

SYLLABUS FOR WRITTEN EXAMINATION AND SYSTEM TEST

PROGRAMME ASSISTANT (COMPUTER) – 100 MARKS

Time: 2 Hours | Maximum Marks: 100

Examination Pattern: The syllabus is based on the reference syllabus and expanded to include practical computer applications, MS Office, presentation, video editing and basic programming.

1. Reasoning, Numerical Ability & General Knowledge

- Problem solving and logical reasoning
- Analytical reasoning, data interpretation and data sufficiency
- Basic numerical analysis and quantitative aptitude
- General knowledge and current affairs relating to India and Rajasthan
- Basic computer-related general awareness

2. Computer Fundamentals & Information Technology

- Computer generations, types and applications
- Hardware, software, operating systems and utility software
- Input/output devices, memory, storage and file management
- Number systems and basic computer terminology
- Internet, web browsers, email, cloud computing and digital services
- Cyber security, passwords, malware, antivirus, firewall and safe internet practices

3. MS Word / Word Processing

- Creating, editing, formatting and printing documents
- Fonts, paragraphs, styles, themes, page setup, headers and footers
- Tables, pictures, shapes, symbols, hyperlinks and text formatting
- Page numbering, columns, find and replace, spell check and document protection
- Mail Merge, templates and basic document automation
- Working with PDF, saving/exporting and common file formats

4. MS Excel / Spreadsheet & Data Analysis

- Workbook, worksheet, rows, columns, cells and ranges
- Data entry, formatting, sorting and filtering
- Basic and advanced formulas and functions: SUM, AVERAGE, COUNT, IF, AND, OR, MAX, MIN, ROUND, COUNTIF/SUMIF

- Relative, absolute and mixed cell references
- Charts, graphs, tables and basic dashboards
- Data validation, conditional formatting and basic Pivot Tables
- Printing, page setup and spreadsheet protection

5. MS PowerPoint / Presentation

- Creating and designing presentations
- Slides, layouts, themes, templates and slide master
- Text, tables, pictures, SmartArt, charts, audio and video
- Animations, transitions and hyperlinks
- Slide show, presenter tools, notes and exporting presentations

6. Database Management System (DBMS)

- Database concepts, DBMS and database applications
- ER diagrams, entities, attributes, relationships and keys
- Relational and object-oriented database concepts
- Database design, normalization and data integrity
- Tables, queries, forms and reports
- SQL basics: SELECT, INSERT, UPDATE, DELETE, WHERE, ORDER BY, GROUP BY and JOIN
- Views, constraints, stored procedures, triggers and transaction concepts
- Data abstraction, data independence and relational algebra basics

7. Data Communication & Computer Networks

- Computer network architecture and types of networks
- LAN, WAN, MAN, topology and network devices
- OSI and TCP/IP models
- Physical layer and data link layer concepts
- Framing, error detection, retransmission and flow control
- Circuit switching and packet/message switching
- Multiple access methods, ALOHA, CSMA/CD and Ethernet
- IP addressing, DNS, Internet, TCP/IP and basic routing
- Firewalls, intrusion detection and prevention, network security

- Network management and interoperability

8. System Analysis, Design & Software Engineering

- System concepts, characteristics, elements and boundaries
- System development life cycle (SDLC), feasibility study and recognition of needs
- Prototyping, system planning and system development tools
- DFD, data dictionary, decision trees, decision tables and IPO charts
- Structured analysis, input/output form design and requirements specification
- Software engineering paradigms and software life cycle
- System analysis, cost-benefit analysis and planning
- System design, modular design, data/procedural design and object-oriented design
- Verification, validation and testing; testing methods and strategies
- Software maintenance, maintainability, maintenance tasks and side effects

9. Programming Concepts & Basic Programming

- Programming fundamentals, algorithms and flowcharts
- Variables, constants, data types, operators and expressions
- Input/output and basic program structure
- Conditional statements and loops
- Arrays, strings and basic data structures
- Functions/methods, parameters and return values
- Basic debugging, error handling and program testing
- Object-oriented concepts: classes, objects, abstraction, encapsulation, inheritance and polymorphism
- Exceptions and exception handling
- Basic Java programming: syntax, variables, control flow, arrays, strings, classes and objects
- Introduction to HTML/CSS/JavaScript or another basic scripting language for web applications
- Introduction to .NET/Visual programming concepts
- Basic file handling and simple database connectivity concepts

10. Video Editing, Digital Content & Multimedia

- Fundamentals of digital media: image, audio and video formats
- Video resolution, frame rate, aspect ratio and compression

- Importing and organizing media files
- Timeline-based video editing: cut, trim, split, crop and join
- Transitions, titles, captions and text animation
- Audio editing, voice-over, background music and volume control
- Colour correction, basic effects and speed control
- Keyframes and simple motion effects
- Exporting videos for YouTube, social media and presentations
- Basic copyright, royalty-free media and responsible use of digital content

Section	Subject
1	Reasoning, Numerical Ability & GK
2	Computer Fundamentals & IT
3	MS Word
4	MS Excel
5	MS PowerPoint
6	DBMS
7	Computer Networks
8	System Analysis & Software Engineering
9	Programming Concepts & Basic Programming
10	Video Editing & Multimedia

Note:

- Questions may be of multiple-choice/objective type.
- The above syllabus is broad and is intended to provide general guidance; questions may be drawn from any listed topic.
- Practical-oriented questions may be included for MS Word, Excel, PowerPoint, programming and video-editing concepts.