



TEACHERS' RECRUITMENT BOARD, TRIPURA (TRBT)
EDUCATION (SCHOOL) DEPARTMENT, GOVT. OF TRIPURA
SYLLABUS: COMPUTER SCIENCE
SELECTION TEST FOR POST GRADUATE TEACHER:2022

Unit-I

- Introduction to computer system, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (Bit, Byte, KB, MB, GB, TB, PB), types of memory, RAM, ROM, EPROM, DRAM, SRAM, SDRAM.
- Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators, application software.
- Operating system (OS), functions of operating system, OS user interface.
- Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number system.

Unit-II

- Basics of Internet, different network type, PC based network, features of Internet and component of Internet, cyber laws Internet security, concept of servers and clients.
- Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber-crime.
- Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying.
- Safely accessing web sites: malware, viruses, trojans, adware.
- Indian Information Technology Act (IT Act).

Unit-III

- Introduction to files, types of files (Text file, Binary file, CSV file).
- Text file: opening a text file, closing of a text file, opening a file using with clause, manipulation of data in a text file.
- Binary file: basic operations on a binary file, open using file open mode, close a binary file, import pickle module.
- CSV file: import CSV module, open CSV file, closing of CSV file.

Unit-IV

- Evolution of networking, introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET).
- Data communication, concept of communication, components of data communication, measuring capacity of communication media (bandwidth, data transfer rate), IP address.
- Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card).
- Types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree).
- Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP.

Unit-V

- Device and file management: Disk scheduling, Disk structure, Disk management.
- File Systems: Function of file system, File access and allocation methods.
- Directory Systems: Structured Organizations, Directory and file protection mechanisms.
- CPU Scheduling: Scheduling criteria, Levels of scheduling, scheduling algorithms, multiple processor scheduling.
- Deadlocks: Deadlock characterization, Deadlock prevention and avoidance, Deadlock detection and recovery.
- Linux and Windows.

Unit-VI

- Principles of OOP, procedure oriented programming vs. object oriented programming, application of OPPs, object oriented modeling and design, object oriented languages.
- Structure of C++ program; creating, compiling, linking and executing a C++ program; Tokens, keywords, identifiers, expressions and control structures.
- Managing console I/O operations, C++ streams, C++ stream classes, unformatted I/O operations, formatted console I/O operations.
- Evolution of Programming paradigms, Object based and object oriented theme, Advantages of OOPs.

Unit-VII

- Numerical Methods, Solving Set of Linear Equations, Solving Non-linear Equations, Solving Differential Equations, Numerical Integration.
- Microcomputer based system, Microprocessor Architecture and Memory Interfacing.
- Programming 8085.
- Microprocessor 8086.

Unit-VIII

- Basic concepts of Graphics Devices.
- Graphic Kernel System.
- Basic geometrical shapes formation algorithms.
- Two and Three Dimensional Transformations.
- Two and Three Dimensional Clipping.

Unit-IX

- Cryptography.
- Finite Field and Number Theory
- Hash Functions and Digital Signature
- E-Mail Security
- IP Security
- Web Security

Unit-X

- Basic concepts of Electronic Commerce.
- Electronic Data Exchange.
- Planning for Electronic Commerce.
- Internet Marketing.
- Data Warehousing (DWH).
- Database Management System
- Digital Image Processing
- Programming using Python.
- Basic concepts Advanced Java and its application.
