

## 1. Logical Reasoning

- **Coding-Decoding:** Letter shifting and substitution, Number-based coding, Word pattern encoding and decoding
- **Classification:** Based on numerical properties, Based on word/letter pattern differences, Series & Induction
- **Number Series & Patterns:** Arithmetic progressions, Geometric progressions, Mixed operations patterns, Missing term identification, Matching logic and sequence patterns
- **Direction and Position Puzzles:** Left-right shifting in rows, Positional arrangements
- **Analogy:** Word analogies, Number and letter analogies
- **Syllogisms and Logical Deductions:** Statements and conclusions, Venn diagram-based reasoning, Universal and particular statements, Comparison-based questions.

## 2. Quantitative Aptitude

- **Basic Arithmetic**
- **Simple and Compound Interest:** Interest calculation using principal, rate, and time
- **Profit, Loss & Discount:** Cost price, selling price, and profit/loss percent
- **Time, Speed, Distance and Work:** Work efficiency and combined work, Inverse proportionality
- **Ratio & Proportion:** Direct and inverse proportions

## 3. Basic Mathematics

- **Number System**
  - Natural, Whole, Integers, Rational, Irrational, Real Numbers
  - Surds and Indices (e.g.,  $\sqrt{-4}$ ,  $10^3$ )
- **Algebra**
  - Simplification of expressions
  - Quadratic equations

- Identities and expansions
  - Factorization
- **Arithmetic**
  - Percentages
  - Ratios and Proportions
  - Profit, Loss & Discount
  - Simple and Compound Interest
- **Geometry**
  - Types of angles
  - Triangle properties and angle sums
  - Perimeter and area of
  - Volume and surface area (optional at this level)
- **Mensuration**
  - Perimeter and Area calculations
  - Units and conversion
  - Application in word problems
- **Probability & Statistics**
  - Basic probability
  - Mean (average), median, mode
  - Simple data interpretation
- **Exponents and Powers**
  - Laws of exponents
  - Square and cube roots
- **Geometry**
  - Angles of triangle
  - Types of triangles
  - Angle of elevation (application-based)

#### **4. Basic Computer Knowledge**

- **Computer Fundamentals**
  - What is a Computer?
  - Characteristics and Functions of Computers
  - Types of Computers (Analog, Digital, Hybrid)
  - Basic Units of Data (Bit, Nibble, Byte, KB, MB, GB)
  
- **Components of a Computer System**
  - **Hardware**
    - Input Devices: Keyboard, Mouse, Scanner, etc.
    - Output Devices: Monitor, Printer, Speaker, etc.
    - Storage Devices: Hard Disk, CD/DVD, Pen Drive
    - Motherboard and CPU
  - **Software**
    - System Software (e.g., Operating System)
    - Application Software (e.g., MS Word)
    - Utility Software
    - Open Source vs Proprietary Software
  - **Memory and Storage**
    - RAM vs ROM
    - Cache Memory
    - Primary vs Secondary Memory
    - Volatile and Non-Volatile Memory
  
- **Operating Systems**
  - Functions of Operating Systems
  - Examples: Windows, macOS, Linux, Android
  - GUI vs CLI (Graphical User Interface vs Command Line)
  
- **Computer Languages**
  - Binary Language

- High-Level Languages: C, Python, Java (Basics only)
  - Markup Languages: HTML
- **Internet and Networking**
  - What is Internet?
  - ISP (Internet Service Provider)
  - Browsers and Search Engines
  - URL and its structure
  - Cloud Computing and its benefits
  - IP Address and DNS
- **Email and Online Services**
  - Email protocols
  - Telnet, FTP, VPN
- **Cyber Security**
  - Malware: Virus, Trojan Horse, Worms
  - Phishing and Online Scams
  - Data Protection and Privacy
  - Secure Password Practices
- **General IT**
  - BIOS and Booting Process
  - Bluetooth and PAN (Personal Area Network)
  - Network Types: LAN, WAN, PAN
  - Basics of Data Backup
- **Programming Introduction**
  - What is a programming language?
  - Examples: Python, Java, C
  - Logic and basic syntax

## **5. Basic English**

- **Grammar and Sentence Structure**
  - Parts of Speech: Continuous, Perfect, and Perfect Continuous Tenses
  - Subject-Verb Agreement, Sentence Types (Declarative, Interrogative, Imperative, Exclamatory)
  - Active and Passive Voice, Direct and Indirect Speech, Prepositions and Conjunctions, Conditional Sentences
- **Vocabulary and Word Usage**
  - Synonyms and Antonyms
  - Homophones and Homonyms
- **Idioms and Phrases**
  - Common Idiomatic Expressions
  - Proverbs and their meanings
- **Sentence Correction and Punctuation**
  - Error Spotting and Sentence Improvement
- **Figures of Speech:** Simile, Metaphor, Alliteration, Personification, Irony