

**DETAILED SYLLABUS FOR THE POST OF JUNIOR
INSTRUCTOR (COMPUTER HARDWARE AND NETWORK
MAINTENANCE)**

(Industrial Training) - Direct Recruitment

(Cat.No:043/2022, 148/2022)

MODULE – I (5 Marks)

Introduction to **current and voltage-Resistors-color coding-tolerance value-resistors in series and parallel-Ohms law-Kirchooff's law-**

Inductance-inductive reactance-mutual inductance-coefficient of coupling-Different types of transformers

Capacitors-capacitors in series and parallel-Semiconductors-different types-breakdown voltage-Diodes-Types of Rectifiers – Half wave and Full wave-ripple factor – Zener Diode-Transistors-biasing-Basic Logic Gates.

MODULE – II (Mark 15)

Introduction to **computers generation- Types of cabinets-Motherboard form factor-Different types of cables and connectors-ports (Serial, Parallel, USB,VGA,DVI,HDMI etc)- Chipsets -Expansion slots and cards-SMPS.**

Functions of **CPU- Cache-Types of Processors (Intel Celeron-dual core-i3-i5-i7-AMD)-Types of Memory- RAM, ROM, DRAM, PROM, EPROM, EAPROM, EEPROM -Hard Disk-Solid State Drives- Floppy Drives-Optical storage drives -Tracks and Sectors-cylinders-Interfaces-IDE-SATA-SCSI-BIOS-UEFI- POST-CMOS BIOS settings-RAID-MBR-GPT. Boot loader-Disk formatting and partitioning, disk defragmentation.**

MODULE – III (Mark 10)

Input devices- Mouse Keyboard- Barcode reader-digitizer-Biometric devices- Touch screens Gamepads and Joysticks- Multimedia input devices- Web cams- MIDI devices- Digital Cameras and Cam coders-

Output devices-- Speakers- Display devices-Printers

Printer Classifications

Printer-Dot matrix –Laser-Ink jet-Line printer-Plotters

Scanners

Scanner-Barcode Scanner-Network scanner.

MODULE – IV (Mark 10)

Introduction to Operating Systems- MS-Windows- Linux - Main features of Windows OS- System Software-Operating Systems-Compiler- Application Software's. -Antivirus software's-Data backup and recovery software. DOS commands-Power shell commands .Linux-Basic commands-file systems-shell-file permission-Windows server-Active directory-DNS-Linux server.

MODULE – V (Mark 10)

MS Word- Text Formatting Features – Paragraph Change Case, Font, Tabs, Drop Cap, Bullets and Numbering, Advanced Formatting Features – Borders and Shading- , Caption, Columns, Text Box, Footnote, Tables and Drawing Features – Insert Table, Draw Table, Formula, Sort, Forms Graphics – Word Art and Clip Art, Tools – Mail Merge, Spelling and Grammar, Thesaurus, Autocorrect.

MS Excel – Worksheets, Cell, Cell Range Operations, Fill Series, Worksheets Functions – sum, average, if-formula- Statistical Functions- Mathematical Functions -Sort- Filter .

MS Power point –Slide show-insert picture-theme-format text-animation –object (Including Shortcuts).

MODULE – VI (Mark 10)

Networking Fundamentals

Computer Networks- Client Server and peer to Peer networking concepts

Network topologies –Ring-Bus-Tree-Mesh

Types of Networks- LAN-WAN-MAN-PAN-CAN

WiFi- Bluetooth - 3G- 4G- 5G-technology.

Ethernet-UTP-STP–Coaxial cables-Connectors-RJ45-RJ11-colour coding of CAT5 cable-568A and 568B conventions

Data communication-analog- digital-simplex- half duplex-full duplex.

Network components- Modems-Hub-switch-Router-Gateway-repeater-Firewall

VLAN Basics-Network simulation software's

MODULE – VII (Mark 10)

Introduction to TCP/IP

TCP/IP-OSI protocols-Different Layers in OSI and TCP/IP model-IP addressing-classes of Ip address- IPv4-IPv6-subnet mask.

Concept of **Logical and Physical Addresses-Sub netting and super netting**

MODULE-VIII (Mark 15)

Network Protocols

Overview of various Network Protocols-FTP-TELNET-SMTP-HTTP-SNMP-LDAP-SSH-NTP-IPP-HTTPS

Concept of DHCP Server..concept of Firewall and proxy server-VPN-WEB SERVER-NFS-IIS-SAMBA-cloud computing

ISP-UTM-SSID

Remote desktop softwares

MODULE-IX (Mark 10)

Internet and Web Browser

Introduction to www -Concept of Internet,Search engine-browsers.

Concepts of Domain Naming Systems

Concept of Electronic Mail-BCC-CC-Inbox-Outbox-SPAM

MODULE-X (Mark 5)

IT Act and Law

Introduction to Cyber Security

Introduction to Cyber laws and IT Act

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.