SYLLABUS FOR THE POST OF TECHNICIAN: COMPUTER SCIENCE & ENGINEERING

Mental Ability, Reasoning and Mathematical Skills:

Analogy, series completion, coding-decoding, blood relations, logical venn diagrams, alphabetical test, number ranking and time sequence test, *mathematical* operations, arithmetical *reasoning*, data interpretation, data sufficiency, cubes and dice, construction of sequences and triangles.

Mathematics based on tenth standard of CBSE

Computer awareness

Components of a computer system, specifications of a computer system, Input and output devices and installation of printers and other input output devices., Introduction to Internet and Internet Applications, MS windows, MS-Word, MS-Excel, MS Power Point, MS Access, Computer Networking, Computer shortcut keys, Virus and virus protection, Operating System types.

English Language Proficiency

English language based on tenth standard of CBSE

Post Specific

1	**Computer fundamentals & Applications**: Evolution of Computers, Application: MS-Word, MS-Excel & MS-Power Point, Open source software, System software, Compilers.
2	**Digital Electronics & Computer Architecture :** Number Systems, Logic Gates, Boolean Algebra, Combinational & Sequential Logic, Memory Organization, Cache Memory, Instruction formats & Addressing Modes, I/O system, DMA controller.
3	**Computer Hardware & PC Organization:** Component of computer system & their interconnection, Types of Memory, Peripherals and Interfacing, Microprocessor 8085/8086: Architecture, Instruction sets, interfacing; Microcontrollers.
4	**Programming & Data Structures:** Constants, variables and data types, Operators, Type Casting, Loop, Control Statements, Functions, Structures and Union, Files, **Data Structures:** Arrays, Pointers, Stack, Queue, Linked List, Tree, Searching & Sorting Algorithms, **Object Oriented Programming using Java:** OOPs Fundamentals : Classes, Object, Abstraction, Encapsulation; Language Constructs, Class Members, Private Vs Public Vs Protected, Constructor, Overloading, Inheritance, Exception Handling.
5	**Computer Networks And Security:** Networking Model; OSI & TPC/IP, Layers, Protocol And Services, Functionality Of Different Layer, Networking Topologies, Connectivity standard & Devices: Transmission Media : Guided & Unguided Media; Ethernet, LAN, WAN, Routers, Gateways, Bridge, Switches. **Network installation & Management:** MAC Address, IP Addressing, NAT, Trouble Shooting Tools for wired & wireless networks. **Security:** Internet Viruses, Internet Security Issues, Firewall, Data Encryption, Digital Signatures and Certificates.

6	**Internet & Web Technologies:** Internet Service Provider, URL, Domain Names, Client-Server Architecture, Web Server & hosting, Proxy Server, Email Server, Web Browsers, Website Design & Development : HTML Programming: Syntax and Rules, GUI Enhancement Technologies such as CSS, Java Script, Server-Side scripting, Multimedia & Animation tools for web designing; Search Engine Optimization.
8	**Operating System:** Operating System, Types of OS, Processes life cycle, PCB, CPU scheduling, Synchronization, Deadlock, Memory management and virtual memory, Language processing : Pre-processor, Assemblers, Loaders and Linkers, Compilers, File systems, I/O systems, Protection and security.
9	**LINUX :** Basic Architecture of Unix/Linux System, File System & Structure, Linux Commands for files and directories, Creating and Editing Files, System Administration, Role of System Administrator, Managing User Accounts.
10	**DBMS fundamentals:** Data Models, RDBMS, Database design (integrity constraints, normal forms), E-R Model, Query Language; SQL: Create, Insert, Update, Delete, Select, DDL, DML and DCL Statements.