secondary sources. The primary function of tertiary sources is to aid the researcher in the use of primary and secondary sources of information. Bibliography of Bibliographies; Directories, Guides to literature are some of the tertiary sources of information.

12.6 NON-DOCUMENTARY SOURCES OF INFORMATION

Non-documentary sources of information form a substantial part of communication especially in science and technology. These sources are of two types - formal and informal. Formal sources include research organisations, societies, industries, consultancies, government departments, etc. Informal sources include conversation with colleagues, visitors, attendance at professional meetings, etc.

12.7 INFORMATION SOURCES IN VARIOUS FORMATS

So far, in this chapter we have discussed about the various information sources and their usefulness in special libraries and information centres. Now, we shall briefly acquaint with the formats in which information sources are available.

Apart from the conventional printed book form, information is now being produced in many other forms like maps, microfilms, machine readable forms like databases - online, CD-ROM, INTERNET. The revolution that took place in the networked access to large volumes of information is of immense value to the scientist / researcher.

U.S. Geological Survey (USGS); Bureau of Census, National Oceanic and Atmospheric Administration (NOAA), Defence Mapping Agency, etc. are largest agencies in United States producing maps.

University Microfilm International, Serials in Microfilm lists more than 10,000 Serial titles.

12.7 LET US SUM UP

In order to keep pace with the literature explosion, the special librarian has to device methods to access information available in different journals. The special librarian and Information scientists must also be trained in using the latest techniques and in the use of Information Technology to provide effective information services to the specialist users. Apart from this, the librarian can play a prominent role in the generation of information products by providing the authors with relevant bibliographic information and standards for preparation of information. The special librarian with his expertise in the skills of bibliographic control can also involve himself in the preparation of supplemental aids like indexes, abstracts, current contents, etc. and help the scientist in satisfying the quest for information.

12.8 REFERENCES AND RECOMMENDED BOOKS

CHHOTEY Lal. *Information sources in science and technology*. Delhi: Bharati Pub., 1986.

INFORMATION sources in the life sciences/ edited by H.V. Wyatt. London: Butterworths, 1971.

PRUETT, Nancy Jones. *Scientific and technical libraries*. New York: Academic Press, 1986. Vol.3.

REFERENCE Sources Handbook/ edited by Peter W. Lee and Alan Day. 4th ed. London: LA Publishing, 1996.

SHARMA, Jagddish Saran and O.R. Grove. *Reference service and sources of information*. New Delhi: Ess Ess, 1987.

12.9 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) List out the various information sources found in special libraries and explain in detail any three of them.

2) Explain the importance of Patents and Standards in special libraries.

3) What do you understand by Information Products? Explain the importance of information products in electronic formats in special libraries.

II SHORT NOTES

a) Theses and Dissertations

b) CD-ROMs

c) Trade literature

UNIT - 13 : RESOURCE SHARING AND NETWORKING

Structure

13.0 AIMS AND OBJECTIVES

As a librarian you might have realised by now that no library in this world can claim to be self-sufficient in meeting all the information needs of its clientele. Co-operative ventures among libraries in sharing of their resources became the order of the day. This unit aims to provide an overview of the resource sharing and networking of libraries.

After studying this unit, you should be in a position to

- explain the concepts of Resource Sharing and Networking in libraries
- discuss the need and pre-requisites of Resource Sharing and Networking
- describe the major attempts made in the field of Resource Sharing and Networking.

13.1 INTRODUCTION

In the present environment of information and publication explosions, it has become practically impossible for any library to remain self-reliant. In a situation of growing demands of the readers and depleting levels of financial resources, no library is able to obtain all the material on demand. Resource sharing is a method of overcoming these and other limitations of the individual libraries in respect of their resources by way of co-operation and co-ordination among the participating libraries.

Resource sharing is nothing but sharing of library resources by certain participating libraries among themselves on the basis of the principle of co- operation. This is applicable in case of use of documents, manpower, facilities, services, building, space or equipment. In such a co-operative venture, it becomes possible for a user in any of the participating libraries to make use of the resources of not only his own library but also those of all the other participating libraries. Thus, through resource sharing, libraries can improve the total collection of reading material, consolidate their technological capabilities, improve their information dissemination tools and extend their library and information services to a larger user community.

On demand, each participating library should voluntarily come forward to share its existing resources with the other participating libraries. So, in this system, each library is both a giver and a receiver. There is, thus, an imperative need to develop a spirit of co-operation among the librarians, information scientists and documentalists. This spirit of sharing the resources would entail the participant libraries in a system to benefit for advancing their individual goals and objectives.

13.2 RESOURCE SHARING - DEFINITIONS, CHARACTERISTICS AND OBJECTIVES

Before discussing about the forms, methods and programmes of resource sharing, let us first examine the definitions, characteristics and objectives of resources sharing.

13.2.1 Definitions

The term `Resource' applies to any thing, person or action to which one turns for aid in times of need. The word `Sharing' connotes apportioning, allotting or contributing something that is owned, to benefit others.

Resource Sharing' in its most positive aspects, entails reciprocity, implying a partnership in which, each member has something useful to contribute to others and which, each is willing

and able to make available hen needed.

'Library Resources' however, has been defined in several ways. To John Fetterman it denotes "... any and all of the materials, functions and services which constitute a modern library system... It is ... amalgamation of people (manpower), processes, ideas, materials and money that form the substance of a library and can be described as its resources. These resources are very expensive (in terms of monetary costs) and scarce. It is essential that such resources should be put to optimal use. This is more relevant to the situation obtaining in developing countries, which not only face scarcity of resources but also severe competition for allocation of resources. It is in this context, resource sharing among libraries becomes inescapable and inevitable.

The American Library Association (ALA) Seminar, on Network and multi-type library cooperation, defined library networking as "The co-operatives structures, which cross jurisdictional, institutional, and often political boundaries to join in a common enterprise, several types of libraries - academic, special and public."

According to Miller (1977), it is a co-operative system established by libraries and information centres which are brought together by common subject, geographic proximity to share informational resources, human resources and all other elements essential for providing effective information service.

In the library world, institutions form network primarily to achieve better sharing of resources - resources consisting of bibliographic information and of collections and better service to patrons.

Library resource sharing, library co-operation, library consortium, library network are all various terms given to the same activity which means that a group of libraries have come together and entered into some kind of formal understanding for the purpose of sharing the resources of each other's materials, functions, services, and the staff to their mutual benefit, realising that only through resource sharing the greatest amount of the best information can be provided to most of the users at the most reasonable cost.

The National Commission on Libraries and Information Science (NCLIS) in its National Program Document (1975) defines a network as "Two or more libraries and/or other organisations engaged in a common pattern of information exchange, through communications, for some functional purpose. A network usually consists of a formal arrangement whereby materials, information and services provided by a variety of libraries and other organisations are available to all potential users. Libraries may be under different jurisdictions but agree to serve one another on the same basis as each serves its own constituents. Computers and telecommunications may be among the tools used for facilitating communication among them".

According to UNISIST, "Networking is a set of inter- related information systems associated with communication facilities, which are co-operating through more or less formal agreements and institutional agreements in order to jointly implement information handling operations with a view to pooling their resources and better serving the users. They generally follow identical or compatible rules and procedures."

From the above definitions it is clear that a network is a co-operative system of sharing the resources among two or more libraries through a formal institutional agreement, common pattern of exchange of information among libraries in a network is through communications system. The networks are often called information networks, electronic information network, library networks, etc.

13.2.2 Characteristics of Resource Sharing

Brett Butler (1975) defines a library resource sharing network as having the following five characteristics:

a) A dependent system, which is operated multi- laterally in response to the common desires of a group of member libraries;

b) A duplex element, which enables two way communication which separates a network from a publication or information service which is one-way;

c) Digital, which involves some use of computers or digital;

d) The distribution of information, which may take many forms such as catalogue card, print-out, etc. and

e) An independent organisation, separate from the administrative , political and fiscal bounds of its members.

The concepts of resource sharing and networking have become an important aspect of present day practical librarianship throughout the world. Explosion of literature and large scale duplication of documents even among the nearby libraries of a place, and on the other hand, shrinking budgetary provisions force library authorities towards sharing of available resources. Some envisage networking as a means of access to the resources available even at distant places. The advent of the modern computer and telecommunication technologies has come to play a major role in support of resource sharing and networking.

13.2.3 History and Evolution of the Concept

Since time immemorial, Indian saints, seers and indeed the lay public have been sharing knowledge for the common good. And one could venture to say that such sharing is the fundamental pre-requisite to scientific, technological and economic progress. Unfortunately, progress made in the various fields of science and technology in the recent past are so rapid that communication of discoveries and ideas cannot be effective with the traditional tools made use of, by our fore-fathers.

The volume of literature, one of the well proven and tested means of recorded knowledge, has been growing by leaps and bounds in the recent past. This aspect contributes yet another dimension to the already complex problems posed in the areas of acquisition, storage, organisation, dissemination and transmission of information (which is a major ingredient of knowledge base).

The term `Resource Sharing' has been used in the library profession since the 1960s, however, the practice is as old as librarianship itself. In the olden days, it was called library co-operation and mainly existed in the form of inter-library loan. Some evidence of inter-library loan was found in the period around 200 B.C., with material borrowed by the Library of Pergamum from the Great Alexandria Library of that time.

Well before the beginning of the 20th century, the basic methods of library co-operation had been suggested and in some cases, attempted with some success. According to Joe W. Kraus, library co-operation can be traced to the monastic libraries in the first half of the 13th century. Specifically, the Registrum Librorum Angeliae indicated the location of manuscripts in 138 English and Scottish monasteries. Later, in 1410, the monk John Boston deBury, in his Catalog Scriptorum Ecclesiae, attempted a Union Catalogue.

A number of years later, in 1627, a form of library co-operation was mentioned by Gabriel Naude in his Advice on Establishing a Library, when he stated that catalogues might

well serve to "please a friend, when one cannot provide him the book he requires, by directing him to a place where he may find a copy as may be easily done with the assistance of these catalogues."

Nicolas Claude de Peiresc, a Frenchman, attempted to begin an Inter-Library Loan System in the year 1634. The Royal Library in Paris, and the Vatican and Barberini Libraries in Rome were involved in this venture. Though dePeiresc was a very resourceful individual, his plan never materialized.

Around the year 1770, Germany saw the beginnings of a planned library co-operation activity. G.E.Lessing, librarian in Wolfenbuttel from 1770 to 1781, formulated a plan for the exchange of duplicate materials between libraries. He also suggested the development of a plan for joint acquisitions between Wolfenbuttel and Gottingen.

The Nineteenth Century saw inter-library co-operation begin in America. The formative years of the American Library Association were characterized by the notion of co-operation.

The American Library Association was organized in Philadelphia, in the yaer 1876. The first Inter-Library Loan Code became operative from 1917.

The World War II and the immediately following period saw the emergence of a concern among Library professionals, to embark on co-operation and resource sharing activities.

More recently, within a period of two decades, the Library Trends devoted two issues to library co-operation/resource sharing. This fact shows how the subject has gained importance in recent times. It is true that library co-operation had its beginning during the 1950's and 60's but the interest in resource sharing rose in the 1970's and 80's and more so, in the 90's.

The present decade has seen a greatly renewed interest in library co-operation and mutual benefits, prominently both at the international and national levels.

13.2.4 Need For Resource Sharing

Resource sharing in libraries and information centres is necessary because of the following reasons:

a) Recorded information and knowledge should be treated as a human resource to be shared by all - an ideal that can be met only through resource sharing of library system/networks that link "collection in the region, state, nation, and the world".

b) Even the large communities are not sufficiently large and wealthy to support fully adequate library services by themselves: no library can stand alone in this age of networking and co-existence.

c) There has been an explosion of information and the number of publications has increased enormously. This has posed serious problems. The information requirements of the user are becoming more and more diverse and complex. The dormant or depleting budget also threatens the libraries. Time delay is also one of the factors.

d) The mechanised impossibility that the traditional library tools cannot cope efficiently with the detailed requirement of research workers, for information of specified relevance. Resource sharing plays an important role in removing these impossibilities.

e) Information technology is complex, specialised, and costly; and the rising cost of conventional library operations requires that information activities develop co-operative arrangements.

f) It is only through library co-operation and resource sharing, that we can ensure rapid, effective improvement/extension of library resources to more people on a more fair/ direct basis.

g) The unsystematic and unintegrated library development often leads to waste, duplication, and the inefficient use of the total knowledge resource.

h) Many libraries have long been wastefully duplicating effort, performing repetitive processing, storing similar materials beyond those required to meet local everyday demands, and giving incomplete or limited information/materials to the public because of the lack of centralized services (ex: shared cataloguing, co-operative purchasing, and reference referral). The co-operative, time-shared, multi-institutional approach to computer usage would be the most efficient, cost-effective solution, for computer installations in the nation-wide network would carry out such vital functions.

i) Increase of students, scholars and teaching staff in universities have led to increase in the user population of the university libraries. Due to the increase in users' demand for diversified information, the libraries are prompted to investigate ways and means for wider range of services and collections. Resource sharing offers practical solutions to these problems.

j) Users in the libraries have become more and more information-conscious and demanding of more effective, quality library services. The very concept of library has undergone a great transformation. Free flow and availability of information is the user's need. The CAI (Current Awareness of Information) and SDI (Selective Dissemination of Information) repackaging would not be possible unless libraries share resources. Also, disciplinary inter-dependence calls for diverse collections of the variety of disciplines, which is not within the capacities and competence of a single library.

k) Increase in publishing output necessitates large intake in libraries to update their collection. This needs a large space to house the collections. Obsolescence of knowledge also calls for weeding of collection. Co-operative acquisition, storage and services can eliminate the problems of space, balanced collection building, efficient services, etc.

l) Research institutions, universities, industrial and commercial organisations and other academic institutions are responsible for knowledge generation. India, nearly accounting for 15% of world's population (850 millions as per 1991 Census) barely accounts for 3% of the world's book titles. (Total number of titles published worldwide in 1993 is 8,63,000 as per UNESCO Statistical YearBook 1993). To overcome this problem, resource sharing offers a practical solution.

13.3 RESOURCE SHARING - OBJECTIVES, DIMENSIONS, MODELS AND PLANNING

The goal of a librarian has always been to have access to more documents through buying. As time progressed, there has been a shift in the objectives of a librarian. The accent is still on gaining access to more documents; but, the onus has shifted to possession by sharing with other libraries, rather than outright purchase.

13.3.1 Objectives of Resource Sharing

The underlying principle of resource sharing and networking is to provide maximum services at minimum cost. The main objective of resource sharing is to create an environment

in which libraries can offer better services and meet user needs within available limited resources.

Broadly speaking, Resource Sharing includes all of the materials, functions and services. Materials and functions include reading materials of all types, their acquisition, cataloguing, storage and preservation. Services include all the techniques employed in libraries to establish a link between the reader and the reading material. Inter Library Loan and book exchanges also fall into this.

The term resource sharing implies more sustained all-round operation among libraries. If libraries are to succeed in their mission and supply what is rather than offer only what they have, resource sharing is essential. Resource sharing provides the means to strengthen library services, aid in cost effectiveness and provides the user with expanded access to collections held by others.

13.3.2 Dimensions of Resource Sharing

Although there is no deadline regarding the resource sharing activities, there are a number of dimensions to resource sharing. These can be classified as under:

1) Functions to be performed: a) acquisition, b) processing, c) storage, d) ref
   e) delivery
2) Type of library (ex: public, school, college, special)
3) Subject matter (ex: medicine, chemistry, social sciences)
4) Type of material (ex: bibliographic, data bases, journals, books)
5) Form of material (ex: print, nonprint)
6) Means of financing
7) Degree of automation
8) Tax status (profit Vs. nonprofit)

13.3.3 Models of Resource Sharing

There are four models of resource sharing in vogue today. They are i) bilateral exchange model, ii) pooling model, iii) dual service model and iv) service-centre model.

In the Bilateral Exchange Model, materials are exchanged between two participating libraries. In practice, where such an exchange is found, the exchange rate is usually calculated upon a proportional basis, according to some agreed-upon value (e.g. one for one, two for one).

The second model is a multilateral development of the first, and can be called, for convenience, the Pooling Model. In this model, more than two libraries contribute to and draw from a pool of materials.

The third model is called Dual-Service Model. It is one in which two or more participating libraries take advantage of the facilities of one of the participants to produce a common output - for instance, a union list. The term "dual-service" is proposed both to distinguish this model from the next, and to emphasize the fact that all participants, including the facilitator, contribute to the common output.

The last model is known as the Service Centre Model. The model is one in which a number of libraries employ the services of a facilitating participant to input and process

materials for individual purposes rather than to the end of a common output. Hence, it is service-centre model. While the facilitator may be merely a service bureau, and not the model holds under the pricing conditions which will

13.4.2 Co-operative Acquisition and Processing

Most of the libraries spend their valuable time, money and efforts on acquisition of materials. It is here that a great deal of co-operation is possible. This is because, the procurement procedures are uniformly similar among the most of the libraries.

So, when a Co-operative Acquisition program is put into action, the individual libraries save a lot of precious time and money. Consequently, duplicate acquisitions can be automatically avoided. Decisions can be taken on which library will specialise in which subject. Then, each library will endeavour to build its collection so as to be strong in the selected subject. Normally, the subject is chosen according to the academic curriculum of a University. Though only one Library acquires material on one subject, the identification of the material will be done by all the Libraries in the programme, according to their requirements.

The Farmington Plan and the Midwestern Inter-Library Centre (MILC) in the USA, as well as the Deutsche Forschungewierschaft in Germany are the most well-known examples of useful and effective programs of Co- Operative Acquisition.

The Farmington Plan is a successful co-operative venture in acquisition and is limited to acquiring books and publications from overseas.

The MILC in U.S.A. is a co-operative exercise in not only acquisition but also in storage. It has been remarkably cost-effective.

Next to the acquisition of material, another phase of library operations which involves time and expenditure, is processing of material. Computers and other automated processes can be used to meet their cataloguing needs of books. Even pre-publication and pre-natal cataloguing should be considered for improvement of library facilities.

Till recently, centralised cataloguing and processing work was thought of as not feasible in the special libraries as they are diversified in subject and location. But now, the situation has changed with the use of computers and copying machines, the technical processes involving preparation of Catalogues and bibliographies is now possible..

13.4.3 Co-operative Storage

Publications have been increasing in number, far beyond practical limits of easy storage. This has been happening with respect to publications on every subject and in every discipline.

Storage costs money. Co-operative storage would result in economy of space and money. It would also keep track of catalogue entries and help avoid duplication. The concept of co-operative storage can be put into practice at least in respect of less frequently used material like certain books and back volumes of serials.

Photocopies of extracts of these stored material can be made available at various individual libraries to meet the more urgent needs of the readers. Needless to mention, the cost of such a storage system may be shared by all the participating libraries.

In 1949, ten university libraries in the United States of America got together and organised the Mid-Western Inter Library Centre (MILC) with the purpose of increasing library resources of the member institutions.

The first storage library in India was established in 1974 at the Inter Library Resources Centre in New Delhi, under the patronage of the Indian Council of Social Science Research (ICSSR). Back Issues of periodicals make up the bulk of the collection at the

repository. However, the concept has not yet caught up with the imagination of the library professionals in India.

13.4. 4 Union Catalogues

For a satisfactory resource sharing program, it is most essential that each partcipating librarian should know the resources available with the other libraries. In short, the Union Catalogue should be readily available with each participant library. A Union Catalogue is the most useful location tool with a librarian participating in a Inter-Library Loan Program.

Such Union Catalogues could be prepared and updated periodically, say once every quarter. It is also important to note that a Union Catalogue is different from a collective catalogue. A Collective Catalogue is simply a collection of the catalogues of all the libraries, one after another. It may include duplicate entry for the same book, if it is available with more than one library. However, in a Union Catalogue, all the titles held by all the libraries, are listed in an alphabetical order, showing the location of the same.

A well prepared Union Catalogue serves many useful purposes as listed here:

a) A Union Catalogue shows at a glance, the total document resources of the libraries participating in a lending program.

b) A well prepared Union Catalogue serves as a major bibliography in its own right.

c) It helps in identifying the material to be discarded because of less or no use.

Regularly updated catalogues and supplements should be circulated to all the participating libraries, to enable the most effective exploitation of the common resources.

Due to the compilation of a Union Catalogue, compilation of bibliography and location of materials will be easier. The use of a computers will be most ideal for such activity, as regular revisions could be made cheaply.

The INSDOC made efforts to produce several Regional and local Union Catalogues of scientific and technical periodicals and serials. In fact, these Catalogues will eventually form the basis of the proposed National Union Catalogue.

Further, the National Social Science Documentation Centre (NASSDOC), New Delhi, under the Indian Council of Social Science Research (ICSSR), has also published a series of Union Catalogues in the field of Social Sciences, covering many major libraries in India. It is essential that there is a uniform practice in compilation of union catalogues.

13.4.5 Co-Operative Delivery of Services

In a regular Inter-Library Loan exercise, the required book moves from one library to another library. It is at this second library that the user receives the book from the librarian. This involves time and expenditure to the library establishments.

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13.4.6 Exchange of Personnel

Exchange of Personnel implies sharing of expertise. Most of the time, recruitment of an expert on permanent basis may be unnecessary. Such expertise may be required only for a short period.

Borrowing the services of an expert from another library would automatically enable the training of in-house staff. The exercise (such as a new concept in cataloguing) started by the expert can be easily carried on by the in-house staff later.

13.4.7 Clearing House Functions

Like in a banking system, clearing house functions would form a part of a successful Inter-Library Loan arrangement. For example, the special libraries in a city like Hyderabad may choose a well-established library like IICT/CCMB Library as a clearing house for the special libraries in and around Hyderabad. That would cover a large number of libraries in Hyderabad and the nearby districts. On the same lines, the NSTL Library in Visakhapatnam could be selected as the clearing house for the special libraries in and around Visakhapatnam.

13.4. 8 Translation Services

It is very useful to start a translation centre at atleast in one major special library in the state. For example, a library may receive a request for the loan of a book on a certain rare and historical aspect from a scholar in English. Let us hypothetically suppose that no book on that subject exists in that library, it could be passed on to another nearby library....<check>

13.5 RESOURCE SHARING AND NETWORKING ATTEMPTS AND PROGRAMMES

13.5.1 USA

As early as in April 1976, Library of Congress' Network Advisory Committee (NAC) attempted to explore ways in which a more cohesive nationwide system might be developed for sharing of bibliographic information.

OCLC (originally Ohio College Library Centre) is the largest library network in USA, established in 1967, and has a staff of 812 persons (as on 1987) is a non-profit organisation and supports resource sharing among more than 6,700 libraries in USA, besides countries in Europe, Saudi Arabia and Australia. Its union catalogue database contains 13 million records: some 30,000 records are added every week. With the steady growth of OCLC, there has been a progressive decline in the amount of original cataloguing to be done by the participating libraries. The system hit rate has increased from 66 percent in 1971 to 94 percent in 1983. It caters to several regional networks. The chief among these are, AMIGOS, ILLINET, NELINET, MIDLNET, WLC, FAUL, FEOLINK, MLC, etc.

In addition to these networks, there are certain other networks prevailing in USA, namely SOLINET, WLN, RLG, RLIN, CLASS, etc. to promote resource-sharing activities in USA.

WLN (1972) has a staff of 51 persons, provides, more than 250 libraries in seven states of USA, online computerised services to promote resource sharing and automated library functions. Its bibliographic file contains more than 3.5 million catalogue records.

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In 1978 RLG chose BALLOTS (Bibliographic Automation of Large Library Operation Using a Time Sharing System), a system developed in 1967 for the Stanford University Libraries, as its bibliographic processing system.

in which libraries can offer better services and meet user needs within available limited resources.

Broadly speaking, Resource Sharing includes all of the materials, functions and services. Materials and functions include reading materials of all types, their acquisition, cataloguing, storage and preservation. Services include all the techniques employed in libraries to establish a link between the reader and the reading material. Inter Library Loan and book exchanges also fall into this.

The term resource sharing implies more sustained all-round co-operation among libraries. If libraries are to succeed in their mission and supply what is needed, rather than offer only what they have, resource sharing is essential. Resource sharing provides the means to strengthen library services, aid in cost effectiveness and provide the user with expanded access to collections held by others.

13.3.2 Dimensions of Resource Sharing

Although there is no deadline regarding the resource sharing activities, yet there are a number of dimensions to resource sharing. These can be classified as under:

1) Functions to be performed: a) acquisition, b) processing, c) storage, d) reference, and e) delivery
2) Type of library (ex: public, school, college, special)
3) Subject matter (ex: medicine, chemistry, social sciences)
4) Type of material (ex: bibliographic, data bases, journals, books)
5) Form of material (ex: print, nonprint)
6) Means of financing
7) Degree of automation
8) Tax status (profit Vs. nonprofit)

13.3.3 Models of Resource Sharing

There are four models of resource sharing in vogue today. They are i) bilateral exchange model, ii) pooling model, iii) dual service model and iv) service-centre model.

In the Bilateral Exchange Model, materials are exchanged between two participating libraries. In practice, where such an exchange is found, the exchange rate is usually calculated upon a proportional basis, according to some agreed-upon value (e.g. one for one, two for one).

The second model is a multilateral development of the first, and can be called, for convenience, the Pooling Model. In this model, more than two libraries contribute to and draw from a pool of materials.

The third model is called Dual-Service Model. It is one in which two or more participating libraries take advantage of the facilities of one of the participants to produce a common output - for instance, a union list. The term "dual-service" is proposed both to distinguish this model from the next, and to emphasize the fact that all participants, including the facilitator, contribute to the common output.

The last model is known as the Service Centre Model. The model is one in which a number of libraries employ the services of a facilitating participant to input and process

materials for individual purposes rather than to the end of a common output. Hence, it is called the service-centre model. While the facilitator may be merely a service bureau, and not otherwise employ its own facilities, the model holds under the pricing conditions which will be stipulated for this type of co-operative.

13.3.4 Resource Sharing - Planning and Procedures

For the working of a successful resource sharing program, certain steps have to be taken and procedures developed and practised.

The first step would be to identify all the libraries subscribing to the program. Then, an authority to control the program is to be formed. Normally, this body is composed of members nominated by the member libraries.

To make a resource sharing program effective and realistic, ample funds are needed. These are normally provided by the State Government and the university Grants Commission and to some extent by the participating libraries.

It is important to identify what resources are to be pooled for the sharing program. It is more important to identify the resources which are not available for sharing. It is vital that shared and co-operative cataloguing of books should be undertaken. It is also absolutely vital that firm steps and procedures are established to ensure delivery and return of material in time.

13.3.5 Basic Agreements

There are several basic agreements among libraries that are important to develop if a resource sharing system is to be achieved.

First, obviously, is the agreement to share currently owned materials (i.e, to permit access to the holdings among partners) with protocols, limitations and priorities carefully spelled out. The agreement should provide for an independent administration of resource sharing, but one which does not emasculate the goals and missions of the co-operating libraries. Funding should be based on an obligation for long-term support to permit the benefits to develop; the financial agreement should permit individual libraries to withdraw, but constrained to avoid disturbance of the system.

Second, there should be agreement on acquisition policies, both to ensure consistent development of holdings and to avoid redundancy when this is judged jointly to be unproductive.

Third, there should be agreement on bibliographic control. Best is standardisation, so that users of each co-operating library may have a consistent means of accessing the catalogue of others. If standardisation is not feasible, then the second best is the provision of adequate training for users and/or access to the local reference staff to provide aid in locating materials.

Fourth, There should be an agreement on building up specialised collections in each participating library. A decision shall be taken jointly by the librarians whereby, each agrees to spend more money on building certain specialised collection and thereafter, sharing these collections with others.

Other necessary agreements include definition of loan periods and renewals, procedures for earlier return of materials if needed, payment for lost materials, preparation of union catalogues and other `house- keeping' (or book-keeping) chores.

Common protocols should be developed through agreement, to enable the smooth functioning of the sharing venture.

13.4 FORMS OF RESOURCE SHARING

Resource sharing can take various forms. Resource sharing can be found in the form of Inter-Library Loan, Co-Operative Acquisition, Co-operative Storage, Co-Operative Processing, Union Catalogue, Co-Operative Delivery of services, exchange of Personnel and Training facilities, Clearing House Funcitons, Technical Process, Translation Services, etc.

13.4.1 Inter-Library Loan

Reynolds defined Inter-Library Loan System as "It is a technique by which, one library lends its materials to any individual reader through another library".

Generally, a library and its borrower are directly related. Through an Inter-Library Loan, a library is related to its reader indirectly, through another library. By an indirect method, a library is broadening its readership. By the same indirect method, a reader is increasing his bibliographic reach.

Inter-Library Loan Service is the most important concept to be considered in a successful resource sharing venture. The success of a sharing venture depends largely on the efficiency, efficacy and speed of one participating librarian in lending to another participating librarian. Coming to physical entities, each participating library should possess at least one copying machine.

Though the participating libraries agree in principle, to share whatever material they have, this is not always possible in practice. Any restrictions and hindrances should be identified and ways and means be found, to over-come the same. Such overcoming of restrictions would result in a successful resource sharing / network through Inter-Library Loan.

There has been a steep increase in the cost of books and rates of subscription of serials. So, it is high time that the University Libraries think in terms of a concrete plan by which, if one Library purchases a very costly serial set like (Applied Mechanics Review), the other University Libraries in the state may be allowed to use them for a certain period of time. Inter-Library Loan among University Libraries is considered to be a very important step in the field of resource sharing.

Actually, the whole process of Inter-Library Loan transactions may be considered to be an ordinary clerk's job by many; but, an accomplished librarian is also involved in two important ways:

(a) to negotiate the request with the individual to ensure that the specifically requested document is necessary to fulfil his information requirement; and

(b) to verify the bibliographic citation to be sure that the document is indeed not available in the borrowing library and to forestall the necessity of professional help at the lending library having to iron out bibliographic problems.

The information explosion and the advances made in the technological arena have changed and broadened the concept and scope of Inter-Library Loan. At present, Inter-Library Loan includes computerised, tele-type and even fascimile equipment; data or reference networks; bibliographic networks; subject networks, etc.

It is apparent that the future of a library lies in Inter-Library Loan co-operation involving computerised library routines. Libraries represent information. In the near future, databases with bibliographic information will be common on the Inter-Library Loan circuit.

13.4.2 Co-operative Acquisition and Processing

Most of the libraries spend their valuable time, money and efforts on acquisition of materials. It is here that a great deal of co-operation is possible. This is because, the procurement procedures are uniformly similar among the most of the libraries.

So, when a Co-operative Acquisition program is put into action, the individual libraries save a lot of precious time and money. Consequently, duplicate acquisitions can be automatically avoided. Decisions can be taken on which library will specialise in which subject. Then, each library will endeavour to build its collection so as to be strong in the selected subject. Normally, the subject is chosen according to the academic curriculum of a University. Though only one Library acquires material on one subject, the identification of the material will be done by all the Libraries in the programme, according to their requirements.

The Farmington Plan and the Midwestern Inter-Library Centre (MILC) in the USA, as well as the Deutsche Forschungewierschaft in Germany are the most well-known examples of useful and effective programs of Co- Operative Acquisition.

The Farmington Plan is a successful co-operative venture in acquisition and is limited to acquiring books and publications from overseas.

The MILC in U.S.A. is a co-operative exercise in not only acquisition but also in storage. It has been remarkably cost-effective.

Next to the acquisition of material, another phase of library operations which involves time and expenditure, is processing of material. Computers and other automated processes can be used to meet their cataloguing needs of books. Even pre-publication and pre-natal cataloguing should be considered for improvement of library facilities.

Till recently, centralised cataloguing and processing work was thought of as not feasible in the special libraries as they are diversified in subject and location. But now, the situation has changed with tne use of computers and copying machines, the technical processes involving preparation of Catalogues and bibliographies is now possible..

13.4.3 Co-operative Storage

Publications have been increasing in number, far beyond practical limits of easy storage. This has been happening with respect to publications on every subject and in every discipline.

Storage costs money. Co-operative storage would result in economy of space and money. It would also keep track of catalogue entries and help avoid duplication. The concept of co-operative storage can be put into practice at least in respect of less frequently used material like certain books and back volumes of serials.

Photocopies of extracts of these stored material can be made available at various individual libraries to meet the more urgent needs of the readers. Needless to mention, the cost of such a storage system may be shared by all the participating libraries.

In 1949, ten university libraries in the United States of America got together and organised the Mid-Western Inter Library Centre (MILC) with the purpose of increasing library resources of the member institutions.

The first storage library in India was established in 1974 at the Inter Library Resources Centre in New Delhi, under the patronage of the Indian Council of Social Science Research (ICSSR). Back Issues of periodicals make up the bulk of the collection at the

repository. However, the concept has not yet caught up with the imagination of the library professionals in India.

13.4. 4 Union Catalogues

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13.5.2 UK

Janet (The UK Joint Academic Network) is a wide Area Network linking univerisities, polytechnics and research institutions. It was established in 1983 by the Universities' Joint Computer Board.

A Joint Academic Library Network (JANET), an integrated, private, academic network linking all UK Universities was developed in UK superseding all earlier regional networks.

Peter Stone made another survey on JANET respondents were asked if and how they used the network both to access other Online Public Access Catalogues (OPAC) to send E-mail. The OPAC of 15 universities were connected to JANET. There was little use of the network to send mail. Marie Parkes described the installation of a New Integrated Information Network with fibre optic data and telephone lines at Oxford University. The data networks allow easy inter-connection to a large number of asynchronus terminals, micro computers, and host computers scattered among the University buildings. The data network is used by University Library automation programme. May Katzen reported that the University of Leicester organised an information service on humanities through online Bulletin Board available on the JANET.

The studies on library networks in UK indicate that Joint Academic Library Network (JANET) is the major network connecting the libraries of Universities and polytechnics. Its services include ILL, OPACs, E-Mail, electronic bulletin Boards, etc.

Library resource sharing networks are also available in Netherlands, Australia, Africa, and the Arab World.

13.5.3 South-East Asian Countries

The IFLA / UNESCO seminar on Resource Sharing of Libraries in developing countries in 1977 at Antwerp University made some proposals for the South East Asian University Libraries Network (SAULNET). The ASEAN University Librarians favoured for regional co-operation in the creation of a union list of serials and IL lending, periodical network models are also outlined for SAULNET by Lim Huck Tee.

The national libraries of the South-east Asian countries, namely, Japan, China, Indonesia, Malaysia, the Philippines, Singapore and Thailand have shown great initiation to develop a co-operative resource sharing network in the region.

The Congress of South-east Asian Libraries (CONSAL) has suggested two important co-operative programmes, namely the National Libraries and Documentation Centres Consortium of South-east Asia (NLDC-SEA) and International Serial Data System - South-east Asia (ISDS-SEA).

13.6 RESOURCE SHARING AND NETWORKING IN INDIA

13.6.1 Recommendations of Various Committees

The Report of the Library Committee of the UGC under the Chairmanship of Dr.S.R.Ranganathan submitted in 1959 and published in 1965 recommended:

a. Local, Regional and National co-ordination of book selection, subscription to learned periodicals, and acquisition of back volumes of periodicals, among the libraries:

b. Co-operation in the fullest use of the holdings in the several libraries through a scheme of liberal inter library loan: and

c. Production and continued maintenance of Union Catalogues of learned periodicals. select treatises in foreign languages other than English, and rare books of research value for the holdings of the libraries, in the field of social sciences and humanities by a public agency like the INSDOC for natural sciences.

The Sinha Committee Report of 1959, which was mainly concerned with the public library system in the country, touched on the issue by recommending that "the University Library should co-operate with the Public Library system by

a) issuing book lists on subjects of interest to certain groups in the public:

b) admitting as regular members the more serious/minded readers among the public: and

c) perform reference functions of the State Central Library where these libraries are not yet established".

BOSLA (Bombay Science Librarians' Association) established by Sri V.A.Kamath in 1975 is the fore runner of information networks in India.

The main objectives of Bosla were to provide document delivery through regular courier service and to render cooperation in the acquisition of books and periodicals, reprographic services, compilation of computerised catalogue, manpower exchange, etc.

The BOSLA experiment has proved to be a very successful venture and is still continuing. It has become a source of inspiration for the establishment of several such networks across the length and breadth of the country. NISSAT is a national information Network. UNESCO experts have assisted in the establishment of NISSAT. It is an on-line remote data-base search system.

During the 7th Five Year Plan (1985-90) Planning Commission of Government of India appointed a working group under Dr.N.Seshagiri to study modernisation of library services and informatics. The report of the working group was submitted in July, 1984, in which it recommended the inter-linking of the library systems.

The Government of India appointed another Committee in November 1986 under the Chairmanship of Prof.D.P.Chattopadhyay to evolve a programme of action for implementing the national policy on library and information systems. The Committee submitted its report in May 1988 which has emphasised the need for resource sharing of Universities, colleges and research organisations in a region / State by linking all such organisations and networking. It has further recommended to set up a committee to identify the institutions and disciplines which can be brought under a national network for sharing resources.

In India, there are several state-of-the-art communication and information/ library networks in operation. They are INFLIBNET, HELLIS, PSDN, ERNET, INDONET, NICNET, PUNENET, DELNET, CALIBNET, MALIBNET, HYLIBNET, SIRNET, INET, INTERNET, VIKRAM, INFOTEL, CSIRNET, DESINET, BTISNET, VIDYANET.

13.6.2 INFLIBNET Programme

Prof. Yash Pal, former Chairman of University Grants Commission, mooted the proposal of networking of libraries in the Universities, Colleges and in the R&D Institutions in India. The outcome is a detailed report on automation and networking of libraries in India. He has named this network as Information & Library Network (INFLIBNET).

INFLIBNET, the brainchild of UGC, was launched in May 1991, to establish a national computer - communication network to link libraries and information centres in universities, colleges, deemed universities, UGC Information Centres, institutions of national importance, R&D institutions, etc.

INFLIBNET is planned to provide the following services:

a) catalogue-based services

b) database services

c) document supply service

d) collection development

e) communication based services like E-mail, Bulletin Board, etc.;

On April 2, 1993, Prof. G.Ram Reddy, Chairman of the University Grants Commission formally declared commencement of the First Phase of INFLIBNET Programme.

The National Centre of INFLIBNET is located in Gujarat University Campus at Ahmedabad. INFLIBNET is a major national effort to improve information transfer and access, as a support to scholarship, learning, research and academic pursuits. It will link up institutions of higher learning, covering all disciplines, R&D institutions and national organisations like CSIR, ICAR, DRDO, ICMR, ICSSR etc.

There would be a National Centre for managing, overseeing and co-ordinating the network administration and four regional centres which will maintain regional union catalogues apart from databases on projects, institutions and specialists.

At the sectoral level, UGC's Information centres and NISSAT Sectoral Centres or those performing national level functions/services in specific subjects/ disciplines/ missions will be included. The end-users will be served locally through the information centres of the respective colleges, departments, universities or R&D institutions.

13.6.3 Major Metropolitan Library Networks

1) CALIBNET

Established on the lines of the successful BOSLA in Bombay, Calibnet is a metropolitan network linking 38 libraries in Calcutta metropolitan area. E-Mail, file transfer, remote log-on and database and documents access are in the applications package within individual libraries, the functions to be automated are cataloging, serials control, acquisition and fund accounting, circulation and local user services. The networking provides for global user services of current awarness, SDI, Union catalogues, partial databases, and access to national and international networks. CALIBNET was inaugurated on 21st December, 1993.

2) DELNET

DELNET was inspired by the concept of CALIBNET. DELNET links 42 libraries in the metropolitan area of Delhi. The entire applications package available in CALIBNET is available with DELNET also. DELNET was inaugurated on February 21, 1994.

3) MALIBNET

The library networks functioning at the other metro cities have inspired the establishment of MALIBNET in the city of Madras. On the lines of BOSLA, door-delivery of document copies and material on Inter-library loan is a luxury for the members of MALIBNET.

MALIBNET is still under the Ist phase of development. The project envisages four phases for total implementation.

4) HYLIBNET

HYLIBNET is an ambitious plan for interlinking the various libraries in the twin cities of Hyderabad & Secunderabad - a total of 46 Academic & Special Libraries. The Union Catalogue of Journals has already been prepared. Major steps are yet to be taken.

13.7 LET US SUM UP

Though the practice of resource sharing is as old as librarianship itself, it came to light and exposed due to information explosion, shrinking budgetary allocations and increased usage of information technology in libraries. The concepts of inter-library loan, union catalogues, co-operative acquisition, co-operative cataloguing, etc. are based on resource sharing and lead to library economy. Library networking as a means of resource sharing has its beginning in late 70's and developed during the 1980s. There is no wonder that libraries in all countries in the world have adopted one form or the other of networking.

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13.9 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) What is Resource Sharing? Discuss its objectives and need, with reference to special libraries.

2) List out the various forms of Resource Sharing and explain each one them briefly.

3) Describe the Resource Sharing activities and programmes in various countries.

II SHORT NOTES

a) DELNET

b) Electronic ILL

c) Cooperative Storage

BLOCK-IV : ORGANISATIONS PROMOTING SPECIAL LIBRARIES

Information has been recognised as a vital resource in the process of socio-economic development of a nation. It is considered to be the fifth factor vital for production, the other four being the conventional factors, namely, labour, land, capital and organisation. Information has been playing an important role in planning and policy-making, and also in decision-making process. Therefore, developed and developing countries and the organisations therein are giving much importance to develop information infrastructures and promoting libraries and information centres. In India, the central and state government ministres/ departments have set up organisations and councils in specialised subject areas, like DRDO, DST, CSIR, ICMR, ICSSR and ICHR to promote R&D activity. These organisations have set up good libraries and information centres.

In addition to governmental organisations, we have organisations and professional bodies at the international and national levels, such as FID, SLA, ASLIB and IASLIC which have been extending their support in resolving the problems faced by the profession, creating forums to share their experiences and exchange ideas through seminars and symposia.

Unit-14 provides an overview of the Organisations promoting the Special Libraries and Information Centres in India. The ministries and departments of the central and state governments have set up good libraries and information centres in various units functioning under their purview. The unit describes some of the major organisations and the LICs and working under them.

Unit-15 discusses the Role of Professional Bodies in the Promotion of Special Libraries and Information Centres. The International Federation for Information and Documentation (FD), Special Libraries Association (SLA), Association of Information Management (ASLIB) and Indian Association of Special Libraries and Information Centres (IASLIC) have been explained.

Unit-16 is on Education and Training in Special Librarianship in India. Two important schools in India, which have been providing special courses of study/training, namely, Documentation Research and Training Centre (DRTC) and Indian National Scientific Documentation Centre (INSDOC) have been described. Short-Term packaged courses, which help in continuing education of the professionals in the use of Information Technology are also explained.

UNIT - 14 ORGANISATIONS PROMOTING SPECIAL LIBRARIES AND INFORMATION CENTRES IN INDIA

Structure

14.0 AIMS AND OBJECTIVES

In India, there are several organisations, besides Central and State governments, which have been promoting the special libraries and information centres. We have also information systems such as NISSAT, ENVIS and BTIS. This unit aims to provide an overview of the special libraries and information centres promoted under central and state governments and various organisations in India.

After studying this unit, you should be in a position to

- list out various organisation promoting the special libraries and information centres in India
- give details of the activities, services and publications of the major special libraries and information centres in India..

14.1 INTRODUCTION

Information is one of the key elements that distinguishes the highly developed societies of the world today from those that are still in the stage of development. The advancements in information and communication technologies are so rapid and the changes have heavy influence on the developed as well as developing countries of the world. The developments in the use of computers, telecommunications, microelectronics, printing and reprographic technologies have been thoroughly shaping the information services in the libraries and information centres. As a consequence to the growing demands from the users the traditional services are unable to meet them and the special libraries are forced to adopt new technologies and techniques. On the other hand a variety of new institutions are growing up to market the information services and products. Such developments can be directly witnessed in our country too. This unit aims to provide an overview of the activities of various organisations promoting in special libraries and information centres in India.

14.2 LIBRARIES AND INFORMATION CENTRES PROMOTED BY THE CENTRAL AND STATE GOVERNMENT DEPARTMENTS

Science and technology are the vital areas for the overall development of a nation. Research and development (R&D) occupies a very important place in the development process. It is now well established that new and improved knowledge in the form of products and processes developed through R&D activities contribute to the economic development. In any governments give priority for R&D activities by devising national policies, such as science policy, technology policy, information policy, etc. These policy frameworks directly or indirectly linked to the libraries and information centres (LICs). The LICs located in R&D organisations are required to be acquainted with the mission or goals as well as the plans, programmes and projects of the organisations. The goal is set within the basic policy framework provided in the Science Policy Resolution (1958) and the Technology Policy (1983) of the Government of India. To study the LICs in India. We may group them into four major divisions. They are i) Executive, ii) Judiciary, iii) Legislative, and iv) Constitutional Authorities.

The Executive Organ of the Centre Government consists of a number of ministries (Eg: Agriculture, Industry, Energy, etc.). If the scope of activities of a ministry is too large, it may be divided into several departments (Eg: In Ministry of Energy, we have two departments, namely, Power and Coal). Under each ministry/department, there are `Attached' and `Sub-ordinate' offices, where the execution of the policies of the government requires decentralisation. Attached offices are responsible executing the policies and programmes of the parent ministry/ department. They also function to provide advice on technical matters. Besides attached and sub-ordinate offices, several ministries/ departments have other categories of agencies under their purview. These are i) autonomous organisations/registered societies, ii) statutory bodies, and iii) public sector undertakings.

As regards the State governments and union territories, the major units of executive organs are the Departments. Each department consists of several directorates. The importance of information to support the developmental activities was felt by these administrators and hence, small to large size libraries or information centres were set up. Libraries were established to central and state secretariats to support the day-to-day administration, decision-making and planning activities at the national and state levels. (Eg: Central Secretariat Library, Sastri Bhavan, New Delhi and Secretariat Library of Andhra Pradesh at Hyderabad.

14.2.1 Libraries and Information Centres Promoted by Central Government Ministries/ Departments

The Science and Technology departments functioning under the Central government are mostly actively engaged in research and hence, they have established good library and information centres. In addition to government departments, we have good number of information centres functioning under various autonomous organisations and private sector units. Let us examine some the major departments and organiations promoting the special libraries and inoformation centres.

1) Department of Atomic Energy (DAE)

The DAE , set up in 1954, is the executive agency for implementing the atomic energy programme. The major Research and Development Centres include Bhaba Atomic Research Centre (BARC), at Trombay near Mumbai; Tata Institute of Fundamental Research (TIFR). Mumbai; Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam near Chennai; and Saha Institute of Nuclear Physics, Calcutta. BARC is the largest single scientific establishment in the country with R&D activity on the applications of atomic energy. The BARC Library is one of the largest S&T libraries in the country with over 8 lakh documents, nearly 7 lakh technical reports and 1700 periodicals in the field of nuclear science and related areas. Besides providing various information services to its scientific community of users, the library of BARC also acts as the input centre in India for INIS database. The TIFR Library has a collection of 80,000 documents and 830 current periodicals. Both the libraries are computerised.

2) Department of Space (DOS)

The Department of Space was created in 1972. The Indian Space Research Organisation (ISRO) is responsible for the planning, programming and management of R&D activities in the country in space science and technology and their applications. Besides ISRO, National Remote Sensing Agency (NRSA), Hyderabad; Physical Research Laboratory (PRL) at Ahmedabad and INSAT space segment projects also function under the aegis of DOS. The Vikram Sarabhai Space Centre (VSSC) at Tiruvananthapuram, SHAR Centre at Sriharikota, ISRO Satellite Applications Centre (ISAC) at Bangalore and Space Applications centre (SAC) at Ahmedabad are some of the most prominent centres of the DOS. These institutions have good libraries with a collection 50,000 - one lakh volumes and 500-1000 current periodicals, and providing various information services using computers.

3) Department of Biotechnology (DBT)

The DBT was set up under the Ministry of Science and Technology, Government of India. The Department has established the Biotechnology Information System (BTIS) with the main objective to serve as an information network for scientists and biotech corporation to have ready access to computer-based information in specific subject areas and to build-up expertise in this field. BTIS has been planned to function through NICNET. There are nine Distributed Information Centres (DICs) located in different parts of the country in the areas of Enzyme Engineering (Institute of Microbial Technology, Chandigarh), Genetic Engineering (IISc, Bangalore; Bose

Institute, Calcutta; JNU, New Delhi and MKU, Madhurai), Immunology (NII, New Delhi), Molecular Biology (CCMB, Hyderabad), Plant Tissue Culture, Plant Molecular Biology, Photosynthesis (IARI, New Delhi) and Virology and Animal Culture (Poona University, Pune). The Apex centre is located at the headquarters of DBT, New Delhi. At present two databases on Indian Patents and Indian Experts in Biotechnology are available through BTIS. (For detail refer Unit-12 of MLS-04: Information Programs & Systems).

4) Department of Environment (DOEn)

The DOEn was set by the Government in 1980 to serve as the focal point in the administrative structure of the Central Government for planning, promotion and coordination of environmental programmes. The Environment Information System (ENVIS) was set up with headquarters located in the DOEn, New Delhi and ten centres spread in different parts of the country. The activities of ENVIS include publication of Paryavaran Abstracts (Quarterly), building up a bibliographic database and to provide information services. (Refer also Unit-12 of MLS-04: Information Programs & Systems).

5) Department of Electronics (DOE)

The Government of India set up the DOE in 1970 and Electronics Commission in 1971, which formulates policies in the field to achieve an integrated and self-reliant base in the country. The DOE also coordinates and support various Electronics related activities and programmes - Centre for Development of Telematics (C-DOT), Centres for Electronic Design Technology (CEDT), Testing and Quality Control (STQC), Electronics Trade and Technology development Corporation (ET&T), Semiconductor Complex Limited (SCL), etc. The DOE has a good library with over 12000 volumes and subscribes to 400 current periodicals. It has a database called LIPS Information system and provides up-to-date information on licensing, collaboration projects, and item-wise and unit-wise production and export data.

6) Department of Ocean Development (DOD)

The Government of India established DOD in July 1981 for planning and co-ordinating oceanographic survey, research and development, management of ocean data and resources, development of manpower and marine technology. The major contribution of DOD is setting up the National Information System (NOIS) in 1989 with 13 data centres. The major centres include National Institute of Oceanography (Goa), Central Marine Fisheries Research Institute (Cochin) and Central Salt & Marine Chemicals Research Institute (Bhavnagar), etc. With the support of NISSAT, the Department has created a website, Gateway to Indian Ocean containing data 31 countries around the Indian Ocean. It contains the information about academic institutions with hyperlinks from 31 countries, about R&D institutions, NIO, Government departments, various programmes and funding agencies etc. The website is updated every 15 minutes.

7) Department of Scientific and Industrial Research (DSIR)

The DSIR is one of the largest units under the Central Government with 41 research laboratories spread all over the country. The Council of Scientific and Industrial Research (CSIR) is the major constituent unit of DSIR. INSDOC and National Science Library located at New Delhi provide information base and render various information services to the scientific community in the country. The NISSAT programme has been discussed in detail in Section 14.4.

8) Department of Science and Technology (DST)

The DST was set up in 1971 for promoting research in new areas of science and technology, coordinating multi-institutional and interdisciplinary activities in science and technology. A well equipped library at the headquarters of DST, located in Technology

14.3.2 DESIDOC

The Scientific Information Bureau (SIB) set up in 1958 was reorganised in 1967 as Defence Scientific Information and Documentation Centre (DESIDOC). It is functioning under the administrative and technical control of Defence Science Centre. In July 1970, DESIDOC was declared as a self-accounting unit and became one of the establishments under DRDO, headed by a Director.

1) Functions of DESIDOC

The functions of DESIDOC include providing information to the headquarters, the laboratories/establishments of DRDO and other agencies of the Ministry of Defence and coordinating scientific information programme in DRDO. It is responsible for developing a databank and an information system for defence science and technology. DESIDOC carries out R&D work in scientific information and provides training and consultancy services to TICs and other defence organisations. It also provides translation and reprographic facilities and publishes scientific and technical journals of DRDO including books and monographs.

2) Defence Science Library

DESIDOC has a well-equipped library called Defence Science Library. It functions as a Central Reference Library, representing all major disciplines of science and technology. Its collection includes books, bound volumes of periodicals, technical reports, standards/ specifications, reprints, microfilms, drawings and maps. Chemical Abstracts (1927 onwards), Philosophical Transactions of the Royal Society (1926 onwards), Flight International (1940 onwards), Interavia (1946 onwards), etc are the precious collection of the library. The reports collection comprises uptodate sets of NASA and RAND reports. A valuable set of BIOS and CIOS Reports on German and Japanese R&D in World War II is also available. A complete set of standards and specifications of BS, ASTM, IEEE, ASI, etc are available in microfilms. There are several cover-to-cover English translations of Russian journals. It has a well-organised reference collection and a rich material on military science and engineering.

3) Information Processing and Dissemination Division

Information Processing and Dissemination Division was formed in 1986 by merging the Documentation Division and the Computerisation of Information Group (CIG). A software package, called DRDO-IRS has been developed in-house, which is used for information retrieval and SDI service. The package provides from a single input, multiple outputs such as subject bibliography of input records, personal author index, corporate author index, descriptor with truncated title index (DWTT), document type index, and SDI.

Current awareness services of information processing and dissemination division are: R&D Digest (bimonthly), Reference Science Alerts (monthly), clippings from Indian newspapers. It provides translation facilities for the major languages such as Russian, German, French and Japanese. A Translation Bank has been set up to collect translations available in Defence R&D establishments and other civilian institutions such as BARC, CSIR, NAL, INSDOC, etc. Online searching of foreign databases through DIALOG Information Service was started in 1984. This service is used for retrospective searches as well as for conducting SDI service.

4) Publications of DESIDOC

The publications of DESIDOC include Defence Science Journal (Q), Popular Science and Technology (M), DESIDOC Bulletin (BM), DRDO Newsletter (M), etc. It has an in-house training programme to provide skills on emerging information technologies to the staff working in TICs of DRDO.

DESIDOC is now working on a network for Defence R&D laboratories/establishments named as Defence Science Information Network (DESINET).

14.4 NATIONAL INFORMATION SYSTEM IN SCIENCE AND TECHNOLOGY (NISSAT)

The National Information System for Science and Technology (NISSAT) was devised by Government of India on the advice of Dr.Peter Lazar who was sent to India by Unesco to advise the Indian Government on the establishment of NATIS. The NISSAT programme envisages promotion and support to the development of a compatible set of information systems on science and technology and interlinking of these into a network. The approach adopted was to bring existing centres, systems and services to a higher level of operations so that interests of a national community of information users could be served. The programme also contemplates experimentation with the introduction of modern information handling tools and techniques and development of endogenous capabilities for the purpose. During the seventh Five-Year Plan period a new programme of action has been designed and an allocation of Rs.4.5 crores has been received for the period of 1985-90. Since 1985, the responsibility of implementation of NISSAT programme has been given to the Department of Scientific and Industrial Research.

1) Sectoral Information Centres

The major instrument for information resources development and dissemination is a sectoral information centre, which provides bibliographic as well as factual and numeric information on a product, discipline or mission. The following eight sectoral centres have been established so far:

1) National Information Centre on Leather and Allied Industries (NICLAI) at Central Leather Research Institute (CLRI), Chennai

2) National Information Centre on Food Science and Technology (NICFOS) at Central Food Technological Research Institute (CFTRI), Mysore

3) National Information Centre on Machine Tools and Production Engineering (NIICMAP) at Central Machine Tools Research Institute (CMTRI), Bangalore

4) National Information Centre on Drugs and Pharmaceuticals (NICDAP) at Central Drugs Research Institute (CDRI), Lucknow

5) National Information Centre on Textiles and Allied Subjects (NICTAS) at Ahmedabad Textile Industry's Research Association (ATIRA), Ahmedabad

6) National Information Centre on Chemistry and Chemical Technology (NICHEM) at National Chemical Laboratory (NCL), Pune

7) National Information Centre on Management Sciences (NICMAN) at Indian Institute of Management (IIM), Ahmedabad

8) National Information Centre on Marine and Aquatic Sciences (NICMAS) at National Institute of Oceanography (NIO), Goa

9) National Information centre on Advanced Ceramics (NICCAC) at Central Glass and Ceramics Research Institute (CGCRI), Calcutta

10) National Information Centre on Bibliometrics at Indian National Scientific Documentation Centre (INSDOC), New Delhi

11) National Information Centre on Crystallography (NICRYS) at University of Madras, Chennai

12) National Information Centre on CD-ROM (NICCDROM) at National Aeronautical Laboratory (NAL), Bangalore

These sectors were, however, provided with a wide range of documents, sophisticated equipment and manpower so that they could provide information services on a national scale. They maintain an extensive collection of published and unpublished documents in the form of books, periodicals, research reports, development and trade reports, etc. pertaining to the relevant subject areas. Regular monthly technical publications from these centres include current Indian literature, patents highlights and industry highlights in respective sectors and also semi-technical and popular ones in the form of digests. Besides the centres have also brought out ad-hoc publications like Buyer's Guides, Directories of Agents, Research, foreign collaborations, etc. The centres have also developed information management tools like thesauri.

The sectoral centres have created and maintained several databases to cater to different information requirements of their clientele. Ex: NICMAP maintains bibliographic database, patents database, world machine tool statistics, Indian machine tool production statistics database and import/export statistics database.

NICCDROM has Library and Information Science Abstracts (LISA) database on CD-ROM version. Services being provided by these centres also include document supply, preparation of special bibliographies, patents search, reprography and micrography and industrial enquiry services.

In order to supplement the Science Citation Index (SCI) database, preparation of a National Citation Index has been conceived of at the National Centre for Bibliometrics (NCB), a project of NISSAT at INSDOC. The NCB, possibly in collaboration with DESIDOC and Indian Council of Medical Research (ICMR) would design a database initially with a set of about 300 Indian journal titles.

2) Information Analysis and Data Centres

Information analysis centres and data centres have been planned under NISSAT scheme for undertaking the task of acquiring, evaluating, integrating, condensing and analysing factual, and numeric information in contrast to sectoral centre which is expected to provide mainly bibliographic support in response to a query.

The first centre on crystallography was established at the Madras University. This is formerly known as National Information Centre for Crystallography (NICRYS). The centre obtains the global information on organic and orgaometallic compounds and generates services for the national community of users. For expanding activities of this centre, NISSAT, UGC and Madras University share the cost equally.

National Informaiton Centre on Advanced Ceramics (NICAC) was established in Central Glass and Ceramics Research Institute (CGCRI), Calcutta. The main objectives of this centre are to prepare and maintain a computerised database on superconducting ceramics, high-tech ceramics, optical metals, ceramic composites, etc.: to establish linkages with data centres on ceramics and related subjects in the rest of the world; and to generate and provide information services on the subject, etc.

3) National Union Catalogue of Scientific Serials in India (NUCSSI)

In view of the importance of the NUCSSI as an access tool to support various information programmes, NISSAT has incorporated a plan of action with regards to updating and maintenance of NUCSSI database. The NUCSSI data will be converted into a database form as to make it appropriate for online search, production of secondary databases, namely, holdings of

libraries in specific regions, institutions, subject areas, etc., would be made available on floppies for use. It has completed to load NUCSSI database on INDONET, NICNET, etc for online search and retrieval.

4) Online and SDI Services

In order to bring the information support services available to the scientists and technologists in India at par with those available to their counterparts in the developed countries, NISSAT has taken up the establishment of online search facilities on permanent basis in the country. Five regional access centres were established at INSDOC (New Delhi), National Chemical Laboratory (NCL, Pune), National Aeronautical Laboratory (NAL, Bangalore), Central Leather Research Institute (CLRI, Madras), Indian Association for Cultivation of Science (IACS, Calcutta). As per the plan these centres will be linked with international data centres through INDONET and NICNET facilities.

5) Library Networking

NISSAT has taken the initiative for the development of library networks to ensure better utilisation of scientific and technical information resources through resource sharing, to moderate functional load of information centre management and to take care of motivational factors to a large extent by better means of communication. The CMC Limited, Calcutta, has taken the responsibility of preparing the feasibility study for the CALIBNET on similar lines of DELNET.

6) Computer-based Bibliographic Information

NISSAT has given high priority for all aspects of computer based bibliographic information processing. NISSAT has acquired a proven software package, ISIS - Micro version, from Unesco. This package has already been distributed to about 250 non-profit institutions in India. A number of training courses on application of this package in Indian libraries and information centres were conducted in various regions. NISSAT Secretariat has now acquired the VAX version of this package, tested and distributed to five institutions.

In order to get feedback on application of this package, Users' Group meetings were organised. It has been observed that various kinds of applications of this package, however, none had really taken a total approach to library automation. NISSAT, therefore, took the initiative of adopting a library for conducting an experiment on a total automated system with turnkey concept (including data capture and entry, software development, etc). In this CDS/ISIS mini/micro version is being used with PASCAL for interfacing programmes.

7) Manpower Development

With a view to improving upon and update the skills of the information professional on a continuing basis, NISSAT has been organising short-term courses regularly. NISSAT provided support to DRTC (Bangalore) and INSDOC (New Delhi) to conduct 6-week courses on subjects like programming with library applications, library automation, computerised information retrieval, computerised vocabulary control design, etc. These courses provide a background knowledge in library systems analysis, computer programming in the use of software for proven capabilities. NISSAT centres at various CSIR laboratories are also providing courses on CDS/ISIS and computer applications.

Indian Library Association (ILA) has been conducting NISSAT workshops on computer applications to library and information activities. Besides these, various universities like University of Poona, North-Eastern Hill University (Shillong), etc have been organising courses on CDS/ISIS.

NISSAT has also initiated action on the generation of INDIMARC an implementation manual for common communication format. This manual would aid the professionals to create machine-readable bibliographic records. This would also aid standardisation of MARC records generated or proposed to be generated by several participant organisations in NISSAT's intra-city networks.

8) Studies, Directories, etc.

NISSAT in its Seventh Plan projections, has a major programme of promoting and supporting basic and applied research in information science. It is to take up initiatives for conducting studies and evolving methodologies /tools for information science as a subject for granting research fellowships.

Languages using Devanagri (Sanskrit) script are increasingly being used for library. scientific and technical and office communication. A project has been launched to adopt the CDS/ISIS microversion to handle Devanagri script.

NISSAT has initiated a study "the marketability of information products in India".

9) Publications

The publications of NISSAT include -

1) Online Services - A concept test cum feasibility study
2) Rationalising Serial Holdings in Special Libraries
3) Storage and Preservation of Microforms
4) Union catalogue of cover-to-cover translated periodicals
5) Machine Translation (A state-of-the-art report on the technology, multi-disciplinary expertise required in computer science, linguistics, phonetics and translation)

10) International Activities

The activities of ASTINFO (Regional Network for the Exchange of Information and Experiences in Asia and the Pacific) of Unesco are closely coordinated with those of NISSAT. The NISSAT Advisory Committee also functions as the National Advisory Committee of UNISIST and the National Advisory Group for ASTINFO. NISSAT has been approached by Unesco to prepare a standard course material for training of information scientists on marketing concepts.

NISSAT in cooperation with the Society for Information Science (SIS) has taken up the publication of NISSAT Newsletter. The newsletter covers wide ranging issues relating to information and the development of information networks and centres.

14.5 INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)

The Indian Council of Agricultural Research (ICAR) was set up in July 1929 as a registered society under the Indian Societies Registration Act, 1860. The main objectives of the Council are -

1) To undertake, aid, promote and coordinate agricultural, animal husbandry and fisheries education, research and its application in practice, development and marketing by all means calculated to increase scientific knowledge on the subjects and to ensure its adoption in everyday practice;

2) To act as a clearinghouse of information not only in regard to research but also in regard to agricultural and veterinary matters generally;

3) To establish and maintain a reference and research library in pursuance of the objectives of the Council; and

4) To do such other things as the Council may consider necessary or conducive to the attainment of the above objectives.

The ICAR is the apex organisation of all agricultural and animal husbandry research and education in the country. There are at present 44 research institutions including the three institutes of national importance under the Council dealing with various aspects of research and education. To intensify cooperation on multi-location-cum-disciplinary basis, with the cooperation of the central and state research organisations, for all India coordinated research projects, including 8 project directorates and 19 national research centres have been started. In addition, 26 agricultural universities which have functional linkages with the Council have also come into existence in various states. The ICAR sponsored, Krishi Vignan Kendras, have undertaken operational research projects and launched a massive lab-to-land programme for the transfer of appropriate technology.

14.5.1 Organisational Set-up of ICAR

The ICAR has been reorganised in 1965 to make it a compact body reflecting its scientific character. The Union Minister for Agriculture is the President of the Council and the Minister of State is the Vice-President. The Society is assisted in its task by a governing body consisting of members of Parliament, eminent scientists, vice-chancellors of a few agricultural universities, some directors of ICAR institutes, Secretary of the GOI in the Ministry of Finance, Planning, Department of Agriculture and also the chairman of UGC. The governing body assists them in the formulating policies of the Council, scrutinises and approves the research programmes and projects and controls the budget of the Council. The governing body, in turn, is assisted by the committees, such as Standing Finance Committee, Regional Committees of education and training, and the scientific panels of ICAR.

14.5.2 Agricultural Research Information Centre (ARIC)

Agricultural research has witnessed a rapid development in production technology and mechanisation in the recent years. A perceptible social transformation in rural life is slowly emerging as a result of technological innovation. To keep agricultural scientists abreast of the knowledge of the latest advancements in their respective fields and to draw benefits from the findings of research conducted elsewhere, a need for agricultural research information centre was felt. An effective information and documentation service is indispensable for scientific research. In pursuance of the objectives of the Council, a reference and research library was set up at the headquarters of the Council in the early thirties.

1) Establishment of ARIC

The Estimates Committee of the Parliament and the Indo-US Review Teams recommended in the early sixties that research information service be set up at the Council's headquarters. The ICAR established a current research information centre by creating the research project file unit at its headquarters in 1967. Subsequently, the Ministry of Agriculture, GOI. entrusted the word related to the International Information System for Agricultural Sciences (AGRIS) of FAO to the unit by designating it as the national AGRIS input centre in 1973 with the additional activities. The Council decided to rename it as Agricultural Research Information Centre (ARIC).

2) Collection

The guiding principle of acquisition policy is to acquire material which is not available in other libraries in Delhi. The NASSDOC has a rich collection of reference sources which include dictionaries, directories, encyclopedia, bibliographies, indexes, abstracts, etc. and books on library and information sciences.

The Centre receives 3000 titles of Indian and foreign journals (in the ratio of 1:1). Under Inter-library Resources Centre Programme, a collection of backfiles of about 1 lakh volumes of social science periodicals has been made.

3) Inter-Library Resource Centre (ILRC)

In Delhi, there are about 150 libraries, consisting of academic libraries, government libraries, research institutions libraries and public libraries. ICSSR, in collaboration with Jawaharlal Nehru University Library established Inter-Library Resources Centre (ILRC) in 1975. It invited local libraries to deposit backfiles of social science periodicals, newspapers and government documents with the Centre. The total number of periodicals volumes deposited so far exceed over 1 lakh.

4) Documentation Programmes

The Centre has three broad categories of documentation programmes; i) those undertaken directly or in collaboration with selected institutions; ii) those undertaken by ICSSR Regional Centres and ICSSR aided Research Institutions, and iii) those assisted by the Council under its Grants-in-Aid schemes.

5) Services

Information is mainly disseminated by NASSDOC through state-of-the-art reports, abstracting journals and NASSDOC serial and adhoc publications. ICSSR brings out periodically survey reports in various disciplines of social sciences. The library provides facilities to consult research materials to the bonafide scholars. About 10,000 scholars annually visit the library. NASSDOC provides consultancy services to institutions regarding planning for library, documentation and information services.

To provide back-up support to the bibliographical services, NASSDOC provides copies of research material from journals, books, theses, reports, etc to the scholars.

Through arrangement with other institutions and translators, NASSDOC provides translation facilities to researchers.

ICSSR has been publishing the following abstracting journals: i) ICSSR Journal of Abstracts and Reviews (Eg: economics, geography, etc); ii) Indian Psychological Abstracts; iii) ICSSR Research Abstracts Quarterly, iv) Indian Dissertation Abstracts.

NASSDOC also brings out 11 serial titles, disseminating information about its activities, services and programmes.

6) Continuing Education Programme

In order to keep in touch with the current developments and to develop specialised skills, the Centre has been organising short-term courses for the professionals in the area of social sciences.

7) New Initiatives

Automation of Services : It is intended to create computerised databases of research material and reference material in social science disciplines in libraries in India.

Research Projects Database : The aim is to set up a database of research projects in social sciences, completed and in progress, to avoid duplication and judicious utilisation of resources.

SDI Services : The compilation of interest profiles of scholars so as to provide selective dissemination of information services is being initiated.

Resource Sharing : With a view to conserve resources and put them to better use, a meeting of subject experts and library professionals in various disciplines is envisaged.

Microfilming of Research Material : Microfilming of theses, project reports and journals in order to solve the problems of space and preservation.

Research facilities to Scholars : Quick document delivery services are provided to the scholars through photocopying facilities and microfilm readers-printers

8) Future Programmes

The National Information System in Social Sciences (NISSS), planned by NASSDOC is of a multi-tier system with two main components, viz., NISSS Focal Point and NISSS Network of Information Centres and services. The major programmes would be -

1) Building comprehensive world collection of social science material by way of supplementing the national collections

2) Providing computerised retrospective and current indexing and abstracting services

3) Providing technical and socio-economic information to the researchers and administrators

4) Procuring copies of documents, on request, from whichever source available

5) Developing relations and cooperation with national and international organisations engaged in social science information.

NASSDOC has been planning to set up a computerised bibiographical database of social science material so as to provide literature search services at national and international level.

14.7 LET US SUM UP

Let us recapitulate briefly what has been discussed so far in this unit.

* Besides the Central and State Government Departments, there are several organisations in India promoting the special libraries and information centres.

* Since Research and Development occupies a vital place in the progress of the country, the Governments have been giving the priority for devising various national policies along with the infrastructural facilities along with the library and information services.

* To study the library and information services, the Government departments may be categorised as executive, judiciary, legislative and constitutional authorities. Most of the Central Government departments like Atomic Energy, Electronics, Science & Technology have good library facilities. While some departments like Biotechnology, Environment, Scientific and Industrial Research have gone beyond libraries and established national information systems (BTIS, ENVIS, NISSAT, etc.) in their fields.

* To meet the information requirements of Defence Research and Development Organisation (DRDO), i.e., mission-oriented, project-oriented and problem-oriented.

Technical Information Centres have been established in various defence establishments. TheDESIDOC is functioning from the Defence Science Centre, New Delhi.

14.8 REFERENCES AND RECOMMENDED READING

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14.9 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Describe the various special libraries and information centres promoted by the Central and State Governments in India.

2) Discuss the role of Indian Council of Medical Research (ICMR) and Indian Council of Agricultural Research (ICAR) in promoting the LICs.

II SHORT NOTES

a) Sectoral Information Centres of NISSAT

b) ENVIS

c) Parliament Library

UNIT - 15 : ROLE OF PROFESSIONAL BODIES IN THE PROMOTION OF SPECIAL LIBRARIES AND INFORMATION CENTRES

Structure

15.0 AIMS AND OBJECTIVES

This unit aims to provide an overview of various organisa-tions and professional bodies and their role in the promotion of special libraries and information centres.

After studying this unit, you should be in a position to

- list out various organisations and professional bodies, which have been promoting the special libraries and information centres through out the world
- describe the activities of FID, SLA, ASLIB and IASLIC, especially for the development of special libraries and information centres.

15.1 INTRODUCTION

Professional bodies are the backbones of any profession. The members of a profession join together for the recognition and fight unitedly for their rights. They help to sustain the growth and development of the profession. They contribute greatly for the spread of the professional knowledge.

They are a number of professional associations in the field of library and information science. Understanding the activities of the professional bodies help us to clarify the concept of LI services to the public. They provide a forum to bring together all persons engaged in LICs and exchange the ideas. The meetings or seminars at local, national and international levels not only help to discuss their technical problems but also help to share the latest developments in our profession. Thus, the professional bodies indirectly impart continuing and life-long education to their members. They can also take the role of an accrediting agency for maintaining proper standards of library education.

In the field of LIS there are a number of professional associations working at the international, national and local levels. In the following sections, we present you some of the prominent professional associations, namely, International Feder-ation for Information and Documentation (FID), Special Library Association (SLA), Association of Information Management (ASLIB) and Indian Association of Special Libraries and Information Centres (IASLIC). These professional associations have been contributing greatly towards the promotion of the special libraries.

15.2 INTERNATIONAL FEDERATION FOR INFORMATION AND DOCUMENTATION (FID)

The International Federation for Information and Documenta-tion (FID) is one of the earliest organisations in the field of documentation and information. The corporate statement of FID is "With a proud past, challenging the future".

15.2.1 The Origin of FID

Federation Internationale de Dokumentation (or International Federation of Documentation) owes its existence to two jurists, Henri La Fontaine (1854-1943) and Paul Otlet (1868-1944). They organised the conference, Bibliographique Internationale in Brussels during September 2-4, 1895, which resulted in the establishment of the Institute International de Bibliographie (IIB). In 1931, IIB changed its name to Institute International de Documentation (IID). The IID assumed the name International Federation of Documentation (FID) in 1935. The Federation had five foundation national members - Belgium, the Netherlands,

Germany, France and Switzerland. The Belgium Act conferred on it in 1959, the legal status of an international non-government organisation. The present nomenclature International Federation for Information and Documentation came in the year 1986 (though the abbreviation/acronym remained as FID).

The idea of establishment of IIB in 1895 by La Fontaine and Otlet was prompted by their "belief in a single world of knowl-edge and the wish to have at hand in a world centre everything that has been devised, explored, discovered and invented by mankind".

It as an unsurmountable task for to private individuals to organise world knowledge in the form of a classified central card catalogue of the literature, illustrations and institutions of all countries, ages, and languages. In fact, the catalogue Reper-toire bibliographique universel had to be discontinued. However, the idea conceived by La Fontaine and Otlet has now become the object of research and activities of large number of national and international agencies since the World War II.

In another sense, they have been pioneer in the use of the term 'Documentation'. Although the name of IIB was changed to IID only in 1931, it was adopted as early as 1905, when Paul Otlet published the first book on this subject entitled, L'Organisation rationelle de l'information et de la documentation en matiere economique. It bestows an "identical meaning on informa-tion and documentation in order to express the whole of the field they cover".

15.2.2 Aims and Objectives of FID

The aim of FID is to promote through international coopera-tion, research in development of documentation which includes, inter alia, the organisation, storage, retrieval, dissemination and evaluation of information.

The specific aims of FID are

- to advance the frontiers of science and technology
- to improve competitiveness of business, industry and national economies,
- to strengthen possibilities for development and enhance the quality of life wherever possible,
- to improve the ability of decision-makers to make appropriate decisions,
- to stimulate educational strategies and life-long learning
- to make expression possible in all sectors of the Informa-tion Society including the arts and humanities and will strive and continue to be at the leading edge of the development of the management of information.

FID provides a world forum for the exchange of ideas and experience and the opportunity for interested organisations and individuals to coordinate their efforts.

15.2.3 Organisation of FID

There are over 70 national and international members and approximately 300 institutional and personal affiliates from about 90 countries. National membership is limited to only one institution in a country. Other institutions and individuals are encouraged to become affiliates. All members and affiliates are encouraged to be active in the FID programmes and to participate in the work of the relevant committees. In addition to its inter-national members, FID has consultative status with several other inter-government organisation, eg: Unesco, ISO, FAO, UNIDO, IFLA. A large number of these, above all, Unesco, have bestowed consul-tative status on it.

The governing bodies of the FID are -

i) the General Assembly,

ii) the Council, and

iii) the Executive Committee.

The highest authority is the General Assembly which meets every two years. The Council includes - the President, 3 Vice-Presidents, a Treasurer, 12 Counsellors, and the Secretary General.

Since 1980 the FID Secretariat is housed at Royal Library (Koninklijke Bibliotheek) of the Netherlands located at the Hague. The Royal Library is the National Member of FID for the Netherlands. The Secretariat serves as the administrative and organisational headquarters for the FID including a permanent secretariat for the work on the UDC.

In order to carry out several programmes, the FID has appointed regional commissions and committees, task forces and panels.

The commissions of FID are -

FID/CLA	Commission for Latin America
FID/CAO	Commission for Asia and Oceania
FID/CAF	Commission for Western, Eastern and Southern Africa
FID/NANE	Commission for North Africa and the Near East
FID/CNA	Commission for the Caribbean and North America
FID/ROE	FID Regional Organisation for Europe

There are task forces, committees and special interest groups in the organisation of FID activities. These groups pro-vide a true network of subject expertise within FID. Committees and SIGs form a permanent structure for the subject areas. SIGs are set up to deal with subjects when necessary. Groups can be set up quickly and can be disbanded by the FID Council when there is no longer a need.

The following are the study committees of FID :

FID/CR	Classification Research for Knowledge Organisation (Secretariat: Denmark)
FID/ET	Education and Training (Secretariat: Poland; From 1973 FRG)
FID/FT	Fundamental Theory of Information (Secretariat: Soviet Union)
FID/II	Information for Industry (Secretariat: Denmark)
FID/IP	Infostructures and Policies
FID/IPI	Intellectual Property Issues

The Special Interest Groups of FID are -

FID/ARM	Archives and Records Management
FID/BFI	Banking, Finance and Insurance Information
FID/BI	Business Intelligence
FID/ET	Environmental Information
FID/MIP	Roles, Careers and Development of the Modern Information Professional
FID/SCRM	Safety Control and Risk Management

The highest organ of the FID is the General Assembly, which meets at least once every years. It elects a Council consisting of 17 to 19 members who implement the FID's policy and programme.

15.2.3 FID Activities

The activities of FID can be divided into, on the one hand as scientific and methodological tasks, and on the other hand as applied tasks.

I The scientific and methodological tasks of FID are -

a) Study formulated and non-formulated, conventional and non-conventional methods and means of communication, and make recommendations for their improvement.

b) Study the information needs of users of information, and develop programmes for better means of both meeting these needs and testing to validate the improved methods.

c) Define the criteria and techniques for the evaluation of the effectiveness of documentation work of all kinds.

d) Further improve the UDC and develop other retrieval languages designed for documentation research

e) Study and elaborate principles of data compilation, proc-essing, storage, search, retrieval transmission

f) Elaborate better methods for the preparation of analytical (synthetic) information reviews.

g) Elaborate the theoretical and methodological bases for documentation and define its principal terminology

h) Identify the main research trends in documentation, and promote them and their coordination at the international level.

II The Applied tasks of FID are -

a) Help in setting up information activities and establishing documentation centres in countries where they do not exist, and assisting in the development of existing centres

b) Encourage the establishment of information analysis centres, especially in the presently more rapidly progressing fields of science and technology

c) Promote the training of documentalists at all levels of accomplishment, especially in developing countries

d) Promote the education of documentation users in the efficient utilisation of documentation services

e) Publish and promote the publication manuals, textbooks, and other materials for general and specialised training of documen-talists and users of documentation.

f) Organise, on a regular basis, international conferences on the most important problems of documentation.

g) Seek better cooperation with other international organisa-tions in the field of documentation.

15.2.4 FID Programmes

FID has taken up many programmes with an aim of promoting research in and development of information and documentation.

(1) Universal Decimal Classification (UDC)

FID offers several products and services both for its members and wider professional community. The most out-standing product of FID is the Universal Decimal Classification (UDC). FID is responsible for its revision from time to time. To deal with different subject fields, there are 31 international committees with hundreds of experts. These committees prepare revision proposals and also take into consideration proposals from various sources. These processes ensure that revision of the UDC is of high intellectual quality and meets all the needs of its users. All accepted revisions are published in the annual. Extensions and Corrections to the UDC.

The UDC editions are published in more than 20 languages. These may be in "full", "medium", "abridged" or "special subject" form. Full editions are available in ten languages. Future plan for UDC include development of a machine-readable version of the

classification scheme.

(2) International Information System on Research in Documen-tation (ISORID)

The ISORID is a joint Unesco/FID project. It is charged with collecting, organising, analysing, storing and disseminating information on research and development in the field of informa-tion, documentation, libraries and archival records management. Information on research is received and compiled by FID and is published in `R&D Projects in Documentation and Librarianship'. The main aim of ISORID is to provide referral service to persons or organisations undertaking research in specific subject areas.

(3) Major Programme Areas on FID's present Agenda

FID's Professional Programme is organised according to the following major programme areas: i) Professional Development, ii) Business, Finance and Industrial Information, iii) Information Policy, iv) Information Science, v) Applied Information Technolo-gy, vi) Information Processing and Products, and vii) Information Management.

15.2.5 India's Participation in FID's Activities

India became a national member of FID in 1952 and has the honour to be one of the oldest members from the Asia-Pacific region. India's association with FID happens to be much older than 1952. F.D.Duyvis invited Dr.S.R.Ranganathan to many FID meetings in the forties. Ranganathan's active participation resulted in his nomination as Rapporteur-General of the FID/CA Committee on General Theory of Classification (later reconstitut-ed as the FID/CR).

FID through the good offices ISO, suggested the formation of a national documentation committee in each country, including India. Such efforts ultimately resulted in the establishment of the Indian National Scientific Documentation Centre (INSDOC) in 1952. INSDOC represents India as the national member of FID. Ranganathan was one of the Vice-Presidents representing the Asian member nations for three terms (1953-1961). B.S.Kesavan was Vice-President from 1964 to 1966; S.Parthasarathy was on the FID Council from 1971 to 1974 and T.S.Rajagopalan has been elect-ed to the FID Council for the 1985-89 term. S.R.Ranganathan, A.Neelameghan and T.N.Rajan assumed various positions in FID committees.

The 49th FID Conference and Congress was hosted by INSDOC at Jaipur and New Delhi during 11-17 October 1998. The theme of the conference was "Towards the new Information Society of Tomorrow: Innovations, Challenges and Impact".

15.2.6 FID Publications

FID has an active monograph publications programme. It also publishes a number of serial publications. The newsletters publi-cations of FID are -

Archives and Records Management Newsletter
Banking, Finance and Insurance Information Newsletter
Classification Issues in Knowledge Organisation Newsletter
Document Delivery Survey
Education and Training Newsletter
Environmental Information Newsletter
Information for Industry Newsletter
International Forum on Information and Documentation
FID National Members Newsletter
FID News Service:Newsletter for Personal and Institutional Mem-bers
FID also brings out the following serial publications:
FID Bulletin
R & D Projects in Documentation and Librarianship (Bimonthly)
Extensions and Corrections to the UDC (Annual, cumulated every three years)
FID Directory (biennially)

15.3 SPECIAL LIBRARY ASSOCIATION (SLA)

The development of Special Librarianship in general, and Information Science in particular, from the practice of tradi-tional librarianship was facilitated by several profes-sional organisations of which the oldest one is the Special Library Association (SLA), established in the USA in 1909. The SLA is the third largest library and information science related associa-tion, the first two positions being occupied by American Library Association (ALA) and the Library Association UK).

15.3.1 Origin of SLA

Special Library Association was established on July 2, 1909 during the Annual Confer-ence of the ALA held at Bretton Woods (New Hampshire) primarily at the initiative of John Cotton Dana. Dana, himself a public librarian, made considerable efforts to develop special collections for the use of business community in the public libraries and encouraged their use. His work with a specific group of users made him to think about the impor-tance of establishing a separate professional association of the special librarians to promote the cause of special libraries.

The motto of SLA "Putting Knowledge to Work" reflects the role of special libraries. The main objective of SLA is to promote the interests of commercial, industrial, technical, civil, municipal and legislative libraries, and those of special departments of public libraries, welfare organisations and busi-ness organisations. During the nine decades of its existence, SLA had undergone many changes both in respect of its organisational structure and activities.

15.3.2 Membership and Organisation of SLA

The SLA is an international professional association that represents nearly 15,000 information resource experts who col-lect, analyze, evaluate, package, and disseminate information to facilitate accurate decision making. SLA's members are employed by corporations, private companies, government agencies, techni-cal and academic institutions, museums, medical facilities and information management consulting firms.

SLA's mission is to advance the leadership role of the special librarian/information professional in our information and knowledge-based society. SLA is committed to providing a variety of products and services designed to enhance its members' profes-sional skills.

The major units of the SLA include Chapters, Divisions and Caucuses. One of the Association's primary strengths lies in the effectiveness of its chapters, divisions, and caucuses in meeting the interests of SLA's diverse membership.

The activities of SLA are decentralisd and conducted by Chapters and Divisions. The Chapters are organised on a regional basis. The Chapters encourage the frequent interaction of mem-bers in the same geographical area. The Divisions were original-ly considered to represent subject interests (Eg: Pharmaceuti-cal Division, Social Science Division, Science-Technology Division). Some Divisions represent formats by which information is handled, some represent techniques (Eg: Newspaper Division). Membership in the Association provides primary affiliation with one chapter and one division. SLA's 56 chapters and 25 divisions provide networking opportunities throughout the world, as well as in a broad spectrum of specific subject specializations. Unlimit-ed extra affiliations are available at $15/year/additional affil-iation.

Chapter and Division affiliation facilitates peer interac-tion, provides opportunities to make contacts with others in a given field of specialization, builds problem-solving networks, and, therefore, offers a professional advantage. All SLA chapters and divisions publish newsletters, conduct meetings, and offer related activities. Some units also offer listservs and websites, and publish serials, directories, and monographs.

Unlike chapters and divisions, Caucuses are informal groups designed to promote the interaction of members who share a common interest. SLA's 13 caucuses offer additional networking opportu-nities for members at an additional cost of $12/year/caucus.

Each Chapter and Division has its own office and commit-tee to conduct its business. At the apex there are Chapter Cabinets and Division Cabinets. The chairmen of these Cabinets represented on the Board of Directors and conduct the activities at the national level and consists of the President, Treasurer, Chapter Cabinet Chairmen, Division Cabinet Chairmen and 10 Direc-tors (including past presidents and cabinet chairmen). The office bearers and the directors are elected by members of SLA. The Board is assisted by a number of SLA Committees. Eg: Annual Conference Programme Committee, Consultation Service Committee, Finance Committee, Scholarship Committee, etc.

15.3.3 Activities of SLA

The major activities of SLA include -

1) Professional Development

The Professional Development Programme provides continuing education courses to meet all levels of knowledge and experience. The Programmes include:

* Annual Conference courses
* Winter Education Conference
* Continuing Education courses
* Management Competencies Institute
* Knowledge Executive Institute
* Self-Study Programme
* State-of-the-Art Institute

2) Annual Conference and Exhibits

The annual conference offers more than 350 events, including educational programmes. thought-provoking round-table discussions, hands-on workshops, SLA's Annual Business Meeting, enlightening general sessions, local tours, and networking opportunities.

3) Public Relations

The Association promotes special librarianship by maintain-ing communication with the media to encourage the positive por-trayal of the information profession and the Association. The Public Relations Programme develops products for member use that promote the profession, including a public relations handbook, brochures, and an awards programme.

4) Government Relations

SLA's Government Relations Programme ensures that member interests are being protected. The programme provides frequent updates to members on pertinent issues in the governmental arena. both in the United States and Canada.

5) Research

The Research Program provides members survey data and re-search studies related to all facets of special librarianship and information management.

6) Information Resources Center

A specialized collection of materials consists of approxi-mately 3,000 current titles. 140 journals, and a management document collection. Each year the IRC responds to more than 4,000 requests for information from members, the general public. and Association staff.

7) Employment and Career Services

SLA's Employment and Career Services include the annual Employment Clearinghouse and Career Advisory Service, the Resume Evaluation Service. and the Online Job Search.

8) Scholarships and Awards

Each year the Association awards more than $30,000 in schol-arships for professional development and graduate study at ac-credited schools of library and information science Scholarships are available for study at both the master's and doctoral levels.

9) Student Networks

SLA student groups. located throughout the US and Canada. are affiliated with accredited graduate schools of LIS. In addi-tion to group meetings. the student group newsletter. Student Union, provides a unique communication tool

15.3.4 Publications

Publications of professional literature is another major function of SLA. The first professional journal, exclusively devoted to special libraries entitled, Special Libraries, related to the SLA. The other publications of SLA include:

Information Outlook (SLA's monthly magazine)

Who's Who in Special Libraries (annual membership directory)

SLA's renowned book publishing programme contributes to the growing literature available on management, reference tools, and technol-ogy in special libraries and information centers. Recent best sellers of include:

Internet and Special Librarians

Special Libraries : Increasing the Information Edge, and

Libraries and Copyright.

15.4.5 SLA Awards

SLA operates three awards, namely, Hall of Fame Award, SLA John Cotton Dana Award and Professional Awards. The awards are given every year to distinguished library and information specialists in recognition of their contributions towards the cause of special libraries.

15.4 ASSOCIATION FOR INFORMATION MANAGEMENT (ASLIB)

The Association for Information Management (ASLIB) is world class corporate membership organisation with over 2000 members in some 70 countries. ASLIB actively promotes best practice in the management of information resources, represents its members and lobbies on all aspects of the management of and legislation concerning information at local, national and international levels.

15.4.1 Origin of Aslib

ASLIB (formerly, Association of Special Libraries and Infor-mation Bureaus), established in 1924, was one of the earli-est associations come into existence and it has remained the principal focus in Great Britain of cooperative activity. Aslib can perhaps be the most readily distinguished by three characteristics - the, unusually wide range of services, which it offers to member organisations, especially those in indus-try; its pioneering of research into problems of documenta-tion; and the fact that, although constitutionally a British organisation, it has a wholly international character with over 20 percent of its 2000 members spread over 70 countries outside Great Britain.

Aslib has been instrumental in highlighting the importance of information in all spheres of national activities, particular-ly those relating to post-World War II reconstruction of the national economy. It obtained the recognition of Government as a research association. Aslib paved the way for the creation of the Office of Scientific and Technical Information (OSTI) in the Department of Education and Science. OSTI was responsible for the promotion of scientific and technical information activities and provided financial support for research in relevant areas. An explanatory conference held at Hoddesdon, Hertfordshire, with the modest purpose of providing an opportunity for an exchange of views on mutual assistance resulted in a

decision to found a new association with the declared purpose of "facilitating the coordination and systematic use of sources of knowledge and information in all public affairs and in industry and commerce and in all the arts and sciences.

The collaboration and reciprocal aid which such a purpose presupposes have remained an essential part of Aslib's programme. A significant change of emphasis took place, however, in 1948 when the British Society for International Bibliography was absorbed into the Aslib, and a new organisation was formed with the registered title of Aslib. Prominent among the objects set out for the new body were the promotion of the study of classifi-cation, bibliography, and documentation and the provision of training courses; Aslib's later preoccupation with research, training and consultancy.

Over a period, Aslib has been providing a wide range of services to member organisations. According to the new develop-ment plan adopted in 1985, Aslib had decided to concentrate its efforts in three core business areas: a) membership services, b) publication, and c) professional development.

15.4.2 Membership of Aslib

Aslib offers three kinds of membership. They are i) Corpo-rate Membership, ii) Affiliate Membership, and iii) Student Membership.

Corporate membership is offered to companies, organisations and sole traders, while Affiliate membership is for individuals, who wish to network. Corporate and Affiliate memberships run from January to December.

Student membership is for students of any discipline and runs from October to September. All members receive Managing Information.

15.4.3 Aslib's Information Services

The information services of Aslib have been reorganised to offer a higher level of practical advice and information to its members. It is a friendly, specialist enquiry service for any problems concerning the information management. The library and resource centre houses an important and relevant collection.

The nature of information services offered by Aslib include:

i) General information service,
ii) Dealing with Information management enquiries
iii) Document delivery service (photocopies LIS journal articles)
iv) Free Career Information
v) Open access to wide range of thesauri collection
vi) Bibliographies on wide range of topics

The Information Resources Centres, besides offering a basic referral service, would advise the members on practical issues of information management in the following key areas:

- online information retrieval methods and systems
- library automation
- networking, including local area networks
- software for library and information retrieval applications modern library/information resource management

With the increase in the number of publicly accessible (computerised) online databases a need has been felt to provide information about the databases. The biggest development in its services undertaken. by Aslib in recent years is the establish-ment of a research department. This department provides consult-ancy services and undertakes private research under contract. as well as pursuing an internally generated programme of research consisting principally of mechanisation and operational studies and survey work.

The Consultancy Group have experience in dealing with a wide variety of information related problems. The Group has carried out successful projects for many organisations from multi-national. blue chip companies and government departments to small start-up companies. The nature of these projects include IT selection and implementation. user needs surveys. business infor-mation and online sources.

Aslib Professional Recruitment specialists in recruiting and supplying permanent and temporary staff for LIS departments throughout the UK.

15.4.4 Publications of Aslib

The publications of Aslib include

Index to Theses Accepted for Higher Degrees in the Universities of Great Britain and Ireland

Aslib Directory

Book List :An annotated list of recent S&T books in English

Aslib Newsletter

Netlink

The following journals of Aslib are now available in elec-tronic format:

Aslib Proceedings (Monthly)

Journal of Documentation (Quarterly)

Current Awareness Abstracts

Online and CD Notes

Performance Measurement and Metrics

Program

Records Management Journal

Among the monographs the following are noteworthy:

Handbook of Special Librarianship and Information Work

Business Information at Work

Information Insights: Case studies in Information Management

Managing Change in Libraries and Information Services - Know How Guide

Managing Film and Video Collections - Know How Guide

How to Promote your Website Effectively - Know How Guide

Aslib Proceedings is a long-standing professional journal of international repute. It reports current research and the issues and debates in broad areas of information work. A strong inter-disciplinary Editorial Board helps to maintain standard of publi-cation from all related information fields of journalism. elec-tronic publishing. communication and Internet studies. The cur-rent subscribers of Aslib Proceedings have the added facility of accessing the full-text of articles as PDF files.

15.4.5 Professional Development Programmes

Aslib provides consultancy and information services, profes-sional development training, conferences, specialist recruitment, Internet products, and publishes primary and secondary journals, conference proceedings, directories and monographs.

Of the above major activities of Aslib training programmes for both members and non-members occupy a significant position. The training programmes cover a wide variety of topics, eg: Essential skills in library and information management, informa-tion sources, UDC, use of computers, thesaurus construction, customer needs analysis electronic serials manage-ment, marketing of information services, records management, abstracting, etc.

Aslib has restructured these courses to suit present day needs. For example, the new range of courses and seminars planned for 1999 and 2000 include: Internet skills, Databases for marketing, E-commerce for Information centres, Marketing on the Internet,

Website management, Management of change, etc.

Aslib Training offers highly focussed and practical training courses. There are three modes of training: Public Courses, On-site Courses and Open Learning. These modes are customised to suit the different requirements of individuals and organisations.

15.4.6 Special Interest Groups (SIGs)

Aslib used to have eleven specialist groups on different areas of LIS and each of them organises its own programmes to provide opportunities to other members and share experience and knowledge through meetings, visits, presentations, semi-nars and confer-ences. Now this has been reorganised as Special Interest Groups.

Aslib's Special Interest Group is an international network of information professionals in every sector of the information service. They provide invaluable support to members (currently some 1700) from large and small organisations. These networks of contacts create an effective information resource as well as provide business and career opportunities.

The Special Interest Groups of Aslib include:

Biosciences Group
Chemical Group
Computer Group
Economics and Business Information Group
Electronics Group
Engineering Group
Information Resources Management Network
Materials information Group
Multimedia Group
One Man Bands Group
Social Sciences Information Group
Technical Translation Group
European Business Opportunities Service

There are three Regional Branches to coordinate the activi-ties of SIGs of Aslib: Mid-lands Branch, Northern Branch and Scot-tish Branch.

15.4.7 Conferences and Seminars

Aslib and its specialist groups regularly organises confer-ences, seminars and profes-sional meetings to discuss issues confronting the library and information specialists. Besides, each annual conference of Aslib takes up a specific theme for deliberations. Aslib sponsored a significant conference of world-wide interest (Info 85) jointly with the Library Association, Institute of Information Scientists, Society of Archivists and the Standing confer-ence of national and university libraries.

15.5 INDIAN ASSOCIATION OF SPECIAL LIBRARIES AND INFORMATION BUREAUX (IASLIC)

The Indian Association of Special Libraries and Information Bureaux (IASLIC) is one of the prestigious professional bodies in India caters to the professional needs of special libraries and information centres.

15.5.1 Origin of IASLIC

With the dawn of India's independence, impetus was given to research in science and technology by increased financial grants to postgraduate departments in universities. The new era also saw the establishment of a string of national laboratories of the newly established Council of Scientific and Industrial Research (CSIR) and an equally good number of defence laboratories. In addition, Indian Institutes of technology were established at Kharagpur, Bombay, Madras, Kanpur and Delhi. This naturally led to the realisation that lacunae existed in the collection and dissemination of scientific and technological information among the country's research community. To overcome such a deficiency, scientists and academic libraries directed their attention towards the establishment of an All-India Organisation on lines similar to that of Aslib in the UK.

In 1949 an attempt was made to set up a special library association as a wing of the Indian Library Association. It took another six years for the actual establishment of such a pro-fessional body. As a sequel to an earlier meeting of a large number of scientists and academic libraries, who met on June 25, 1955, the Indian Association of Special Libraries and Information Centres (IASLIC) came into being at a meeting held on September 3, 1953 at the Lecture Hall of the Indian Museum, Calcutta with the late Dr.S.L.Hora, Director, Zoolog-ical Survey of India as chairman. Dr.Hora was the first Presi-dent of IASLIC and Mr. J.Saha, the chief librarian of the Indian Statistical Institute, Calcutta, was the Honorary Secre-tary.

15.5.2 Objectives of IASLIC

The objectives of IASLIC are as follows:

1) To encourage and promote the systematic acquisition, organisa-tion, and dissemina-tion of recorded knowledge;

2) To improve the quality of library and information services and documentation work;

3) To serve as a forum for active contact and to coordinate the activities of and assis-tance among special libraries; scientif-ic, technological, and research institutions; learned societies; commercial organisations; industrial research establishments; as well as other information and documentation centres to the fullest extent;

4) To improve the efficiency of technical workers and also to act as a centre of research in special librarianship and documenta-tion techniques;

15.5.3 Activities of IASLIC

There are a number of professional activities taken up by the IASLIC. Some of the major activities are discussed in this section.

1) Courses in Special Libraries and Documentation

In pursuance of its fourth objective, the association start-ed a training course in special librarianship and documentation in 1966. It has been suspended since 1970. The classes were held in the evenings and the duration was six months. The course was open to members of IASLIC who were graduates and possessed a degree or diploma in library science. Only 30 students were admitted to each course. After the successful completion of the course by passing the final examination, the candidates were awarded the Certificate in Special Librarianship by IASLIC.

2) Seminars and Conferences

The association holds seminars and conferences in alterna-tive years. The working papers, with the proceedings of each seminar on conference are published as a separate series.

3) Services

In keeping with its main activities, 1) IASLIC provides bibliographical services on demand; 2) Conducts a one-year course in special librarianship and documentation as well as a foreign language courses; 3) Publishes its official organ, the IASLIC Bulletin (Quarterly) and brings out special publications cover-ing the working papers along with the proceedings of the confer-ences and seminars; 4) Advises on request on problems connected with libraries and information centres; 5) Fosters library cooperation and interlibrary loan; and 6) Set up a separate wing to look after document reproduction and translation of activities from foreign languages.

15.5.4 Publications of IASLIC

IASLIC has published:

1) Directory of Special and Research Libraries in India

2) Technical pamphlets on Glossary of Cata-loguing Terms in Indian Regional Languages and Education for Librarianship (a survey by N.C.Chakravarthy),

3) A monograph entitled, Methods of Scientific Communication, by Bhattacharya.

It has also started publishing Indian Library Science Abstracts. The Association awards the IASLIC Gold Medal each year for the best technical article published in its bulletin. Distinguished scientists and librarians are honored by the Association by being elected honorary members. The Association is affiliated with IFLA and FID.

15.6 LET US SUM UP

In the light of the experience gained by the professional bodies over the past 100 years, it seems strongly advisable that they should make every effort to support the documentation and information activities of special libraries. During the last three decades, IASLIC has been able to create reasonably good impact on the library scene of our country. However, compared to SLA and Aslib, it will have to go a long way to enable it to influence the implementation of library and information policy of the country. The FID had been often criticised for several of its ambitious plans. But with the participation of several national and international agencies in its programmes. FID has now become a major international

professional organisa-tion for the development of library and information services and the promotion of international cooperation in this important area of human endeavour.

15.7 REFERENCES AND RECOMMENDED BOOKS

RNZ, H. "International Federation of Documentation". IN *Encyclo-pedia of Library and Information Science*. New York: Marcel Dekker, 1974. Vols.12 and 13.

McKenna, F.C. "Special libraries and special library association". IN *Encyclopedia of Library and Information Science*. New York: Marcel Dekker. Vol.28: pp.386-443

Websites of Aslib, FID, SLA, etc.

15.8 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Explain the various professional activities of FID.
2) Discuss the role of SLA and ASLIB in the development of professional activities in USA and UK respectively.
3) Write an essay on IASLIC

II SHORT NOTES

a) FID Publications
b) Training Programmes of Aslb

UNIT - 16 : EDUCATION AND TRAINING IN SPECIAL LIBRARIANSHIP

Structure

16.0 AIMS AND OBJECTIVES

This unit aims to provide an overview of the various documentation and information centres offering education and training in special librarianship.

After studying this unit, you should be able to

- describe the various courses of study leading to the award of degrees in documentation and information science by insitutions like DRTC and INSDOC
- explain the short-term specialised training programmes in documentation and information fields.

16.1 INTRODUCTION

Library and Information Science education is now over a century old. It started with Apprenticeship, raised through different levels like certificate, diploma, bachelor's and master's degrees, two-years integrated courses, spcialised courses in documentation and information science and research programmes.

Traditionally, librarianship involves in preparation of librarians for carrying out various activities, that is, locating, processing, storing, retrieval and dissemination of information surrogates in print or non-print formats. Special libraries are distinguished from public and

academic libraries in terms of location (parent organisation), subject orientation of documents, user groups (specialists), orientation of information services, etc. Special library is an integral part of its parent organisation completely devoted to the specific needs of its users. Therefore, the education and training needed to prepare the librarians for these libraries should able to provide a good knowledge-base with adequate theoretical foundations as well as practical skills.

Besides, university departments in India offering courses of study as electives in their bachelor's/master's degree programmes in library and information science, there are two specialised institutions, namely, Documentation Research and Training Centre (DRTC) and Indian National Scientific Documentation Centre (INSDOC) offering Associateship in documentation/Information Science. One of the main objectives of these Courses includes to equip the students with the necessary skills and information technology background for designing, implementing, operating and managing an information system pertaining to any such such as R&D, business and industry, government departments, etc.

With the active use of information technology in special libraries, various organisations at the regional and national levels started offering short-term courses in order to impart the latest skills in the application of IT in information management.

16.2 DOCUMENTATION RESEARCH AND TRAINING CENTRE (DRTC)

The Documentation Research and Training (DRTC) was established in January 1962 at Bangalore as a unit of the Indian Statistical Institute (ISI). DRTC was established as a result of social forces and personal initiative and visions of stalwarts like Prof.P.C.Mahalanobis and Dr.S.R.Ranganathan. The DRTC began functioning as a School in April 1962. The initial planning of the work of the Centre was carried out by Dr.S.R.Ranganathan.

16.2.1 Objectives of DRTC

The major objectives of DRTC are -

(1) To contribute to the development of different branches of information science, including documentation and library science by doing, gguiding, and supporting research and development in the concerned fields. The aim is to develop expertise and excellence in different areas of information science

(2) To help development of information centres including libraries, documentation centres, data centres and information analysis centres and consolidation centres by offering advisory services and designing specific development plans, tools and techniques requires for such purpose

(3) To disseminate results of several, information analysis and consolidation and of advisory services in different areas of information, including documentation and library science

(4) To develop manpower with appropriate professional skills and understanding that is capable of participating efficiently and effectively in the management of information services system, centres and programmes and in the advanced teaching and research programmes in information sciences: and to help this manpower in finding appropriate job opportunities

(5) To ensure development of the manpower engagged in professional activities

(6) To ensusre the development of the Documentation Research and Training Centre (DRTC) faculty.

16.2.2 Activities of DRTC

The activities of DRTC have been organised into various programmes, such as i) Research Programme, ii) Advisory Service Programme, iii) Extension Programme, iv) Publication Programme, v) Training Programme, and vi) Continuous Education Programme.

i) Research Programme

The objectives of the DRTC Research Programme are primarily to guide research work and to support, promote and carry out research; and to conduct continuing research in the various fields of information science.

Some of the significant examples of DRTC's contribution can be classified under the following heads:

(1) Principles of organising ideas in the text of documents

(2) Methodology for designing schemes for depth classification, including design of about 150 such schemes

(3) A general theory of subject indexing language

(4) Methodology for designing a classaurus, including design of about ten such vocabulary control devices

(5) Standards for determining the professional manpower requirements for information analysis and consolidation

(6) Design and development of computerised bibliographic information storage and retrieval systems.

ii) Advisory Service Programme

DRTC has developed plans for 20 information systems/centres so far. To suit the subject interests of various organisations, many schemes for classification, thesauri, trend reports and directories have also been developed under this programme. Nearly 100 organisations have received advisory service from DRTC in some form or the other.

iii) Extension Programme

The experience and contribution of DRTC in the field of education and research pertaining to library and information science has been well appreciated both at natonal and international levels. The Government of India has recognised DRTC as the national information transfer centre for its International Information Centre for On-going Research in Documentation (ISORID) since 1972.

iv) Publication Programme

From the very beginning, DRTC has been engaged in publishing documents originating out of activities under various programmes. These documents include survey reports, course materials, textbooks, handbooks, etc guides for curriculum development, documents on teaching techniques, research periodicals, advance treatises, standards, schemes of classification, proceedings of seminars, conferences, workshops, etc.

The regular periodical publications, primarily disseminating the results of research conducted by DRTC, has been the Library Science with a Slant to Documentation. From 1964 to 1980, it was published by DRTC in collaboration with the Sarada Ranganathan Endowment for Library Science. The number of documents published under the DRTC Publication Programme now consists of 600 papers, 50 reports, 20 books and 32 edited volumes.

16.2.3 Training Programme

i) Associateship in Documentation and Information Science (ADIS)

Under this programme, the DRTC conducts a regular 2-year Post-graduate Course leading to Associateship in Documentation and Information Science (A.D.I.S.). The minimum qualification for admission into the Course is i) Post-graduation in any discipline and Bachelor degree in Library Science, or ii) Master's degree in any subject and at least two years library/ documentation/ information handling experience in a specialist library or a documentation centre, iii) a four year plus degree, such as BE or MBBS and at least two years experience in documentation and information handling in a specialist library or documentation Centre.

The A.D.I.S. course is divided into two parts. In the first year the contents include comprehensive instruction in the theory and practice of documentation and information science. In the Second Part, the candidates have to complete an approved research project and prepare a dissertation on it and submit it to DRTC for evaluation.

ii) Continuous Education Programme

Under its Continuing Education Programme, DRTC organises two regular seminars annually: i) DRTC Annual Seminar, and ii) DRTC Refresher Seminar. Besides, DRTC organises weekly colloquia led by students of DRTC under the guidance of some members of the faculty.

The objectives of the DRTC Continuing Education Programme are to provide an opportunity for the working professionals to help keep themselves up-to-date their professional skills and knowledge through participation in seminars, workshops, refresher courses, etc conducted by DRTC. DRTC also supports the various continuing education programmes conducted by various institutions and schools of library scienes by sending their faculty.

DRTC also conducts several intensive courses on Science and Technology Information Services since 1975. DRTC has been conducting NISSAT-DRTC a six-weeks short-term course as a part of continuing education programme. DRTC participates in organising professional seminars and conferences on behalf of the national and international bodies.

16.3 INDIAN NATIONAL SCIENTIFIC DOCUMENTATION CENTRE (INSDOC)

Indian National Scientific Documentation Centre (DRTC) is a premier organisation dealing with library, documentation and information science, technology, services and systems. It is a national `Information Laboratory' under the Council of Scientific and Industrial Research (CSIR) and has been providing information and documentation services to the science and technology community, both at the national and international levels, since 1952. It provides comprehensive information services, specialises in information management, develops human resources in documentation and information science and carries out research information scince and technology.

16.3.1 Genesis of INSDOC

In 1946, the International Federation for Documentation (FID) involved the good offices of the International Standards Organisation (ISO) to stimulate the formation of a national documentation committee in each country. In 1950 the Union Ministry for Natural Resources and Scientific Research appointed a committee under the chairmanship of Dr.S.S. Bhatnagar and Dr.S.R. Ranganathan as the member-secretary to formulate proposals for the

establishment of a national documentation centre. Unesco agreed to support the venture under its Technical Assistance Programme. In 1951, the Government of India appointed an Advisory Committee to assist in the working and development of the Centre. On the first meeting of the committee held on 8th February 1952, the centre was named as the Indian National Scientific Documentation Centre (INSDOC).

As constituent unit of the CSIR, INSDOC provides scientific and technical information support to all R&D organisations, universities, academic institutions, industries, government departments and individuals. The services are accomplished through various functional groups, such as Data, Computer and Software Group (DCSG), Library, Bibliography & Bibliometrics Group (LBBG), Education, Training & Translation Group (ETTG) and Programme Management & Marketing Group (PMMG).

16.3.2 Objectives of INSDOC

The major objectives of INSDOC are -

(1) To receive and retain all scientific periodicals which may be of use to the country

(2) To inform scientists and engineers of articles which may be of value to them by issuing a monthly bulletin of abstracts

(3) To answer specific enquiries from information available in the centre

(4) To supply photocopies or translations of articles required by individual workers

(5) To be a national depository for reports of the scientific work of the nation, which published and unpublished

(6) To be a channel through which the scientific work of the nation is made known and available to the rest of the world.

16.3.3 Education and Training Division

In the human resource development front, INSDOC offers a variety of training programmes. INSDOC offers Associateship in Information Science (AISc). This training course in documentation / information science has been recognised by the Government of India as an equivalent to a master's degree. The course was based, on the belief that those who are working in live contexts of service, to a specific and specialised clientele should have a training course tailed to their needs, giving them a practical perspective of contemporary techniques in information retrieval. This emphasis on practical involvement, with specific reference to the backgrounds of the institutions and complexes that the students come from, was something new in the country. The course does not take more than a dozen people at a time in order to ensure a close teacher-student relationship. The methods of instruction includes symposia, discussions, practical assignments and field work.

i) The Objectives of AISc Course

The major objectives of the AISc Course are to provide the students with

i) an understanding and appreciation of the vital and pervasive role of information as an essential input in all developmental activities;

ii) a thorough insight into all the techniques of information handling with special emphasis on the application of information technology;

iii) full comprehension of the global nature of information for proper cooperation, coordination among the countries; and

iv) to equip the students with the necessary skills and information technology background for designing, implementing, operating and managing an information system pertaining to any field such as R&D, business and industry, government departments and academic institutions.

ii) Academic Programme

The Course offers comprehensive instructions in all aspects of information science and technology, with particular emphasis on the practical aspects. The course of study consists of two semesters with class-room instruction in the first year. The class-room instruction consists of formal lecturers, practical training, tutorials, on-the-job training, seminars, etc. The syllabus includes -

SEMESTER-I

Paper 1 : Information & Society
Paper 2 : Information Sources
Paper 3 : Information Processing & Organisation
Paper 4 : Information Systems & Library Automation
Paper 5 : Fundamentals of Information Technology

SEMESTER-II

Paper 6 : Information Products & Services
Paper 7 : Data Processing & Management Techniques
Paper 8 : Computer Networking: Technology and Services
Paper 9 : Information System Management
Paper 10 : Elective (Any one of the following):

1) Informetrics
2) Technical Writing
3) Research Methodology
4) Business Information Systems
5) Geographical Information Systems
6) Medical Information Systems
7) Patents Information Systems

In the Second Year (Semesters III & IV), the students have to take up a Dissertation Work and submit it within the specified period (usually within 31st August of the due year).

16.3.4 Short-Term Courses

INSDOC also organises several short-term courses on various topics, particularly on the application of computers and information technology in the field of library and information science.

For persons requiring specialised training in the field of information science, information management, information technology and related activities, INSDOC organises attachment training programmes. These training programmes are customised to suit the requirements of an individual taking into account the participant's professional background, work experience, etc.

The short-term courses offered by INSDOC include -

* Computer Applications to Library and Information Activities
* CDS/ISIS
* WINDOWS
* Database Design with Special Reference to ORACLE RDBMS
* Desk Top Publishing
* Bibliometrics
* Online Information Retrieval
* Office Automation
* Internet
* Information Technology for Information Management.

16.4 LET US SUM UP

Many university departments in India have been offering the Special Libraries/ Special Librarianship as an elective along with the Academic Libraries/ Academic Library Systm and Public Libraries/ Public Library System at the MLISc level. However, some library schools have discontinued the elective courses in order to make room for the IT-based courses in their curricula.

The UGC Curriculum Development Report in Library and Information Science (1993) has recommended the elective courses more specific to the type of the special libraries at BLISc or MLISc levels. For example, the elective recommended for BLISc programme include R&D Libraries, Medical Librarianship, Law Librarianship, Agricultural Libraries and Information System, Engineering & Technology Libraries and Information System, Industrial Libraries and Information Systems, etc.

Curriculum Development Centre (CDC) Report recommonded that most of the above electives can also be offered at the two year MLISc programme, in which case, it must be taught at the "higher level".

16.5 REFERENCES AND RECOMMENDED BOOKS

INSDOC. *Associateship in Information Science : Prospectus and Syllabus 1998.* New Delhi: INSDOC, 1998.

University Grants Commission. *Report of the Curriculum Development Centre in Library and Information Science.* New Delhi: UGC, 1993.

16.6 MODEL EXAMINATION QUESTIONS

I ESSAY QUESTIONS

1) Write an essay on education and training programmes offered by DRTC and INSDOC.

2) Explain briefly the short-term courses offered by various national organisations and professional associations

II SHORT NOTES

a) Short-Term Courses in IT

b) Continuing Education Programmes in IT