

Annexure-I

Course Contents for the Eligibility Test for M.Phil/Ph.D

(A) Course Content of Research Methodology Component

The main objective is to assess the research capabilities of the candidates. Therefore the test is aimed at assessing research aptitude. They are expected to possess and exhibit cognitive abilities. Cognitive abilities include comprehension, analysis, evaluation, understanding the structure of arguments and deductive reasoning. Candidates are expected to possess general awareness and knowledge regarding sources of information and basic quantitative techniques employed in research. Following are the broad components to be tested:

I. Research Aptitude

- (i) Research: meaning, characteristics and types
- (ii) Step of research
- (iii) Method of research
- (iv) Research Ethics
- (v) Paper, article, workshop, seminar, conference and symposium
- (vi) Thesis writing: its characteristics and format.
- (vii) Nature of research problem: theoretical research, experimental research, case study, survey

II. Reading Comprehension :A passage to be set with questions to be answered

III. Library Resources and Communication

- i. Different types of data and their sources
- ii. Survey of literature
- iii. Sources of information
- iv. Bibliography
- v. Thesis writing: its characteristics and format.
- vi. Nature of research problem: theoretical research, experimental research, case study, survey

IV. Reasoning (Including Mathematical)

- i. Number series; letter series; codes
- ii. Relationships; classification

V. Logical Reasoning

- i. Understanding the structure of arguments
- ii. Evaluating and distinguishing deductive and inductive reasoning
- iii. Verbal analogies: Word analogy - Applied analogy
- iv. Verbal classification
- v. Reasoning Logical Diagrams: Simple diagrammatic relationship, multi - diagrammatic Relationship
- vi. Venn diagram; Analytical Reasoning

VI. Data Interpretation

- i. Sources, acquisition and interpretation of data
- ii. Quantitative and qualitative data
- iii. Graphical representation and mapping of data

VII. Information and Communication Technology (ICT)

- i. ICT : meaning, advantages, disadvantages and uses
- ii. General abbreviations and terminology
- iii. Basics of internet and e-mailing

VIII. Basic Statistical Techniques

- i. Uni-variate Analysis : Mean, Mode, Median, Standard Deviation
- ii. Bivariate / Multivariate analysis: Correlation, Regression
Probability and Probability distributions

IX. Higher Education System: Governance, Polity and Administration

- i. Structure of the institution of higher learning and research in India
- ii. Formal and distance education
- iii. State and Private domain of higher education
- iv. Professional/ technical and general education
- v. Governance, polity and administration
- vi. Educational commissions and higher education policy

X. Educational Methodology

- i. Teaching : Nature, objectives, characteristic and basic requirements
- ii. Learner's characteristics
- iii. Factors affecting teaching

- iv. Method of teaching
- v. Teaching aids
- vi. Evaluation systems

(B) COURSE CONTENT OF FUNCTIONAL ENGLISH LANGUAGE (There shall be 5 MCQs to test Vocabulary (5 marks) and 10 MCQs to test Grammar Skills (10 marks))

- **Parts of Speech and their Usages**
 - (i) Nouns (ii) Verbs (iii) Adjectives (iv) Adverbs (v) Prepositions (vi) Conjunctions (vii) Interjections (viii) Pronouns (ix) Demonstratives
- **Words and Word-formation Processes**
 - (i) Prefixes (ii) Suffixes (iii) Infixes (iv) Inflections (v) Derivation processes (from one category to another)
- **Elements of Sentence (SVOCA)**
 - (i) Subject (ii) Verb (iii) Object (iv) Complement (v) Adverbial
- **Types of Sentence and its Structure**
 - (i) Declarative sentences (ii) Interrogative sentences (iii) Imperative sentences (iv) Exclamatory sentences; also, (v) Simple sentence (vi) Compound sentence (vii) Complex sentence
- **Usages of Tenses in English**
 - i. Present tense (Simple, Progressive and Perfective aspects)
 - ii. Past tense (Simple, Progressive and Perfective aspects)
 - iii. Expression of futurity
- **Active and Passive Voice**
- **Direct and Indirect Speech**

(C) COURSE CONTENT FOR FUNCTIONAL KNOWLEDGE OF COMPUTER

(All three components shall have equal weight)

- I. **Research Aptitude: Computer Fundamentals**
 - i. **Basics of Computer:** Block structure of a computer, characteristics of computers, generation of computers, classification of computers
 - ii. **Types of Computers:** Mainframe computer, Mini and Desktop computers, Laptop, Personal Digital Assistant, Networked computers in terms of capacity, speed, cost and end user's utility

iii. **Computer Performance:** Parameters that affect computer's performance – CPU execution speed, Clock speed, RAM size, Cache, Disc capacity etc.

iv. **Character Codes:** ASCII, EBCDIC

II. Elements of a Computer Processing System

i. **Processor:** Understanding some of the functions of the CPU in terms of calculations, logical control and immediate access memory

ii. **Storage Devices and Media:** Compare the main types of memory storage devices in terms of speed, cost and capacity such as: diskette, zip disk, data cartridge, CD Rom, internal - external hard disk, Magnetic Tape, Magnetic Disk

iii. **Input- devices:** Various input devices: Mouse, Keyboard, Trackball, Scanner, Touch Pad, Light Pen, Joy Stick, Digital Camera and Microphone, etc.

iv. **Output - devices:** Printers, Plotter and Speaker, VDU etc.

v. **Input - Output Devices:** Touch Screens

vi. **Memory:** Understand different type of memory (RAM, ROM, EPROM, EEPROM, Flash RAM etc.), Measuring computer memory (Bit, Byte, KB etc.)

III. Software

i. **Types of Software:** System software, Application software

ii. **Operating System Software:** Functions of OS and brief introduction of some OS. Batch, multi-programming, time sharing, multiprocessing, PC operating system, network operating system, on-line and real time operating system

iii. **Application Software:** Common Application software such as: Word processing, Spreadsheet, Database, Web browsing, Desktop publishing

iv. **Programming paradigms and Languages:** classification, machine code, assembly language, programming paradigms and higher level languages.

(D) This component shall be based on the syllabi of Core courses/papers studied at Master Level in the concerned subject.