ENGINEERS ACADEMY
Your GATEway to Professional Excellence
IES • GATE • PSUs • JTO • IAS • NET

GOVERMENT OF RAJASTHAN
DEPARTMENT OF PERSONNEL
(A-GR-II)

No.F. 1(3)DOP/A-11/2021 Jaipur, dated: 7 **Jan. 2022**

NOTIFICATION

In exercise of the powers conferred by the proviso to Article 309 of the Constitution of India, the Governor of Rajasthan hereby makes the following rules further to amend the Rajasthan Educational (State and Subordinate) Service Rules, 2021, namely :-

1. **Short title and commencement :**
   (1) These rules may be called the Rajasthan Educational (State and Subordinate) Service (Amendment) Rules, 2022.
   (2) They shall come into force with immediate effect except amendment of rule 16, which shall be deemed to have come into force w.e.f. 26.07.2021

2. **Amendment of rule 16 :** The existing provision (i) to rule 16 of the Rajasthan Educational (State and Subordinate) Service Rules, 2021, hereinafter referred to as the said rules, shall be substituted by the following, namely:-
   (i) the upper age limit mentioned above shall be relaxed by,-
      (a) 5 years in the case of male candidates belonging to the Scheduled Castes, Scheduled Tribes, Backward Classes, More Backward Classes and Economically Weaker Sections;
      (b) 5 years in the case of woman candidates belonging to General Category; and
      (c) 10 years in the case of woman candidates belonging to the Scheduled Castes, Schedules Tribes, Backward Classes, More Backward Classes and Economically Weaker Sections."

3. **Amendment of Schedule-II :** In Schedule-II appended to the said rules, after the existing **Group C: Physical Education Wing** and entries thereto, the following **Group D: Computer Wing** and entries thereto shall be added, namely **:-**

Group D : Computer Wing

1.	Senior Computer Instructor	50%	50%	Master in Engineering (M.E.)/ Master in Technology (M.Tech.) in Computer Science(CS)/ Information Technology (IT)/ Electronics & Communications Engineering (ECE)/ Electrical Engineering (EE)/ Electrical & Electronics Engineering (EEE)/ Electronics &	Basic Computer Instructor	Minimum five years experience on the post mentioned in col. 6	Candidate must have Post Graduate in the same subject/one of the subjects of his Graduation degree.

ENGINEERS ACADEMY
Your GATEway to Professional Excellence
IES • GATE • PSUs • JTO • IAS • NET
Delhi | Jaipur | Allahabad | Nagpur | Patna | Agra | Ranchi | LPU Campus | Ajmer | Kanpur | Jalandhar | Lucknow | Jodhpur | Kota | Bhopal
www.engineersacademy.org | www.onlineengineersacademy.org | www.eapublications.org | www.nimbus.org.in | Helpline # 809 444 1 777

				Telecommunication Engineering (ETE)/ Electronics & Instrumentation Engineering (EIE) OR M.Sc. in Computer Science (CS)/Information Technology (IT) OR Master in Computer Application (MCA)/'B' Level/'C' Level. OR Any equivalent or higher qualification recognised by the Government			
2.	Basic Computer Instructor	100%	,	Graduate and 'A' Level/PGDCA (Minimum one year) OR Bachelor in Engineering (B.E.)/ Bachelor in Technology (B.Tech.) in Computer Science (CS)/ Information Technology (IT)/ Electronics & Communications Engineering (ECE)/ Electrical Engineering (EE)/ Electrical & Electronics Engineering (EEE)/ Electronic Instrumentation & Control (EIC)/ Telecommunications	.....	_	_

				& Instrumentation (TIE) OR B.Sc. in Computer Science (CS)/Information Technology (IT) OR Bachelor in Computer Application (BCA) from a University established by the law in India OR Any equivalent or higher qualification recognised by the Government			

4. Amendment of Schedule - III : In Schedule-III appended to the said rules, after the existing serial number 9 and entries thereto, the following new item 10, 11 and entries thereto shall be added, namely :-

I. Scheme and syllabus of competitive examination for the posts of Senior Computer Instructor:-

The examination shall carry 200 marks. There will be two papers. Each paper shall be of 100 marks.

Paper I

1. The question paper will carry maximum 100 marks.
2. Duration of question paper will be 2.00 hours.
3. The question paper will carry 100 questions of multiple choices.
4. Paper shall include following subjects :-
   (i) Art & Culture, History, Geography, General Science and Current Affairs of Rajasthan.
   (ii) General Ability shall include following point :-
      A. Logical Reasoning and Analytical Ability.
      B. Decision Making and Problem Solving.
      C. General Mental Ability.
      D. Basic Numeracy - Numbers and their relations, orders of magnitude, etc. (Class X level)
      E. Data Interpretation - Charts, Graphs, Tables, Data Sufficiency, etc. (Class X level)
5. Negative marking shall be applicable in the evaluation of answer. For every wrong answer one third of the marks prescribed for that particular question shall be deducted.

Explanation: Wrong answer shall mean an incorrect answer out of multiple choices given for a question.

Syllabus and Scope of Papers: The syllabus and scope of paper for the examination will be as prescribed by the Commission / Board /Appointing Authority as the case may be, from time to time and will be intimated to the candidates within the stipulated time in the manner as the Commission / Board / Appointing Authority, as the case may be, deems fit.

Paper II

1. The question paper will carry maximum 100 marks.
2. Duration of question paper will be 2.00 hours.
3. The question paper will carry 100 questions of multiple choices.
4. Negative marking shall be applicable in the evaluation of answer. For every wrong answer one third of the marks prescribed for that particular question shall be deducted.

   Explanation: Wrong answer shall mean an incorrect answer out of multiple choices given for a question.

5. Paper shall include following subjects:-

(i) **Pedagogy**

(ii) **Mental Ability:** Decision making and Problem solving, Data Interpretation, Data Sufficiency, Logical Reasoning and Analytical Ability, Major developments in the field of Information Technology.

(iii) **Fundamentals of Computer:** Number system, arithmetic operations, introduction to various categories of computer language, functional details of Input and Output devices.

(iv) **Programming Fundamentals :** C, C++, Java, DotNet, Artificial Intelligence (AI), Machine learning, Python and Block Chain, programming, data types (Built in and user defined), Scope of variables, precedence of operators, control flow, functions, arrays pointers, structures and unions, enumerated data-types and file handling, command line arguments.

(v) **Object Oriented Programming using C++ and JAVA:** Objects and classes. Inheritance, polymorphism, event and exceptions handling, files and streams.

(vi) **Data structures and Algorithms:** 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.

(vii) **Algorithms:** Tree traversals, Branch and bound and greedy methods, complexity of algorithms.

(viii) **Digital Logic Systems:** Boolean expressions, K-maps, TTL and CMOS logic families, combinational logic design using half/full adders, Sub tractors, and multiplexer, synchronous sequential system design

(ix) **Computer Organization and Architecture:** Von-Neumann architecture of computers. Registers and micro operations, control logic, processor addressing and bus organization. Processor input/output and DMA. Memory organization and cache coherence.

(x) **Operating Systems:** CPU scheduling, Deadlocks, Memory management, file systems, disk scheduling. Concept of Client server architecture in distributed environment and RPC. Process, threads and their synchronization. Real Time OS: clock synchronization and task scheduling, System initialization, booting and handling user accounts. Backup and restore, Bourne shell programming for Linux.

(xi) **Database Management System:** E-R models, Relational algebra, calculus and databases, Integrity constraints, triggers, normalization, and indexing. Transaction processing, concurrency control and Relational Database Management System (RDBMS).

(xii) **Software Engineering:** Phases of System Development Life Cycle. System modeling. Software requirement specifications and DFDs. Introduction to software testing, software project management.

(xiii) **Data and computer networks:** Evolution of Networking, Data Communication terminologies, Transmission media, Network devices. TCP/IP & OSI/ISO reference models, functions of different layers, characteristics of physical media, multiplexing in physical layer, medium access protocols, introduction to 802.3, 802.4, 802.5, 802.11 LAN technologies, IP protocol including routing and congestion control, TCP and UDP, DNS.

(xiv) **Network Security:** Groups, rings and fields in finite space, Euler and Fermat's theorem, primality testing, security services and mechanisms, symmetric and asymmetric encryption including DES, AES, IDEA, RSA algorithms, key management in symmetric and asymmetric encryption, message authentication and hashing, email security, viruses and trusted systems, Networking (LAN&WAN), Security, Ethical Hacking.

(xv) **Basics of communication:** Channel capacity, attenuation, communication impairments, propagation of EM waves through free space (excluding free space models). PCM and delta modulation, WDM, brief introduction to GSM and CDMA based communication systems.

(xvi) **Web Development:** HTML/DHTML, Web Page Authoring Using HTML, Document Object Model Concept and Importance of Document Object Model, Dynamic HTML document and Document Object Model. Introduction to Cascading Style Sheet (CSS), Extensible Markup Language (XML), Basic of PHP and Java Script.

Syllabus and Scope of Papers: The syllabus and scope of paper for the examination will be as prescribed by the Commission/ Board/Appointing Authority as the case may be, from time to time and will be intimated to the candidates within the stipulated time in the manner as the Commission/ Board/ Appointing Authority, as the case may be, deems fit.

II. Scheme and syllabus of competitive examination for the posts of Basic Computer Instructor:-

The examination shall carry 200 marks. There will be two papers. Each paper shall be of 100 marks.

Paper I

1. The question paper will carry maximum 100 marks.
2. Duration of question paper will be 2.00 hours.
3. The question paper will carry 100 questions of multiple choices.
4. Paper shall include following subjects:-
   - (i) Art & Culture, History, Geography, General Science and Current Affairs of Rajasthan.
   - (ii) General Ability shall include following point :-
     - A. Logical Reasoning and Analytical Ability.
     - B. Decision Making and Problem Solving.
     - C. General Mental Ability.
     - D. Basic Numeracy - Numbers and their relations, orders of magnitude, etc. (Class X level)
     - E. Data Interpretation - Charts, Graphs, Tables, Data Sufficiency, etc. (Class X level)

5. Negative marking shall be applicable in the evaluation of answer. For every wrong answer one third of the marks prescribed for that particular question shall be deducted. **Explanation:** Wrong answer shall mean an incorrect answer out of multiple choices given for a question.

6. **Syllabus and Scope of Papers: -** The syllabus and scope of paper for the examination will be as prescribed by the Commission/ Board/Appointing Authority as the case may be, from time to time and will be intimated to the candidates within the stipulated time in the manner as the Commission/ Board/ Appointing Authority, as the case may be, deems fit.

Paper II

1. The question paper will carry maximum 100 marks.
2. Duration of question paper will be 2.00 hours.
3. The question paper will carry 100 questions of multiple choices.
4. Negative marking shall be applicable in the evaluation of answer. For every wrong answer one third of the marks prescribed for that particular question shall be deducted. **Explanation:** Wrong answer shall mean an incorrect answer out of multiple choices given for a question.
5. Paper shall include following subjects:-

(i) **Pedagogy**

(ii) **Mental Ability:** Decision making and Problem solving, Data Interpretation, Data Sufficiency, Logical Reasoning and Analytical Ability, Major developments in the field of Information Technology.

(iii) **Fundamentals of Computer:** Overview of the Computer System including input-output devices, pointing devices, and scanner. Representation of Data (Digital versus Analog, Number System - Decimal, Binary & Hexadecimal), Introduction to Data Processing, Concepts of files and its types.

(iv) **Data Processing:** Word Processing (MS-Word), Spread Sheet Software (MS Excel), Presentation Software (MS Power Point), DBMS Software (MS-Access).

(v) **Programming Fundamentals:** Introduction to C, C _ I i , 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 its advantages.

(vi) **Data structures and Algorithms:** Algorithms for Problem Solving, Abstract data types, Arrays as data structures, linked list vls 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++.

(vii) **Computer Organization and Operation System:** Basic Structure of Computers, Computer Arithmetic Operations, Central Processing Unit and Instructions, Memory Organization, I/O Organization, Operating Systems Overview, Process Management, Finding and processing files.

(viii) **Communication and Network Concepts:** Introduction to Computer Networks, Introduction: Networks layers/Models, Networking Devices, Fundamentals of Mobile Communication.

(ix) **Network Security:** Protecting Computer Systems from viruses & malicious attacks, Introduction to Firewalls and its utility, Backup & Restoring data, Networking (LAN & WAN), Security, **Ethical Hacking.**

(x) **Database Management System:** An Overview of the Database Management, Architecture of Database System, Relational Database Management System (RDBMS), Database Design, Manipulating Data, NoSQL Database Technologies, Selecting Right Database.

(xi) **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.

(xii) **Internet of things and its application** :Introduction of Internet Technology and Protocol, LAN, MAN, WAN, Search Services/Engines, Introduction to online & offline messaging, World Wide Web Browsers, Web publishing, Basic knowledge HTML, XML and Scripts, Creation & maintenance of Websites, HTML interactivity Tools, Multimedia and Graphics, Voice Mail and Video Conferencing, Introduction to e-Commerce.

Syllabus and Scope of Papers: . The syllabus and scope of paper for the examination will be as prescribed by the Commission/ Rajasthan Staff Selection Board/Appointing Authority as the case may be, from time and will be intimated to the candidates within the stipulated time in the manner as the Commission/ Rajasthan Staff Selection Board/ Appointing Authority, as the case may be, deems fit."