Annexure - 2 : Course contents for the Eligibility Test

(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 the 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. Steps 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
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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
   III. Probability and Probability distributions

IX. Higher Education System: Governance, Polity and Administration
   i. Structure of the institution of higher learning and research in India
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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, characteristics 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. Articles   x. Demonstratives

• Words and Word-formation Processes
  I. Prefixes   ii. Suffixes
  iii. Infixed   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 weightage)

1. **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
2. **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 types of memory (RAM, ROM, EPROM, EEPROM, Flash RAM etc.), Measuring computer memory (Bit, Byte, KB etc.)

3. **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