SECTION – A

(Common for all candidates)

Total Marks: 50

Ph.D. Entrance Examination Syllabus (Research Methodology)

Unit	Content
1	**Basics of Research:** Research: Meaning, Objective, Characteristics, Steps of research, Methods of research, Types of research – Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical.
2	**Research Problem and Research Design:** Introduction to Research Problem, Necessity of Defining the Problem, Selecting the Problem, Techniques Involved in Defining a Problem, Meaning and Types of Research Design, Important Concepts Relating to Research Design
3	**Sampling Design:** Census and sample survey, Implications of a Sample Design, Steps in sampling Design, Criteria of Selecting a Sampling Procedure, Characteristics of a Good Sample Design, Different Types of sample Designs, How to Select a Random Sample?, Random Sample from an Infinite Universe, Complex Random Sampling Designs
4	**Data Collection and Analysis:** Methods of Data Collection- Observation, Interview, Questionnaires, Schedules, Survey and Experimental. Selection of Appropriate Method for Data Collection, Different Techniques of Sampling such as Probability and Non-Probability, Basic Statistical Methods of Data Analysis such as Frequency distribution, Measures of central tendency, Measures of Dispersion, Coefficient of variation, correlation and regression.
5	**Research Ethics and Morals:** Environmental impacts and Ethical issues, Commercialisation, Copy right, Royalty, Intellectual property rights and Patent law, Plagiarism, Citation, Referencing style and acknowledgement.

SECTION – B

Total Marks: 50

Ph.D. Entrance Examination Syllabus (History)

Data, Information and Knowledge

Information life cycle: Generation, collection, storage and dissemination; Role of information in planning, management, socio-economic, cultural, educational and technological development; Information science relationship with other subjects, information society and knowledge society; Communication: Concept, types, theories, models, channels and barriers, trends in scholarly communication; Information industry: Generators, providers and intermediaries ; IPR and legal issues: Categories, conventions, treaties, laws; Plagiarism: Concept and types.; Right to information act (RTI), Information technology act ; National knowledge commission, National mission on libraries.

Historical Development of Libraries in India

Committees and commissions on libraries in India; Types of libraries: academic, public, special and national ; Library legislation and library acts in Indian states, the press and registration of books act, the delivery of books and newspapers (public libraries) act ; - Laws of library science; Library and information science profession: librarianship as a profession, professional skills and competences, professional ethics; Professional associations: National - ILA, ASLIC, IATLIS ; International - IFLA, ALA, CILIP, ASLIB, SLA; Role of UGC, RRRLF and UNESCO in Promotion and Development of Libraries; Library and information science education in India; Library public relations and extension activities; Type of users, user studies, user education; Information literacy: Areas, standards, types and models, trends in Information literacy.

Sources of Information

Primary information sources (print and electronic): Journals, conference proceedings, patents, standards, theses & dissertations, trade literature ; Secondary information sources (print and electronic): Dictionaries, encyclopedias, bibliographies, indexing & abstracting, statistical sources, handbooks and manuals; Tertiary information sources (print and electronic): directories, yearbooks, almanacs; Reference sources: Bibliographical, educational, language and geographical; Electronic information resources: Subject gate ways, web portals, bulletin boards, discussion forums / groups.; Databases: Bibliographic, numeric, full text, multimedia, open access databases; Institutional and human resources; Evaluation of reference sources and web resources.

Community Information Services

Reference service: Concept and types, referral services; Alerting services: CAS, SDI, Inter library loan and document delivery; Mobile based library services and tools: Mobile OPAC, mobile databases, mobile library website, library apps, mobile library instructions,

SMS alerts; Web 2.0 and 3.0, Library 2.0: Concept, characteristics, components, instant messaging, RSS feeds, podcasts, vodcasts, ask a librarian; Collaborative services: Social networks, academics social networks, social tagging, social bookmarking; National information systems and networks: NISCAIR, DESIDOC, SENDOC, ENVIS, INFLIBNET, DELNET, NICNET, ERNET, National Knowledge Network (NKN), Biotechnology information system network; International information systems and networks: INIS, AGRIS, INSPEC, MEDLARS, BIOSIS, ERIC, Patent information system (PIS), biotechnology information system (BIS); Library resource sharing and library consortia: national and international.

Universe of Knowledge Nature and Attributes

Modes of Formation of Subjects; Knowledge organization & classification: Theories, cannons, and principles, simple knowledge organization system (SKOS), taxonomies, folksonomy, trends in classification; Mapping of subjects in library classification schemes
- DDC, UDC and CC; Knowledge organization: Cataloguing cannons and principles, centralized and co-operative catalogue, library cataloguing codes: CCC and AACR-II; Standards of bibliographic record formats and description: ISBD, MARC 21, CCF, RDA, FRBR, Bibframe; Standards for bibliographic information interchange & communication: ISO2709, Z39.50, Z39.71.7. ; metadata standards: Dublin core, MARC21, METS, MODES, EAD; Indexing systems and techniques: Assigned pre-coordinate, post-coordinate, derived title-based, vocabulary control; Abstracting: types and guidelines; Information retrieval system: Features, components, models and evaluation.

Management

Management: Principles, Functions and Schools of thought; Library and Information Centers Management: book selection tools and principles, library acquisition, technical processing, circulation, serial control, maintenance and stock verification, preservation and conservation, hazards and control measures of library materials; - Human Resource Management: planning, job analysis, job description, job evaluation, selection, recruitment, motivation, training and development, performance appraisal, staff manual; Financial Management in Libraries: sources of finance, resource mobilization, budgeting methods, cost effective and cost benefit analysis, annual reports & statistics, library authority and committee; Project Management: SWOT, PEST, PERT / CPM; Total Quality Management (TQM): concepts, principles and techniques, six sigma, evaluation of services of libraries and information centers; Library building, furniture and equipments, green library building, information commons, security and safety; Management Information System (MIS), MBO, change management, disaster management, crisis management; Knowledge management: principles, tools, components and architecture; Marketing of library products and services: plan, research, strategies, mix, segmentation, pricing and advertising, management consultancy.

Computer Technology

Character representation (ASCII, ISCII, Unicode), computer hardware, software, storage devices, input and output devices; Types of software: system software, application software; Programming languages: object oriented, procedural, high level, scripting, web languages; Telecommunication: transmission channels, mode and media, ISDN, PSDN,

multiplexing, modulation, standards and protocols; Wireless communication: media, Wi- fi, Li-fi, satellite communication, mobile communication; Computer networks: topologies, types of networks – LAN, MAN, WAN; Internet web browsers, www, E-mail, search engines, meta and entity search engines; Internet protocols and standards: HTTP, SHTTP, FTP, SMTP, TCP/IP, URI, URL; Hypertext, hypermedia, multimedia, video conferencing, virtual reality, augmented technologies; Data security, network security, firewalls, cryptographic techniques, anti-virus software, anti-spyware, intrusion detection system.

Library Automation

Areas, planning, selection of hardware and software, implementation and evaluation, standards for library automation; Barcode, RFID, QR code, biometric, smart card;
features and applications; Digitization: planning, selection of materials, hardware, software, process; Digital library: Genesis, characteristics, types, architecture, standards, formats and protocols, DOI; Digital preservation: need, purpose, standards, methods, techniques, projects (national and international); Digital library initiatives; Institutional repositories: need, purpose, types and tools, institutional repositories in India, ROAR, DOAR, SHERPA-ROMIO; Content management systems: architecture, data integration, CMS software: selection, implementation and evaluation; Application of artificial intelligence, expert systems and robotics in libraries, cloud computing; Ontology: tools (RDF, RDFS, Potege), semantic web, linked data, big data, data mining, data harvesting.

Library and Information System

Academic library and information system; Public library and information system; Special library and information system; Health science library and information system; Corporate library and information system; Agricultural library and information system; Engineering and technological library and information system; Archive, Museums and Oriental Libraries; Community Information System; Information Services and System for Persons with Disability, Children and Women