Syllabus for the Trade of
"COMPUTER NETWORK ASSISTANT"
Under MES
Duration : 500 Hours. / 13 Weeks / 3 months

Week No.	Practical	Theory
1	***Components of the Computer Network, Crimping & Punching and Cabling*** Familiarization with various Network devices, Connectors and Cables. Understanding the Layout of network. Crimping practice with straight and cross CAT 5 cables. Punching practice in IO Box and patch panel. Crimping and making cables. Create cabling in a lab with HUB/Switch and IO Boxes and patch panel. Fitting Switch Rack.	Introduction to Computer Networks – Advantages of Networking, Peer-to-Peer and Client/Server Network. Network Topologies – Star, Ring, Bus, Tree, Mesh, Hybrid. Type of Networks – Local Area Networks (LAN), Metropolitan Area Networks (MAN), Wide Area Networks (WAN) and Internet, Ethernet, Wi-Fi, Bluetooth, Mobile Networking, Wire and wireless Networking. Difference between Intranet and Internet. Communication Media & Connectors – Unshielded twisted-pair (UTP), shielded twisted-pair (STP), Filber Optics and coaxial cable: RJ-45, RJ-11, BNC. Understanding color codes of CAT5 cable. 568A and 568B convention. Introduction to Data Communication – Analog and Digital Signals, Simplex, Half-Duplex and Full-Duplex transmission mode.
2	***Install & configure a Network,*** Installing & Configuring a Peer-to-Peer Network using Windows Software. Making cables by crimping. Connect computers using Bluetooth. Connecting computers using Wi-Fi configuration. Basic Programmable switch Configuration	OSI Model - The functions of different layers in OSI model Network Components – Modems, Firewall, Hubs, Bridges, Routers, Gateways, Repeaters, Transceivers, Switches, Access point, etc. – their functions, advantages and applications.
3	***IP Addressing & TCP/IP*** IP Addressing technique(IP4/IP6) and Subnetting and Supernetting the network.	Protocols, TCP/IP, FTP, Telnet etc., Theory on Setting IP Address(IP4/IP6) & Subnet Mask, Classes of IP Addressing.
4	***Other Network Protocols*** Working with SMTP, TELNET, FTP, HTTP, SNMP etc. Practice on configuring DHCP.	Simple Mail Transfer Protocol (SMTP), Telnet, File Transfer Protocol (FTP), Hyper Text Transfer Protocol (HTTP), Simple Network Management Protocol (SNMP). Network Security Concept of Dynamic Host Control Protocol
5	***Sharing Resource & Internet connection.*** Sharing Resource and Advance Sharing Setting. Installing Proxy Server. Exposure and using Internet. Setting E-mail accounts. Conferencing.	Concept of Internet. Architecture of Internet. DNS Server. Internet Access Techniques, ISPs and examples(Broadband/Dialup/Wifi). Concept of Social Networking Sites, Video Calling & Conferencing.

	Installing and Configuring Internet Connection on a PC using Broadband or Dongle.	Concept of VIRUS and its Protection using Anti Virus, UTM and Firewall.
6	***Network Protection and troubleshooting.*** Setting up basic protection using public keys and MAC address filters. Integrate wired with wireless network. Power over Ethernet(PoE). Troubleshooting wired and wireless network.	Collaborating using wired and wireless networks, Protecting a Network, Network performance study and enhancement.
7	***Control & monitoring of network devices.*** Setting up of basic collaboration tool like NetMeeting for activities like chat, application sharing, remote desktop access and control, VoIP. Setup IP camera for basic surveillance scenario, logging and monitoring of devices / locations.	Surveillance using network devices, collaboration on network for team optimization and support activities. Remote management of devices.
8-9	***Server Installation & Basic Configuration.*** Install and configure Windows Server Configure services like Active Directory, DNS and DHCP. Configuration of broadband modem and sharing internet connection. Linux Network Tools to Check / Maintain / Manage Network.	Server concepts, Installation steps, configuration of server. Concept of Active Directory and DNS. Setting up of DHCP, Routing and remote access.
10	***Network Security*** Practice on firewall technologies to secure the network perimeter. Practice LAN security considerations and implement endpoint and Layer 2 security features. Wi-fi configuration to implement security considerations.	***Network Security*** Modern Network Security Threats and the basics of securing a network. Secure Administrative Access, LAN security considerations. Cryptography. Wi-fi security considerations.
11	***Internet and Web Browser*** Practice web browsing using popular web browsing software, Configuring web browser. Search for content using popular search engines. Use favourite folder for browsing quickly. Downloading & Printing Webpages. Using e-mail – Opening & configuring email client, mailbox: inbox and outbox, Creating and sending e-mail, Replying to an e-mail message, Forwarding and e-mail message, Sorting and searching emails. Sending document/softcopy by email, activating spell checking, using address book, Handling SPAM, Removal of Cookies.	***Internet and Web Browser*** World wide web and website Web Browsing and popular web browsing software. Introduction to Search Engines, Popular Search engines. Concept of Favourites Folder. What is an Electronic Mail. Email Addressing, BCC and CC, Inbox, Outbox, Address book, SPAM.
12	**Project Work**	
13	**Examination**	