LIBRARY AND INFORMATION SCIENCE

Unit 1: Library, Information and Society

Library as an institution and its evolution. Library as a social and cultural institution. History of libraries. Library movement in India.

Different types of libraries - functions, objectives, activities and programs.

Communication theories and models. Barriers for communication. Levels of communications – intrapersonal, interpersonal and mass communication.

Five laws of Library Science and its implications on LIS activities.

Library legislation – need, importance and features. Library legislation in India. Study of public library acts in India.

Library and Information Science education in India

Intellectual Property Rights –Concept, copy right, Censorship – Print and Non-print media.

Right to Information Act, 2005

Role of Raja Ram Mohan Ray Library Foundation (RRLF).

Role of professional associations and organizations in library development. Study of ALA, LA, IFLA, FID, UNESCO, ILA, IASLIC, IATLIS,.

Unit 2: Management of Libraries and Information Centres

Management : Meaning and definitions. Role, functions and principles of management, Schools of thought in management, Levels of management.

Functional units of libraries

- Acquisitions section – Functions and procedures. Collection development -Selection policies and principles for print and electronic resources. Problems of Collection development for print and electronic resources (including licensing).

-Technical section.

- Circulation section

- Periodical section

- Collection management. Stock rectification. Stock verification and its methods. Weeding (withdrawal) of resources. Conservation and preservation of library resources.

- Reference and customer care service.

Financial and records management. Importance. Sources of finance. Mobilization of financial resources. Budgeting - methods and techniques.

Personnel Management. Meaning and importance. Job analyses and Job description. Staff selection and recruitment. Education and training. Motivation and leadership. Job evaluation and Performance appraisal, Staff manual.

Annual records. Importance of statistical data.

Library rules and regulations.

Unit 3: Information resources

Types of sources: Primary, Secondary & Tertiary- Documentary and non-documentary sources.

Primary sources: Structures and components of Journals; Patents; Technical Reports; Standards and Specifications; Conference Proceedings; Trade literature; Thesis and Dissertations.

Secondary sources: Dictionaries, Encyclopedias, Geographical sources. Biographical sources, Bibliographical sources, Yearbooks, Almanacs, Handbooks & manuals, Statistical sources.

Tertiary sources : Directories, Union catalogues etc.

Non-documentary sources: Human and institutional sources of information.

Electronic resources: e-books, e-journals, e-theses, e-databases, Internet resources etc.

Unit 4: Library Classification

Library Classification: Definitions, Need, Purpose and Functions.

Universe of knowledge. Modes of formation of subjects.

Types of classification schemes.

Understanding the concept of and schemes in Knowledge classification. Knowledge classification vs. Book classification. General theory of library classification.

Study of Laws, Canons, Principles and Postulates for Library classification.

Understanding the concept of notation. Types and qualities of notation.

Mnemonics and devices.

Study of schemes of classification. DDC, UDC and CC. Trends in library classification.

Unit 5: Library Cataloguing

Library Catalogue: Meaning, Definition, Need, Purpose, Objectives and Functions. Physical forms and Inner forms of catalogues.

History and development of catalogue codes.

Normative principles: Cannons, laws and principles.

Kinds of entries: Main entry. Added entries, Reference entries, Analytical entries – their structure and uses.

Subject cataloguing: Study of SLSH, LCSH and MeSH .

Study of resource description standards: ISBD, AACR2R.

Meta data : Concepts, Types, Use, Standards - MARC21and Dublin Core.

Resource sharing of bibliographic data: OCLC and its activities.

Centralized cataloguing, Co-operative cataloguing, Cataloguing at Source, CIP, Union Catalogues.

Consortia approach to metadata. Current developments: OPACs, WebOPACs, Z39.50.

Unit 6: Information Retrieval

Information Retrieval Systems: Basic concepts, definitions, objectives, components and functions.

Functional model of an IRS. Types of Information systems – IRS, DBMS, MIS, DSS, QAS, and Expert Systems.

Indexing Systems: Indexing - Meaning, purpose and need. An overview of historical development in indexing. Pre-coordinate indexing Vs. Post-coordinate indexing. Pre-coordinate indexing stems – brief outline of Chain procedure, POPSI, PRECIS and Keyword Indexing. Post-coordinate Indexing Systems – Uniterm Indexing. Citation Indexing – Meaning and importance, Different citation indexes: Shepard's Citations, SCI, SSCI. Automatic Indexing – Techniques and methods. Uncontrolled vocabularies.

Vocabulary Control: Vocabulary control – Meaning and importance; Controlled Vs. Free text indexing; Vocabulary control tools – Subject heading Lists, Thesauri, Thesaurofacet, Classarus. Thesaurus construction techniques. Case Study of Controlled vocabularies/ Ontologies such, ERIC, MeSH, INSPEC, UNESCO-IB, AgroVac, UMLS

Information Search Strategy and Retrieval Models: Types of queries. Search Strategy: Its pre-requisites, pre-search interview, the nature of search strategy, logic – Venn diagram, types of search strategy. Types of searches. Query formulation and searching process - Boolean operators and Boolean query formulation, Truncation, Wild Card Operators, Nested searching, Proximity searching, Range searching, Best match searching. IR models, Evaluation of IRS, Evaluation experiments: Overview of the Cranfield test, MEDLARS, the SMART Retrieval Experiment, The STAIRS project, TREC.

Unit 7: Information Systems and Services

Information systems: Basic concepts, Meaning, Objectives and Functions.

Components of Information System: Structure, Functions and Services, Libraries, Documentation centres, Information centres, Data centres, Information analysis centres, Clearing houses, Data banks, Data curation centres, Museums, Memories, Institutional repositories, Open archives, Referral and translation Centres, Publishing Houses.

Understanding the user communities : Identification of user communities; Information seeking behavior. User education, User studies.

Study of National Documentation Centres, Information Systems and programmes : NISCAIR, DESIDOC, NASSDOC, ENVIS.

Study of International Information Systems, services, and programmes- CAS, INSPEC, AGRIS, BIOSIS, INIS, MEDLARS.

Resource Sharing and Networks: Consortia- Importance and objectives. Study of information networks- OCLC, INFLIBNET, UGC-INFONET, DELNET, and INDEST.

Information Polices and programmes. Planning, Design and Evaluation of Information systems.

Information Services- Reference and Documentation Services: Introduction to references and referral services, Examination of reference collection for various types of libraries. Current Awareness Services (CAS): SDI service. Bibliography services, Abstracting service - Abstracting techniques, Types of abstract, Abstract writing (style, content) Abstracting bulletins. Indexing services. Trend report, Translation Services, Reprographic Services, Alerting services- List Servs and other email based services. FAQs. Virtual Reference Desk. Virtual Libraries.

Unit 8: Research Methods

Foundations of research: Nature, Definition and Objectives of research, Basic concepts of research. Ethics in research. Areas of research in Library and Information Science

Types of research – Basic and Interdisciplinary, Methods of Research- Historical , Descriptive, Case Study, Survey, Comparative, and experimental.

Planning of research: The Planning process; Review of literature. Selection of a problem for research- mode of selection, sources of problems, process of identification, criteria of selection, formulation of the selected problem. Hypothesis – Meaning, types, sources, functions, hypothesis; conceptualization; Research design - Essentials of good research design & its importance, Research design / writing the research proposal.

Research methods: Quantitative and qualitative methods of LIS research: Survey method, Historical method, Observation method, Experimental method, Case-Study method. Delphi method. Sampling & data collection: Sampling techniques/methods, sample design or choice of sampling techniques, sample size, sampling and non-sampling errors. Meaning and importance of data, sources of data, types of data, Use of secondary data

Data collection tools - Questionnaire- types of questions, structured and unstructured questions, Interview schedule – types, merits & limitations; Measurements indices, pilot studies. Observation method. Statistical analysis of data Statistical analysis; measures of central tendency, mean, median & mode; measures of dispersion – Range, intermediate ranges, measures of aggregate dispersion, mean-absolute deviation, the variance and standard deviation & normal distribution. Chi-square test.

Graphical presentation of data and report writing: Meaning & importance, commonly used graphics forms, graphs and charts. Histograms, Frequency polygons, Ogive bar charts, pie charts & pictogram. Organization of reports. Steps in writing research reports, writing style.

Research trends in LIS.

Unit 9: Fundamentals of Information and Communication Technology

Information and Communication Technology – Components, Impact of ICT on society.

Computers- Hardware, Software, Storage devices, Input/output devices.

Data representation in computers: Number systems, Binary numbers: Binary addition (1's and 2's complement methods), subtraction, multiplication and division. Representation of integers, fractions. Character encoding standards – ASCII, EBCDIC, ISCII and UNICODE. Issues with respect to character collation and sorting.

Computer software: System and application software; Programming concepts: System analysis, flowcharts, and algorithms. Open source and proprietary software. Operating Systems: M S- DOS, Windows & UNIX / LINUX.

File organization: Sequential, Indexed Sequential and Direct file.

Understanding communication concepts: Digital and analogue signals, Modulation, Frequency, Spectrum, Bandwidth, Multiplexing (FDM, TDM, STDM, and WDM), attenuation, Noise, Asynchronous and synchronous transmission, Simplex, Half-duplex and Full duplex channels**.**

Understanding networks concepts: Types of computer networks: Local Area Networks – Concept, Topologies (Bus, Star, Mesh, Tree, and Ring). Wide Area Networks and Metropolitan Area Networks- Concepts, Circuit switching and packet switching. Difference between LAN and WAN. Wireless Networks –Mobile telephones.

Internet Technologies: Internet- History and development. World Wide Web (WWW). Protocols and its functions. Study of protocols: HTTP protocol, HTML, The Internet Transmission Control Protocol (TCP) and IP Transmission over a telephone channel using PPP.

Fax, E-Mails, telecommunication. Video conferencing, Bulletin Board Service , Videotext, Voice Mail

Internet-Components, Services Browsing-Web browser, Search Engine, Meta-Data, Digital Object Identifies (DOI)

Web 2.0.technologies.

Unit-10 Library automation and Digital libraries

Library automation: Definition, need, purpose and advantages. Historical development. Planning for library automation, Hardware and Software selection,.

Automation of library operations: Acquisitions, Cataloguing, OPACs, Circulation and Serials control.

Evaluation of library automation systems. Criteria for evaluation. Evaluation techniques. Study of standards relevant to library automation.

Introduction to digital libraries. Concepts and issues. Understanding digital libraries. Evolution of digital libraries- Important milestones- Pre- DLI 1, NSF and DLI 1 and 2. Development of literature on digital libraries. DL communities - Agencies and organizations responsible for the development of DLs- CNI, CNRI, DLF. DL conferences- JCDL, ECDL and ICADL.

Content creation – Electronic documents, files and file formats. Study of different file formats. Studying PDF in detail- features of PDF. Born digital and legacy documents. Digitization- scanning,

OCRing and conversion to PDF. Electronic Publishing and scholarly communication, E-journals and e-books

Comparative study of different document types. Digitization.

Creating Web documents- Mark Up Languages- SGML, HTML and XML. Creating documents in HTML. HTML editors and tools. Front Page and Dream Weaver. XML and its features- XML tools. DL architecture .Elements of a DL. DOI, Open URL, CrossRef and other aspects. Study of the DL content management issues- Metadata and other resource discovery issues. Access Control and DRM, Security and preservation issues.

Open Access Movement and Institutional repositories.