

## Scheme of Examination

There shall be University examination at the end of each semester in the following subject as patterned below

Sl No	Courses/Subject Title	Marks			Credits	Teaching hours
		Internal Assessment	Examination	Total marks		
<b>I semester</b>						
<b>Hard Core</b>						
1.1	Foundations of Library and Information Science	25	75	100	4	4
1.2	Information Sources	25	75	100	4	4
1.3	Library Classification (Theory)	25	75	100	4	4
1.4	Basics of Computer (Theory)	25	75	100	4	4
<b>Practical</b>						
1.5	Library Classification (Practical) - I	-	50	50	2	4
1.6	Basics of Computer (Practical)	-	50	50	2	4
	<b>Total</b>			<b>500</b>		<b>24</b>
<b>II Semester</b>						
<b>Hard Core</b>						
2.1	Information Society & Literacy	25	75	100	4	4
2.2	Management of libraries and Information centers	25	75	100	4	4
2.3	Library Cataloguing (theory)	25	75	100	4	4
<b>Soft Core</b>						
2.4	Library Automation (Theory)	25	75	100	4	4
<b>Elective</b>						
2.5	Information Literacy	10	40	50	2	2
<b>Practical</b>						
2.6	Library Cataloguing (Practical)	-	50	50	2	4
2.7	Library Automation (Practical)	-	50	50	2	4
	<b>Total</b>			<b>550</b>	<b>22</b>	<b>26</b>

III Semester						
<b>Hard Core</b>						
3.1	Research Methodology	25	75	100	4	4
3.2	Information Systems and Services	25	75	100	4	4
3.3	Indexing System (Theory)	25	75	100	4	4
<b>Soft Core</b>						
3.4	Information and Communication Technology (Theory) – I	25	75	100	4	4
<b>Elective</b>						
3.5	Information Sources on Social Sciences and Science and Technology	10	40	50	2	2
<b>Practical</b>						
3.6	Information Processing and Retrieval (Practical)-I	-	50	50	2	4
3.7	Information and Communication Technology (Practical) - I	-	50	50	2	4
<b>Total</b>				550	22	26
<b>IV Semester</b>						
<b>Hard Core</b>						
4.1	Information and Communication Technology (Theory) - II	25	75	100	4	4
4.2	Digital Libraries	25	75	100	4	4
4.3	Optional: (Study of any one)	25	75	100	4	4
a)	Public library systems and services					
b)	Academic library systems and services	25	75	100	4	4
c)	Health Science library systems and services	25	75	100	4	4
<b>Project work</b>						
4.4	Project work	25 (Viva voce)	75	100	5	-
<b>Practical</b>						
4.5	Library Classification(Practical)-II	-	50	50	2	4
4.6	Information and Communication Technology (Practical) - II	-	50	50	2	4
<b>Total</b>				550	21	20

**I Semester****PAPER 1.1: FOUNDATIONS OF LIBRARY AND INFORMATION SCIENCE**

**Unit 1:** Library & Information Centers: Meaning and Definitions, Components, Evolution and their Role in the modern society.

**Unit 2:** Types of Libraries: Meaning and definition, Objectives, Functions and Services of Academic, Special, Public, Corporate, National and Contact Libraries. Public Relation and Extension Activities: Concept and Programs, Outreach Activities.

**Unit 3:** Library Movement: Historical account of Library Movement in India with special reference to Karnataka.

**Unit 4:** Five Laws of Library Science: Implications and their relevance to information society.

**Unit 5:** Library Legislation: Need and purpose; Functions and Principles; Salient features of Karnataka Public Library Act, 1965, Delivery of Books & News paper Act, 1954; Digital Millennium Act, 1996.

**Unit 6:** Professional Associations and Organizations (National and International): Genesis, Development and Role -ALA, CILIP, IFLA, SLA, ILA, IASLIC, IATLIS and KALA. Promoters of LIS Services: UNESCO, RRRLF

**Unit 7:** Science of Librarianship

- a. Professionalism: Generic, Ethic, qualities;
- b. Science of Librarianship: Attributes, Universe of Knowledge, Classification, Cataloguing, Indexing, Thesaurus, Abstract, Knowledge Organization System (KOS)

**References**

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**Kumar, P.S.G.** Foundations of Library and Information Science. Paper I of UGC Model Curriculum. B.R. Publishing Corporation. 2011

**Belkin, N:** Information Concept for Information Science: Journal of Documentation. Vol. 34(1) 1978 55-85

**Brookes, Bertram C:** The foundations of Information Science: Philosophical aspects. *Journal of Information Science*. Vol. 2, 1980, pp125-133

**Ranganathan, S. R.** The Five Laws of Library Science. Bangalore: Ess Ess, 2006.

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- Greer, R. Grover, R. & Fowler, S.** Introduction to the Library and Information Professions, Ed.2. Libraries Unlimited, 2013.
- Isaac, K. A.** Library Legislation in India: A Critical Comparative Study of State Library Acts. Ess Ess. 2004
- Joliffie, Herold:** Public library extension activities. Ed 2. London, Library Association, 1968
- Kahan, MS:** Principles and prospective of copy right. New Delhi, Sarup and Sons, 1996
- Rubin Richard.** Foundations of Library and Information Science, Neal Schuman, 2010. Pp468
- Khanna, JK:** Library and Society. Kurukshetra, Research Publiation, 1987
- Mukharjee, SK and Sengupta, B:** Library organization and administration, Calcutta, Old press, 1972.
- Stephen, Grauberd and Paul Leclere:** Books, Bricks and Bytes: Libraries in the 21St century. Transactions Publishers, 1998

## PAPER 1.2: INFORMATION RESOURCES

**Unit 1:** Information Sources: Concept, Types, Characteristics and uses.

**Unit 2:** Primary Sources: Concept, Characteristics and uses; Periodicals, Conference Proceedings , Technical Reports, Patents, Standards and Specifications, Trade Literature, Theses and Dissertations, Reprints, Preprints and Monographs.

**Unit 3:** Secondary Sources: Concept, Characteristics and uses; Dictionaries, Encyclopedias, Handbooks and Manuals, Bibliographies, Geographical Sources and Biographical Sources, Yearbooks, Almanacs, Sources of Statistics, Library Catalogues, Abstracting and Indexing Sources.

**Unit 4 :** Tertiary Sources: Concept, Characteristics and uses; Directories, Bibliography of Bibliographies, Union Catalogues, Guides to Subject Literature.

**Unit 5:** Non-documentary Sources:

- (a) Human resources -Consultants, Experts, Extension Workers, Technology gatekeepers, Invisible Colleges, Information Brokers.

(b) Institutional resources -National and International agencies, Govt. Departments, R&D Organizations, Academic Institutions, Data Banks, Institutional Websites.

**Unit 6:** Electronic Information Resources: Meaning and Definitions, Types – E-journals, E-books, Databases, E-theses, E-newspapers; Open Access Resources; E-learning Resources: Swayam, Swayam Prabha, e-PG Pathshala, eGynakosh, e-shodhsindhu, NDL, NPTEL; ETD – Shodhganga, Shodhgangothri.

**Unit 7:** a). Social Networking Sites: Discussion Forums, Information Gateways/Portals, Blogs, Wikis, Twitter.

b) Open Learning Resources: OER, MOOCs

c) Evaluation of Print and Electronics

### References

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**Chowdhury, CG and Chowdury, Suddatta:** Searching CD-ROM and Online information sources, London, Library Association, 2001.

**Davinson Donald:** Reference service. London, Clive Bingley, 1980.

**Grogan, Denis:** Science and Technology, Ed.4. London, Clive Bingley, 1982

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**Hanson, CW:** Introduction to science information work. London, ASLIB, 1973

**Higgins, Gavin:** Printed reference materials. London, Library Association, 1980

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**Parker, C.C. and Purely:** Information Sources in Science and Technology. Ed. 2. 1986

**Ranganathan, SR:** Reference Service Ed 2. Bangalore, Sarada Rangnathan Endowment for Library Science, 1992.

**Sewa singh:** Handbook of Reference and Information Services. New Delhi, Crest Publishing house, 1997

**Sewa Singh:** International manual of Reference and information services. Delhi, Beacon Book, 1997

**Sharma, JS and Grover, DR:** Reference service and sources of Information. New Delhi, Ess Ess publications, 1992

**Subramanyam, K:** Scientific and Technical Information Resources. New York, Marcel Dekkar, 1981.

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**PAPER 1.3: LIBRARY CLASSIFICATION (THEORY)**

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**Unit 1:** Library Classification: Meaning and Definition, Need, Purpose and Functions.

**Unit 2:** Universe of Knowledge: Modes of formation of subject; Knowledge Classification and Book Classification.

**Unit 3:** Schemes of Library classification: DDC, UDC and CC -History, Development and Structure

**Unit 4:** Theory of Library Classification: Planes of Work, Laws, Canons, Principles and Postulates.

**Unit 5:** Fundamental Categories: Facet Analysis and Facet Sequence, Phase Relation and Common Isolates. Common and Special.

**Unit 6:** Notation: Meaning and Definition, Need, Types, Functions and Qualities; Mnemonics.

**Unit 7:** Trends in Library Classification: Automatic Classification, Web Dewey. Knowledge Organization Systems – Concept, Ontology, Folksomony, OWL, SKOS, Taxonomy.

**References**

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**Berwick Sayers, WC:** Introduction Library Classification. London, Andra Deuach, 1950

**Bliss, HE:** Organization and knowledge in libraries and subject approach to Books. Ed.2. New York, Wilson, 1929.

**Eric, J Hunter:** Classification made simple. England, Gower Publishing, 1995.

**Fosket, AC:** Subject Approach to Information. Ed.5. 1991.

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**John, P Comaromi and Satija, MP:** Exercises in the 20th edition of DDC. New Delhi, Sterling Publishers Pvt. Ltd. 1990.

**Kochar, RS:** Library classification System, New Delhi, Common Wealth Publishers, 1998

**Krishna Kumar:** Theory of Classification. Ed.2, New Delhi, Vikas, 1980.

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**Satija, MP and John, P Comaromi:** Introduction to the practice of Dewey Decimal Classification. New Delhi, Sterling Publishers Pvt. Ltd., 1998.

**Satija, MP:** Colon Classification. New Delhi, Sterling Publishers Pvt. Ltd., 1993.

**Shegal, RL:** Hand book of Colon Classification. New Delhi, Ess Ess Publication, 1993.

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**PAPER 1.4: BASICS OF COMPUTER (THEORY)**

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**Unit 1:** Information Technology: Meaning, Definition, Scope and Evolution, Application of ICT in Libraries and Information Centres. Computers: Concept, Types, Generation, Capabilities and limitations

**Unit 2:** Computer Hardware: Components of a Computer; Memory -Internal Storage: ROM and RAM, External Storage Devices: Magnetic Devices -Hard Disk; Optical Devices -CD-ROM, DVD, Blue-ray Disc; Pen drive; Input/output Devices: Microphone, Joystick, Touchpad, Touch Screen, barcode reader. Output devices: Printer, Plotter, Monitor & Speaker.

**Unit 3:** Computer Software: Systems Software -Compilers and Interpreters; Operating Systems: - Single User-MS-DOS, MS-WINDOWS; Multi-user Operating Systems –Windows, Linux/Unix; Application Software Package: MS Office -Word, Excel and PowerPoint, Mobile Operating Systems –IOS, Android.

**Unit 4:** Data Representation and Data Manipulation: Data Representation-Bits, Bytes, Codes-BCD, EBCDIC, ASCII, ISCII and UNICODE. Number System-Conversion from binary to decimal-Decimal to Binary; Binary calculations-Addition-Subtractions.

**Unit 5:** Programming: Steps in programming, algorithm, flowchart, Programming languages: BASIC, PASCAL, C, C++, HTML.

**Unit 6** File organization: Field, Record, file, database, types of file organization and their advantages and disadvantages.

**Unit 7:** Internet: Historical development, Web browsers – Internet Explorer, Mozilla Firefox and Google Chrome; Search Engines- need and importance, types, search strategies.

**References**

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**Coper, M J:** What Computers can do. London, Masclanner, 1970.

**Davies, G B:** Introduction to computers. New York, Mc-Graw Hill, 1977.

**DRTC:** Library Networks in India. Seminar Volume, 1990.

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**Thomas, C Bartee:** Digital Computer fundamentals Ed 6. New Delhi, McGraw-Hill Publishing Company Ltd., 1985.

### **PAPER 1.5: LIBRARY CLASSIFICATION (PRACTICAL) - I**

Classification of Simple, Compound, Complex and Electronic documents according to the latest edition of Dewey Decimal Classification Scheme.

(Each Student shall compulsorily maintain practical record and submit the same at the time of practical examination)

### **PAPER-1.6: BASICS OF COMPUTER (PRACTICAL)**

- Acquaintance with Computer and its Components
- Hands on Experience and Work Assignments with MS-DOS, MS-WINDOWS, MS-OFFICE - Word, Excel and PowerPoint.

(Each Student shall compulsorily maintain practical record and submit the same at the time of practical examination)

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**Second Semester**

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**PAPER 2.1 INFORMATION SOCIETY & LITERACY**

**Unit 1:** Data, Information and Knowledge: Types, Nature and Characteristics Features; Information Communication: Information Generation and Communication; Channels and Levels of Communication; Barriers of Information Communication; Communication Modes and Models

**Unit 2:** Information Society: Meaning and Definition; Genesis, Development and Evolution of Information Society; Information Industry - Content creation, content organization and content communication (Generators, Providers and Intermediaries). Economics of information

**Unit 3:** Issues of Information Society: Social Issues, Political Issues; Policies relating to Information: Right to Information Act, Intellectual Property Rights – Copyright, Trademark and Patent. Concept of Freedom, Censorship, Data Security, Fair Use and Creative Commons. National and International Information Policies and Programs; Information Technology Taskforce, and National Knowledge Commission.

**Unit 4** Information literacy: Meaning, Definition, Need, Importance Historical perspective of Information literacy. User education to information literacy.

**Unit 5** Types of Information Literacy: Library Literacy, Technology literacy, media literacy, computer and digital literacy, research literacy.

**Unit 6** Models and Standards: Models- SCONUL model and Empowering 8 model, B-6, Seven Pillar, ELLIS. Standards- ALA, IFLA ACRL. Taskforces and forums.

**Unit 7** Knowledge Management and Economics of Information.

**References**

**American Library Association.** Final Report of Presidential Committee on Information Literacy. [www.ala.org/at/nill/litt1sthtml](http://www.ala.org/at/nill/litt1sthtml)

**Barker, K. and Lonsdale, R.** Ed. (1994). Skills for life: the value and meaning of literacy. London: Taylor Graham.

**Bawden, D.** (2001). Information and digital literacies: a review of concepts. <http://gti/edu.um.es.8080/gomez/hei/intranet/bawden/pdf>.

**Eisenberg, M.B. , Lowe, C.A. & Spitzer, K.L.** (2004). Information literacy: Essential skills for Information age. London: Libraries unlimited.

**Meadows, A.J.** Ed. (1991). Knowledge and communication: essays on the Information chain. London: Library Association.

**Pantry, Sheila and Griffiths, Peter** (2002). Creating a successful eInformation service. London: Facet.

**ZoranaErcegovac** (2008). Information literacy: search strategies, tools & resources for high school students and college freshmen. California: ABC-CLIO.

## **PAPER 2.2: MANAGEMENT OF HYBRID AND DIGITAL LIBRARIES**

**Unit 1:** Management: Concepts, Definition and Scope; Management Styles and Approaches; Functions and Principles of Management and their application to Library and information centres

**Unit 2:** Human Resource Management: Meaning, Definition, Objectives and Functions; Selection and Recruitment; Manpower planning, Job analysis; Motivation; Training and Development; Performance Appraisal, Promotion and transfer; MBO.

**Unit 3:** Financial Management: Resource Mobilization; Budgeting Methods and types of Budgets, Preparation of budget, Costing and Accounting, Cost Benefit Analysis: PERT, CPM; Outsourcing

**Unit 4:** Library Records and Statistics: Library Records, Annual Report-Compilation, Contents and Style; Library Statistics, Staff Manual, Authority File.

**Unit 5:** Systems Analysis and Design: Library as a system; Design and Planning of Library and Information Center, Approaches, Factors, Steps. SWOT. Total Quality management: Concept, Definition, Elements, Quality Audit, LIS related Standards. Technology Management. .

**Unit 6:** a). Library Operations: Collection Development - Selection and Acquisition; Technical Processing; Serials Control; Circulation Control; Maintenance; Stocks verification and Weeding.

b). Online Bookstores – Identification, Advantages, Online Book Shops v/s Traditional Book Shops, URLs.

**Unit 7:** Library Building: Hybrid and Digital; Planning and Design, Factors and Principles, Furniture and Equipment, library standards.

### **References**

**Bryson, J:** Effective Library and Information Center Management.

**Chatterjee, A K:** Introduction to Management: Its Principles and Techniques. Calcutta, World Press.

- Cowley, J:** Personnel Management in Libraries. 1982.
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- Krishna Kumar:** Library Administration and Management. Delhi, Vikas, 1987.
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- Ray, Prytherch:** Information Management and Library Science: A Guide to the Literature. England, Gower Publishing, 1994.
- Sharma, J K:** Personnel Management in Libraries. 1981.
- Smith, D:** Systems thinking in Library and Information Management. 1980.
- Stedswart, R D and Eastilick, J T:** Library Management. Ed. 3 1988.
- Thiefaut, R J and Reynolds, S W:** Effective Information Systems Management. 1982.
- Siwatch, Ajit Singh.** Library management: Leadership style and organizational climate. 2004

### **PAPER 2.3: LIBRARY CATALOGUING (THEORY)**

**Unit 1:** Library Catalogue: Meaning, Definition, Purpose and Functions; Types and forms of Catalogue including OPAC and Web-OPAC.

**Unit 2:** Normative Principles: Laws, Canons and Principles

**Unit 3:** Catalogue Codes: Brief history and salient features of Classified Catalogue Code, AACR - II(R).

**Unit 4:** Catalogue Entries and Filing: Kinds of entries, Filing rules and Principles

**Unit 5:** Subject Headings: Chain Procedure, Sear's List of Subject Headings and Library of Congress Subject Headings

**Unit 6:** Co-operative and Centralized Cataloguing; Union Catalogues: Concept, Types and Compilation, Z39.50, copy cataloguing, OCLC WorldCat.

**Unit 7:** Trends in Cataloging of Electronic and Internet resources, Metadata Standards-Dublincore, ISO2709, FRBR-RDA, BIBFRAME

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**References**

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**American Library Association**, Angle-American Cataloguing Rules. Ed. 2.Chicago, ALA, 1978.

**Cutter, CA**: Rules for Dictionary Catalogue. Ed.4. London, Library association, 1955.

**Fosket, AC**: Subject approach to Information. Ed.5. 1991.

**Girija Kumar and Krishna Kumar**: Theory of Cataloguing. New Delhi, Vikas, 1986.

**Hunter, EJ**: Cataloguing: Guide Book, ED.2 London, Clive Bingley, 1974.

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**Ranganathan, SR**: Library Catalogue: Fundamentals and Procedure. Madras, Library Association, 1950.

**Viswanathan, CG**: Cataloguing Theory and Practice. 1990.

## PAPER 2.4: LIBRARY AUTOMATION

**Unit 1:** Library Automation: Meaning and Definitions, History, Need and Areas of Library Automation

**Unit 2:** Strategies for Library Automation: Factors -Internal and External, Prerequisites, Library Automation Tasks

**Unit 3:** Infrastructure Requirements for Library Automation: Manpower, Hardware, Software, Cost, Furniture and Equipment – Barcode, RFID, QR Codes, NFCT (Near Future Communication Technology).

**Unit 4:** Automation of House Keeping Operations: Acquisition and Cataloguing, with focus on role, rationale, Subsystems and Interface, File and Data Structure, OCLC and LC.

**Unit 5:** Automation of House Keeping Operations: Circulation and Serials Control with focus on role, rationale, Subsystems and Interface, File and Data Structure; Retrospective Conversion: Strategies and Techniques

**Unit 6:** Library Software Packages: SOUL, Easylib, Libsys, NewgenLib, Koha; Evaluation of Library Automation Software.

**Unit 7: Library Technology: Library Security, Discovery tools, Semantic Technology and tools, Link resolves.**

### References

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- xBiddiscombe, Richard:** End user revolution: CD-ROM, Internet and change role of the Information Professional. London, Library association, 1996.
- Burns, A:** New Information Technology. 1984.
- Edmunda, R A:** Prentice Hall Encyclopedia of Information Technology, Essential Guide dBase plus in Libraries. 1988
- Ffaruqui Khalid Kamal:** Automation in Libraries. New Delhi, Anmol, 1997.
- Faruthi, S N Ed.:** Library Techniques and Technologies Perspectives in Multimedia Library Development. New Delhi, Kanishka, 1997.
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- Moorthy, A L:** Information Technology applications in academic Libraries in India with emphasis on networking services and information sharing, Ahmedabad, INFLIBNET, 1997.
- Ojha, D C, Edd.:** Computer Applications III Library and Information Science. Jodhapur, Scientific Publication, 1995.
- Rouse, Rowena:** CD\_ROM and online computing, Electronics and Telecommunication databases, London, ASLIB, 1994.
- Satyanarayana, R:** Information Technology and its facts. New Delhi, Manak, 1998.
- Tiwari, Purushotham:** International encyclopaedia of library automation: Contents: Vol.2- Library computerisation, 2011
- Unesco,** Reference Manual and CDS/ISIS Pascal Manual, 1989.

## **Elective Paper: 2.5 INFORMATION LITERACY**

**Unit 1: Types of Libraries:** Meaning and definition, Objectives, Functions and Services of Academic, Special, Public, Corporate, National and Contact Libraries

**Unit 2:**

**a) Types of Information sources** --- Primary, secondary and tertiary information resources;

**b) Library Tools, Services and Facilities** – Organization of library resources, Classification, Catalogue, Union catalogue, Kardex, Bibliographies, Directories, Yearbooks, Indexing and abstracting; Services-Reference service, CAS,SDI, Bibliographical service, Document delivery service, Referral service; Facilities-photocopy, reading room facility, book bank, circulation of books, internet browsing.

**Unit-3: Electronic Information Resources:** Meaning and Definitions, Types – E-journals, E-books, Databases, E-theses, E-newspapers; Open Access Resources; E-learning Resources: Swayam, SwayamPrabha, e-PG Pathshala, eGynakosh, e-shodhsindhu, NDL, NPTEL; ETD – Shodhganga, Shodhgangothri.

**Unit 4: Open Access resources:** Open Access initiative, OA journals, OA books, DOAJ (directory of Open access Journals), Directory of Open access Books, OER, MOOCs

**Unit 5: Information Literacy:** Meaning, Definition, Need and Evolution of the concept. Historical perspective of Information literacy.

**Unit 6: Information Organization and Presentation:** Methods of organization and presentation, use of style manual, foot notes and end notes

**Unit 7: IL Skills and Competencies:** Information Literacy (IL) programmes, Study of Information literacy programs in the world. Information literacy instructions in different types of Library and Information centers, Levels of Information Literacy: Entry level, Mid level, High level, Advance level. Lifelong learning and its components.

## References

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**Grogan, Denis:** Science and Technology. Ed. 4. London, Clive Bingley, 1982.

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**Sharma, JS and Grover, DR:** Reference service and sources of Information. New Delhi, Ess Ess publications, 1992.

**Subramanyam, K:** Scientific and Technical Information Resources. New York, Marcel Dekkar, 1981.

### **PAPER 2.6 LIBRARY CATALOGUING (PRACTICAL)**

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Cataloguing of Simple, Composite and complex documents according to AACR-II (R)

### **PAPER 2.7: LIBRARY AUTOMATION (PRACTICAL)**

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Hands on experience and work assignment with library software packages: SOUL and Koha.

(Each Student shall compulsorily maintain practical record and submit the same at the time of practical examination)

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**Third Semester**

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**PAPER 3.1: RESEARCH METHODOLOGY**

**Unit 1:** Research: Meaning, Definition, Need and Purpose, Types of Research -Basic, Applied and Interdisciplinary, Scientific Method. Areas of Research in Library and Information Science.

**Unit 2:** Research Problem: Review of Literature, Identification, Selection and Formulation of a Research Problem. Research Design: Need and Importance, Types and Contents

**Unit 3:** Hypothesis: Meaning and Definition, Functions, Types and formulation of hypotheses, Qualities of good hypotheses.

**Unit 4:** Methods and Tools of Research: Historical, Experimental, Survey and Case study method, Informetrics, Scientometrics, Delphi and Content Analysis; Observation, Interview, Questionnaire, Schedule, Scales and Checklist

**Unit 5:** Sampling methods and Techniques: Meaning and definition of sample, Features of good sampling, Sampling techniques -Random sampling, Stratified sampling and Systematic sampling; Non -Random sampling methods -Quota sampling, Cluster sampling, Convenience sampling, Sample size, Calculation of sample size, Bias and Error.

**Unit 6:** Data processing, Analysis and Interpretation -use of statistical Techniques -Data presentation -Use of Graphs, Charts and Tables; Use of SPSS for data processing: Chi-Square, Correlation, T-Test.

**Unit 7:** Report Writing: Nature, Organization, Content, Style Manuals – Chicago Style Manual, MLA, APA. E-citation – EndNote, RefWork and Mendley. Evaluation of a research report, Ethics in Research, Plagiarism: Need and Importance, Plagiarism detecting software.

**References**

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**Tauber, MF and Stephens, IR:** Library Surveys. New York, Columbia University Press, 1968.  
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**Whitney, FL:** Elements of Research. Bombay, 1961.  
**Wilson, EB:** Introduction to scientific Research. New Delhi, Mc-Graw Hill, 1952.

## PAPER 3.2: INFORMATION SYSTEMS AND SERVICES

**Unit 1:** Information Service: Meaning and Definition, Importance, Design and Planning, Factors

**Unit 2:** Reference service: Types -Short and Long Range with examples. Reference process, Steps in providing reference services, Virtual Reference Desk (VRD), Management, technology and resources. Referral service. Reference Collection, Knowledge, Skills and Qualities of a Reference Librarian

**Unit 3:** Compilation of CAS and SDI, Indexing and Abstracting Bulletins, Translation Service. On-line Services: Alerting services-Listservs and Subject portals, FAQs -Developing FAQs -methods and techniques

**Unit 4:** Document Delivery Services -Needs and Importance, Types of Document Delivery Services Use of technology in document delivery. Document delivery services of INFLIBNET and DELNET.

**Unit 5:** Bibliographic Services -Importance, Types and its role in Information access and use Preparation of bibliographies, Trend Reports, State of the Art reports and Digests.

**Unit 6:** National Documentation Centers and Information Systems: NISCAIR, DESIDOC, NASSDOC and SENDOC

**Unit 7:** International Information Systems and Services: Identification, Features and Use: BIOSIS, INSPEC, ERIC, AGRIS, INIS and MEDLINE

### References

- Davinson Donald:** Reference service. London, Clive Bingley, 1980.  
**Fjalibrant, N and Stevenson:** User Education in Libraries. London, Clive Bingley, 1978  
**Guha, B:** Documentation and Information Services: Techniques and Systems. Rev. Ed.2. Calcutta, World Press, 1983.  
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**Sewa Singh:** International Manual of Reference and Information Services. Delhi, Beacon Book, 1997.

**Sharma, JS and Grover, DR:** Reference Service and Sources of Information. New Delhi, Ess Ess publishers, 1992.

### PAPER 3.3: INDEXING SYSTEM (THEORY)

**Unit 1:** Indexing: Meaning, Definition, Objectives, Characteristics and Functions, Functional Model of IRS.

**Unit 2:** Components of Indexing: theories, methods and importance. Indexing as a profession, Indexing languages: Vocabulary control, semantics and syntactic, Thesaurus: Definition, Importance, Design and Construction.

**Unit 3:** Indexing Systems: Pre-Coordinate and Post coordinate. PRECIS, POPSI, KWIC and its variations, UNITERM and Citation indexing. Automatic Indexing – Techniques and Methods.

**Unit 4:** Bibliographic Description: Concept, Need, Historical Development, Standards for Bibliographic record format-ISBD.

**Unit 5:** Bibliographical Control: Concepts, Need, Historical Development, Bibliographical control of Documents including Non-book Materials. Role of National Organizations; Standards and Cooperation.

**Unit 6:** International Bibliographical Control: Need, Universal Bibliographical Control, Three Standards of the UBC Philosophy, Requirements of UBC. Role of International Organizations; Standards and Cooperation.

**Unit 7:** Evaluation of Indexing Systems: Criteria-Recall and Precision Coverage and Currency, Evaluation Studies -ASLIB, MEDLARS, Cranefield, SMART and STAIRS.

#### References

**Anderson, D:** Universal Bibliographical Control. 1974.

**Aittchinson, Jand Gilchrist, A:** Thesaurus construction: A Practical Manual. 1972.

**Berwick Sayers, WC:** Manual of Classification for librarians. Ed. by Arthure Maltby, Ed. 5 London, Andre Deutsch, 1978.

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**Salton, G:** Introduction to Modern Information Retrieval 1983.

**Senn, James, A:** Analysis and Design of Information Systems. Ed.2. New York, Me-Graw Hill company, 1991.

### **PAPER 3.4: INFORMATION AND COMMUNICATION TECHNOLOGY (THEORY) - I**

**Unit 1:** Multimedia technology: Concept, scope, and developments, Multimedia PCs, Audio and video, image representation and manipulation

**Unit 2:** Hypertext and Hyper Media: Concept, Scope and Development, Audio and Video. Image Representation and Manupulation. Hardware and software requirements.

**Unit.3:** Database design, Development and Management: Concept of Database and DBMS; types, design, structure, Organization and Development of Database; Data Security.

**Unit.4:** Study of WINISIS: System overview, System Installation, Database Construction, Techniques, Menus, Tools and Creation of database; Research Management Information System (RIMS)-Pure, VIVO, Converis.

**Unit 5:** Data Science & IoT: Concept; Big Data

**Unit.6:** a). Online Databases in Science and Technology: SCOPUS, Web of Science, Google Scholar, PUBMED, INSPEC

b) Online databases in social sciences: ERIC, EconLIT, Indiastat.com

**Unit 7:** Cloud Computing: Concept, Origin, Characteristics, Models, Architecture, Advantages and Disadvantages.

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**References**

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**Beiser, Karl:** Essential guide to dBase III+ in Libraries. London, Meckler, 1987.

**Biddiscombe, Richard:** End user revolution: CD-ROM, Internet and change role of the Information Professional. London, Library association, 1996.

**Edmunda, RA:** Prentice Hall Encyclopedia of Information Technology, 1987 Essential Guide dBase plus in Libraries. 1988.

**Faruqui Khalid Kamal:** Automation in Libraries. New Delhi, Anmol, 1997.

**Faruthi, S N Ed:** Library Techniques and Technologies Perspectives in Multimedia Library Development. New Delhi, Kanishka, 1997.

**Kent, A and Gajvin, T J Ed:** Information Technology: critical Choice for library Decision Makers. 1992.

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**Moorthy, A L:** Information Technology applications in academic Libraries in India with emphasis on networking services and information sharing, Ahmedabad, INFLIBNET, 1997.

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**Satyanarayana, R:** Information Technology and its facts. New Delhi, Manak, 1998.

**Unesco:** Reference Manual and CDS/ISIS Pascal Manual, 1989.

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**Elective Paper 3.5: INFORMATION SOURCES ON SOCIAL SCIENCES  
AND SCIENCE & TECHNOLOGY**

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**Unit 1: Print sources:** on various subject -Encyclopedia, biographical sources, geographical sources, statistical sources, year books, directories, Almanacs, bibliography, abstracting, indexing sources including Citation Indexes.

**Unit 2: Databases:** Types of databases – bibliographic database, full text database, factual information resources and databases; Subject based databases – like engineering (compendex), medical (pubmed), Biological science (biological abstracts) social sciences, physics, chemistry (chemical abstract), and other subject

**Unit 3: Electronic information sources:** Electronic Information resources: Meaning and definition, Growth and development, Types- E-Journals, e-Books, e-Theses, e-newspapers, Blogs, Wikis.- Free online Dictionaries, Non-free online dictionaries, Free Thesauri. - Encyclopaedia, Virtual Libraries, Subject gateways and Portals

**Unit 4: Electronic and Internet resources including information services and facilities;**

OCLC, FERA, UGC-INFONET, NASSDOC, ISID, SOSIG, REPEC, DELNET and CSIR e-journal Consortia. Databases: Science - INSPEC, Web of Science, Scopus. Social science-EconLIT, JSTOR, Indiastat.com, ERIC, EBSCO, JCCC.

**Unit 5: Search Engine:** OPAC and Web OPAC, Directories, Subject gateways, Internet Search engine, Meta search engine: Searching strategy, search logic

**Unit 6: Guidelines for finding authentication resources on Internet;**

**Unit 7: Intellectual property rights;** copyright, patent, plagiarism; tools for checking plagiarism, Different citation styles

**References**

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**Davinson Donald:** Reference service. London, Clive Bingley, 1980.

**Gopinath, MA:** Information Sources and Communication media. DRTC Seminar volume 1974.

**Grogan, Denis:** Science and Technology. Ed.4. London, Clive Bingley, 1982.

**Guha, B:** Documentation and Information Services: Techniques and Systems. Rev. Ed.2. Calcutta, World Press, 1983.

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**Lea, Peter W:** Printed Reference Materials. Ed.3 London, Library Association, 1990.

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**Sewa singh:** Handbook of Reference and Information Services. New Delhi, Crest Publishing house, 1997.

**Sharma, JS and Grover, DR:** Reference service and sources of Information. New Delhi, Ess Ess publications, 1992.

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**PAPER 3.6: INFORMATION PROCESSING AND RETRIEVAL**  
**(PRACTICAL) - I**

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Cataloguing of Non-Book Materials: Audio/Video recording, Computer generated files including web resources according to the latest edition of AACR-II(R)

Creation of Index Records using the methodologies of chosen indexing systems such as PRECIS

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**PAPER 3.7: INFORMATION AND COMMUNICATION TECHNOLOGY**  
**(PRACTICAL) - III**

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- MARC21 Tags
- Design and Development of database using WINISIS
- Design and development of digital library using Green Stone Digital Library (GSDL).
- SPSS: Chi-Square, Co-relation, T-test, ANOVA. Formulation of objectives, Hypothesis, Designing of questionnaire

(Each Student shall compulsorily maintain practical record and submit the same at the time of practical examination)

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**Fourth Semester**

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**PAPER 4.1 INFORMATION AND COMMUNICATION TECHNOLOGY  
(THEORY) - II**

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**Unit 1:** Telecommunication: Signals -analog/digital. Transmission media -Pair of wires, Coaxial, Optic fibers, Satellite communication; V-SAT, Wi-Fi, Microwaves, Modulation: AM & FM.

**Unit 2:** Networks: Concept, Definition, Need, Uses, Network Topologies, Types of Networks - LAN, MAN and WAN. Network interface cards, Hubs, Routers and gateways. Network Architecture: Comparison of Different Network Architectures; Network Protection and Security.

**Unit 3:** Communication Networks: NICNET, BSNL and ERNET. Library Networks in India: INFLIBNET, DELNET, CALIBNET. Consortia – Concept, Definition, Need, Types, Criteria for Selection of Consortia.

**Unit.4:** Electronic communication: Video Conferencing, Screen Sharing and E-mail. E-commerce, Network Protocols: TCP/IP, SMTP, FTP, HTTP

**Unit.5:** Internet for Library Applications: Collection Development, Technical processing Circulation, Internet resources and facilities, Internet Based Services

**Unit 6:** Cyber Laws: Electronic Document, DRM – Digital Signatures, Digital Certificates, Electronic Contracts, Regulation of Cyber Laws, IT act, 2000 (Govt. of India) and its Amendments, Digital Millennium Copyright Act. Cyber Crimes: Types.

**Unit 7:** Web: Evolution of Web- Web 1.0, Web 2.0, Web 3.0, Web 4.0. Web Designing: Tools, HTML, Evaluation Criteria.

**References**

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**Dawson, Andy:** Internet for Library and Information Service professional. Ed 2. London, ASLIB, 1997

**Douglas, E Corner:** The Internet. Ed 2. New Delhi, Prentice - Hall of India, 1999

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**Douglass E Corner and Ralph E Proms:** Computer Networks and Internals. Ed 2. Prentice Hall, 1999.

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**Ormes, Sarah:** Internet, Networking and Public library. London, Library association publishing, 1997.

**Parthasarathy, S:** Computer application to Libraries, IR and Networking. Bangalore, Sarada Ranganathan Endowment for library science, 1986.

**Satyanarayana, R:** Information Technology and its facets. New Delhi, Manak (P) Limited, 1996.

## PAPER 4.2 DIGITAL LIBRARIES

**Unit 1:** Digital library: Meaning and Definitions, Objectives, Characteristics, Evolution, Digital library collections. Digital Library Initiatives: NDLTD, NDL.

**Unit 2:** Digitization: tools and techniques, book scanners, scanning software, OCR, Document Management System.

**Unit 3:** Digital File Format- electronic documents, files and file formats. Study of different file formats- JPEG, MPEG, GIF, TIFF and PDF. Born digital and legacy documents.

**Unit 4:** DL architecture: Elements of a DL, DOI, Open URL, CrossRef and other aspects. Metadata – MARC21, DublinCore, TEI, METS, EAD and VRA Core and other resource discovery issues. Access Control and DRM, security and preservation issues

**Unit 5:** DL software. Studying the features of GSDL. Installing and developing a prototype using GSDL. Studying Dspace and understand the features of Dspace

**Unit.6:** Content Management Systems: Portals and Virtual Libraries, Softwares – Joomla, Drupal, Wordpress and Moodle. Understanding the deep web. Data validation, Data mining, Data Warehousing.

**Unit. 7:** Digital Library Management: Resource linking, Security and backup.

### References

**C. Xavier.** World Wide Web Design with HTML. New Delhi : TMH, 2000.

**G. G. Chowdhury.** Introduction to Digital Libraries. London: Facet Publishing, 2003.

**Leona Carpenter, Simon Shaw & Andrew Prescott.** Towards the Digital Library. London: LA, 1998.

**Lovecy,lan.** Automating library procedures: a survivor's handbook. London: Library Association, 1984.

**Paul Pedley.** The invisible Web: Searching the hidden parts of the Internet. London: Aslib, 2001.

**Reynolds, Dennis.** Library automation: Issues and applications. New York: Bowker, 1985.

**Satyanarayana, N. R.** A manual of computerization of libraries. New Delhi: Viswa Prakashan, 1995.

### **PAPER 4.3 (a): PUBLIC LIBRARY SYSTEMS AND SERVICES**

**Unit 1 :** Public Libraries: Meaning and Definition, objectives, Functions and role; History and Development of Public libraries in India including the role of Government and Non-Government agencies in India, UPLM (UNESCO Public Library Manifesto) -1949,1972, 1994, 1996

**Unit 2:** Public Library Legislation: Need and Importance. Public Library Acts in UK, USA, and India. Karnataka State Public Library Act 1965 and its amendment.

**Unit 3:** Public Library Users: Categories and their Information Needs, User Education; User Studies

**Unit 4:** Collection Development: Policies, Procedures and Problems. Resource Sharing and Networks, Examples of public library networks in USA, UK and India.

**Unit 5:** Human Resource and Financial Management: Size, type; selection and recruitment including cadre and recruitment rules. Qualification. Knowledge and skills, duties and responsibilities, Performance Evaluation and Continuing Education Programs (CEP).Finance and budgeting: Sources of finance, Preparation of Budget.

**Unit 6:** Public Library Services: Planning and Organization of various types of information services to the different categories of users. Library Publicity and extension activities, exhibition, seminar, book talks audiovisual programs; Mobile Library services;

**Unit 7:** Role of National and International Associations and Organizations: Raja Ram Mohan Roy Library Foundation, UNESCO, IFLA.

#### **References**

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**UNESCO:** UNESCO Public Library Manifesto. (1994)

**ALA:** Library Building and Equipment Institute, Guidelines for Library planners. Chicago, ALA 1960.

**ALA:** Minimum standards for Public Library Systems Chicago, ALA, 1966.

**Altm an (Ellen), Ed:** Local Public Library Administration in Association with international City Management Association. Ed.2 Chicago, ALA, 1980.

**Jefferson:** Library co-operation. London, Andre Deutsche, 1966.

**Eaton, T Ed.:** Contribution to American Library History. Champaign, Union Book Store, 1961.

**Kesavan, BS:** National Library of India. Calcutta, National library, 1961.

**Kaula,PN:** National Library of India: Critical Study. Bombay, Somaiya, 1970.

**McColvin,LR:** Public Library Extension. Paris, UNESCO, 1951.

**McColvin,LR:** Public library System of Great Britain; Report on its Present conditions with proposal of reorganization. London, Library Association, 1942.

**Mittal,RL. :** Public Library Law. Delhi, Metropolitan, 1971.

**Penna,C.A and others:** National Library and Information Services: Handbook for planned. London, Butter worths, 1977.

**Ranganathan,S.R. and Neelamegahan, A Ed.:** Public Library System .Bangalore, Sarada Ranganthan Endowment, 1972.

**Ranganathan,S.R.,** Library Legislation: Handbook of Madras Library Act. Madras Library Association, 1958.

### **PAPER 4.3 (b): ACADEMIC LIBRARY SYSTEMS AND SERVICES**

**Unit-1: Academic Libraries:** Meaning and Definition, Aims and Objectives, Functions, Characteristics and their role in an academic Environment: Brief History and Development of Academic Libraries in India.

**Unit-2:Role of the Organizations in Academic Library Development:** Role of UGC in Development of Academic Libraries, Powers and Functions of UGC, Committees Constituted by UGC for the development of College and University Libraries. Academic Libraries and New Education Policy.

**Unit-3: Collection Development and Management in Academic Libraries:** Meaning, Definition, Ideal Characteristics of Academic Library Collection, Book Selection Procedures, and Problems of Collection Development. Traditional Book Shops, Online Book Shops, URL's-Advantages. Preservation and Conservation. Weeding, Resource Sharing, Academic Library Networks, Role of INFLIBNET.

**Unit-4: Library Users:** User Categories, Information Needs, User Studies, User Education, Information Literacy.

**Unit-5 Library Services:** Reference Services, CAS Services, SDI Services, Abstracting and Indexing Services, Email Alerting Services, Electronic Document Delivery Services (EDDS), Data base Services. (Design and Planning of Various Library and Information Services including Evaluation).

**Unit-6: Library Building:** Need, Objectives, Design, Planning, Factors, Furniture's and Equipments.

**Unit-7: Human Resource and Financial Management:** Nature, Size, Selection and Recruitment, Qualifications Knowledge and Skills, Duties and Responsibilities, Training, Education and Performance Evaluation. Finance: Sources, Mobilization Budget Preparation.

### References

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- Fussler Herman H:** Functions of the library in the modern college. Chicago,
- Gelfand, MA:** University libraries for developing countries. Paris, UNESCO, 1968.
- Lyle, GR:** Administration of the college Library. Ed. 4, New York, Wilson, 1974.
- Metcalf, KD. Ed:** Studies in administrative problems. New Brunswick, Rutgers University press, 1960.
- Ranganthan, SR:** School and college libraries. Madras, Madras Library Association, 1942.
- Wilson,LR and Tauber, MF:** University Library. Ed.2, New York, Columbia University press, 1956.
- Datta, Marinder :** Academic Status for University and college Libraries in India. Delhi, IBB,1986.
- Duvery, Peter:** Staff Management in University and college Libraries. Oxford, Fergamn, 1976.
- Saini, AB:** Library Organization for Higher education. Delhi, Ess Ess publications, 1986.
- Sahai, Shri Nath:** Academic library system, Ess Ess Publications, New Delhi, 2009

## PAPER 4.3 (c): HEALTH SCIENCE LIBRARY SYSTEMS AND SERVICES

**Unit 1:** Health Science Library: Concept, Definition, Objective, Functions and Characteristics, growth and Development. Library Users: Categories and their Information Needs, User Education; User Studies

**Unit 2:** Information sources and services: A Survey of the basic resources used to locate information in the fields of medicine, nursing, allied health and healthcare administration, along with an information to the traditional and innovative services offered by health science libraries. Databases and electronic resources in medical and related areas, ADONIS

**Unit 3:** Collection Management: Collection Development Policies, Procedures and methods, resource Sharing and Networks, Conservation, Preservation, Evaluation and Weeding

**Unit 4:** Human Resources and Financial Management: nature, Size, Selection and recruitment, Qualification, Knowledge and Skills, Duties and responsibilities, Performance Evaluation and

Continuing Education program. Finance and Budgeting: Sources of Finance, Budget preparation and Management.

**Unit 5:** Library Services: Design and Planning of various types of information services to different categories of users including doctors, nurses and patients. National Information polices: Development of National information polices in the health and welfare area; exploitation of local information; access to external information.

**Unit 6:** Library Building: Design, Planning, Factors, Furniture and Equipment

**Unit 7:** Health Science information and global issues: The role and functions of National Library of Medicine, USA and its services; National and International organizations delivering health science information: WHO, ICMR; Department of Biotechnology, Council of Ayurveda and Siddha; Council of Homeopathy; Unani system: National Institute of Health and Family Welfare; CFTRI, NIN, CDRI, NIMHANS, and others.

## References

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**Varalakshmi, R S R:** Information Services in Medical college libraries. 1993

**Gupta, S Petal:** Information Technology and Health Science Libraries. MLAI Special publication, 1993

**Michael, Carmel** ed.: Health care Librarianship and Information work. Ed.2 1995

**Dixit, R P:** Information Management in Indian Medical Libraries. 1995

**Dossett, Patt, ed.:** Handbook of Special Librarian ship and information Services.Ed. 6, 1992

**Pushpa Dhyani:** Information Science and Libraries. New Deli, 1990.

## PAPER 4.4: PROJECT

Each candidate shall prepare a project on an approved topic under the guidance of a faculty member. The allotment of candidates for the project work shall be made at the end of the second semester.

## PAPER 4.5: LIBRARY CLASSIFICATION (PRACTICAL) - II

Classification of documents according to the latest edition of Universal Decimal Classification Scheme.

(Each Student shall compulsorily maintain practical record and submit the same at the time of practical examination)

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**PAPER 4.6: INFORMATION AND COMMUNICATION TECHNOLOGY**  
**(PRACTICAL) - II**

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Acquaintance with the use of Internet Resources and Services. Acquaintance with search engines and the search options and search techniques. Web Page Designing and Publishing on Net – Using Notepad and HTML Editors (Expression Web).

CMS Software – Drupal/Wordpress/Joomla

(Each Student shall compulsorily maintain practical record and submit the same at the time of practical examination)

**INTERNSHIP:**

Each candidate shall compulsorily under go one-month's Internship in a reputed library attached to the institutions of higher learning or R & D Institution as part of IV Semester. The internship shall be undertaken immediately after the completion of IV Semester Examination (Theory and Practical)