

**Scheme of Examination :**

Paper	Subject	No. of Questions	Marks	Time
(I)	Art & Culture, History, Geography, General Science and Current Affairs of Rajasthan & General Ability	100	100	2 Hours
(II)	Pedagogy, Mental Ability, Basic Numeracy, Data Interpretation, Fundamentals of Computer, Data Processing, Programming Fundamentals, Data Structures and Algorithms, Computer Organization and Operation System, Communication and Network Concepts, Network Security, Database Management System, System Analysis and Design, Internet of things and it's Applications	100	100	2 Hours

**Note :**

- All questions will be objective multiple choice type.
- There will be negative marking of 0.5 marks for each wrong answer.

## Syllabus

### PAPER-I

- Art & Culture, History, Geography, General Science and Current Affairs of Rajasthan.**
- General Ability in include following points:-**
  - Logical Reasoning and Analytical Ability.
  - Decision Making and Problem Solving.
  - General Mental Ability.
  - Basic Numeracy – Numbers and their relations, orders of magnitude etc. (Class X level)
  - Data Interpretation – Charts, Graphs, Tables, Data Sufficiency etc. (Class X level)

### PAPER-II

- Pedagogy**
- Mental Ability:** Decision Making and Problem Solving, Data Interpretation, Data Sufficiency, Logical Reasoning and Analytical Ability, Major Developments in the field of Information Technology.
- Basic Numeracy:** Numbers and their relations, orders of magnitude etc. (Class X level)
- Data Interpretation:** Charts, Graphs, Tables, Data Sufficiency etc. (Class X level)
- Fundamentals of Computer:** Overview of the Computer System including I/O Devices, Pointing Devices and Scanner, Representation of Data (Digital VS Analog,

Number System – Decimal, Binary & Hexadecimal), Introduction to Data Processing, Concepts of Files and it's types.

- Data Processing:** Word Processing (MS-Word), Spread Sheet Software (MS-Excel), Presentation Software (MS-Power Point), DBMS Software (MS-Access).
- Programming Fundamentals:** Introduction to C, C++, Java, DotNet, Artificial Intelligence (AI), Machine Learning, Python and Block Chain, Principles and Programming Techniques, Introduction of Object Oriented Programming (OOPs) Concepts, Introduction to “Integrated Development Environment” and it's advantages.
- Data Structures and Algorithms :** Algorithms for Problem Solving, Abstract Data Types, Arrays as Data Structures, Linked list V/S Array for storage, Stack and stack operations, Queues, Binary Trees, Binary Search Trees, Graphs and their representations, Sorting and Searching, Symbol Table, Data Structure using C & C++.
- Computer Organization and Operation System :** Basic Structure of Computers, Computer Arithmetic Operations, CPU and Instructions, Memory Organization, I/O Organization, Operating Systems Overview, Process Management, Finding and Processing Files.

**10. Communication and Network Concepts:**

Introduction to Computer Networks, Introduction: Network Layers/Models, Networking Devices, Fundamentals of Mobile Communication.

**11. Network Security:** Protecting Computer Systems from viruses and malicious attacks, Introduction to Firewalls and its utility, Backup and Restoring Data, Networking(LAN & WAN), Security, Ethical Hacking.**12. Database Management System :** An Overview of Database Management, Architecture of Database System, RDBMS, Database Design, Manipulating Data, NoSQL Database Technologies, Selecting right database.**13. System Analysis and Design:** Introduction, Requirement Gathering and Feasibility Analysis, Structured Analysis, Structured Design, Object-Oriented Modelling using UML, Testing, System Implementation and Maintenance, Other Software Development Approaches.**14. Internet of things and its Applications:** Introduction to Internet Technology and Protocol, LAN, MAN, WAN, Search Services /Engines, Introduction to online and offline messaging, World Wide Web Browsers, Web Publishing, Basic Knowledge of HTML, XML and Scripts, Creation and Maintenance of Websites, HTML interactivity tools, Multimedia and Graphics, Voice Mail and Video Conferencing, Introduction to E-Commerce.