**Module 3 [Network Configuration]**

**Topic: Local area networking**

* Assignment level Basic:

1. What is Network?

* A network consists of two or more computers that are linked in order to share resources (such as printers and CDs), exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams.

1. What is Internet & Intranet?

* The Internet is a globally-connected network of computers that enables people to share information and communicate with each other.
* An intranet, on the other hand, is a local or restricted network that enables people to store, organize, and share information within an organization.
* Assignment level Intermediate:

1. How many types of Network we used?

* We put together this handy reference guide to explain the types of networks in use today, and what they're used for.
* 11 Types of Networks in Use Today.
* Personal Area Network (PAN) ...
* Local Area Network (LAN) ...
* Wireless Local Area Network (WLAN) ...
* Campus Area Network (CAN) ...
* Metropolitan Area Network (MAN) ...
* Wide Area Network (WAN)

1. Different between LAN & PAN?

* Conceptually, the difference between a PAN and a wireless LAN is that the former tends to be centered around one person while the latter is a local area network (LAN) that is connected without wires and serving multiple users.
* Assignment level advance:

1. Explain LAN?

* local area network (LAN) is a group of computers and peripheral devices that share a common communications line or wireless link to a server within a distinct geographic area. A local area network may serve as few as two or three users in a home office or thousands of users in a corporation's central office.

1. What are different types of LAN devices?

* Here is the common network device list:
* Hub.
* Switch.
* Router.
* Bridge.
* Gateway.
* Modem.
* Repeater.
* Access Point.

**Topic: configured Network**

* Assignment Level Basic

1. What is configured network?

* relative arrangement of parts or elements: such as. (1) : shape. (2) : contour of land configuration of the mountains. (3) : functional arrangement a small business computer system in its simplest configuration.

1. How do we configure network?

* Open the Activities overview and start typing Settings.
* Click on Settings.
* If you plug in to the network with a cable, click Network. Otherwise click Wi-Fi.
* Make sure that your wireless card is turned on or a network cable is plugged in.
* Click the setting button.
* For a Wi-Fi connection, the setting button will be located next to the active network.
* Select the IPv4 or IPv6 tab and change the Method to Manual.
* Type in the IP Address and Gateway, as well as the appropriate Netmask.
* In the DNS section, switch the Automatic switch to off. Enter the IP address of a DNS server you want to use. Enter additional DNS server addresses using the + button.
* In the Routes section, switch the Automatic switch to off. Enter the Address, Netmask, Gateway and Metric for a route you want to use. Enter additional routes using the + button.
* Click Apply. If you are not connected to the network, open the system menu from the right side of the top bar and connect. Test the network settings by trying to visit a website or look at shared files on the network, for example.
* Assignment level Intermediate.

1. How to check the ip address?

* First, click on your Start Menu and type cmd in the search box and press enter.
* A black and white window will open where you will type ipconfig /all and press enter.
* There is a space between the command ipconfig and the switch of /all.
* Your ip address will be the IPv4 address.

1. How to check the ip address through cmd?

* First, click on your Start Menu and type cmd in the search box and press enter.
* A black and white window will open where you will type ipconfig /all and press enter.
* There is a space between the command ipconfig and the switch of /all.
* Your ip address will be the IPv4 address.

1. How can we enter static address in network adapter?

* 1. Access the Control Panel
* 2. Select the Network Adapter
* 3. Select Properties
* 4. Select Internet Protocol Version 4 (TCP/IPv4)
* 5. Manually enter IP address and subnet mask
* 6. Save Settings
* 7. Revert Back to DHCP
* Assignment Level Advanced

1. Do a practical to release the packets from the adapter.

* Done

1. Do a practiceal to renew the lease of the ip address.

* Done

1. Do a practical to check the connectivity to the google.

* Done

**Topic: Wireless networking**

* Assignment level Basic:

1. [What is the difference between WEP and WPA?](https://www.proprofsdiscuss.com/q/1709494/what-is-the-difference-between-wep-and-wpa)

* WPA (Wi-Fi Protected Access) is a wireless security protocol released in 2003 to address the growing vulnerabilities of its predecessor, WEP. The WPA Wi-Fi protocol is more secure than WEP, because it uses a 256-bit key for encryption, which is a major upgrade from the 64-bit and 128-bit keys used by the WEP system.

1. What is Wireless Network?

* A wireless network refers to a computer network that makes use of Radio Frequency (RF) connections between nodes in the network. Wireless networks are a popular solution for homes, businesses, and telecommunications networks.
* Assignment level Intermediate:

1. What is a wireless network connection?

* Wireless networks are computer networks that are not connected by cables of any kind. The use of a wireless network enables enterprises to avoid the costly process of introducing cables into buildings or as a connection between different equipment locations

1. What are the basic concepts of networking?

* Clients and servers—how services such as e-mail and web pages connect using networks.
* IP addresses—how devices on a network can be found.
* Network hubs, switches and cables—the hardware building blocks of any network.
* Assignment level advance:

1. What do you need to know about networking?

* Below are several core concepts in computer networking that a networking professional would be required to know:
* LAN vs. WAN.
* Clients and servers.
* DNS lookup & IP addresses.
* Ethernet.
* Default gateway.
* Routers and switches.

1. How do you explain computer networking?

* Computer networking refers to interconnected computing devices that can exchange data and share resources with each other. These networked devices use a system of rules, called communications protocols, to transmit information over physical or wireless technologies.

**Topic: THE Internet**

* Assignment level Basic:

1. What do you mean by the term URL?

* Just as buildings and houses have a street address, webpages also have unique addresses to help people locate them. On the Internet, these addresses are called URLs (Uniform Resource Locators).

1. Term which is used to see web pages is called what?

* Browser is a Computer program that enable the internet users to access, navigate, and search World Wide Web sites.
* Assignment level Intermediate:

1. In the Ethernet which topology is used?

* The bus is the simplest (and the traditional) topology. Standard Ethernet (10BASE5) and Thin Ethernet (10BASE2), both based on coax cable systems, use the bus.

1. Set of rules and regulations while working on internet, which term is used?

* Protocol are the rules that we follow while on the internet.
* Assignment level advance:

1. What do you mean by RAS?

* Reliability, Availability and Serviceability (RAS) is a set of related attributes that must be considered when designing, manufacturing, purchasing or using a computer product or component. The term was first used by IBM to define specifications for their mainframe s and originally applied only to hardware .

1. What are the main search engines to get more website URL on Internet?

* Main search engine are as follow
* Google
* Bing
* Baidu
* Yahoo
* Ask.com
* Duckduckgo.

1. What does the PROTOCOL consist of ?

* Protocol consist of
* Syntax
* Semantics
* timing

**Topic: Virtualization**

* Assignment level Basic:

1. What is Virtualization

* Virtualization is the creation of a virtual -- rather than actual -- version of something, such as an operating system (OS), a server, a storage device or network resources. Virtualization uses software that simulates hardware functionality to create a virtual system.

1. What is the Difference between Full Virtualization and Para Virtualization?

* In Full virtualization, virtual machine permit the execution of the instructions with running of unmodified OS in an entire isolated way. In paravirtualization, virtual machine does not implement full isolation of OS but rather provides a different API which is utilized when OS is subjected to alteration.
* Assignment level Intermediate:

1. What is Hyper-visor?

* A hypervisor, also known as a virtual machine monitor or VMM, is software that creates and runs virtual machines (VMs). A hypervisor allows one host computer to support multiple guest VMs by virtually sharing its resources, such as memory and processing.

1. What are different hypervisors available in Linux?

* Linux KVM. A KVM (kernel based virtual machine) is a GNU/Linux based project developed for x86 machines.
* Xen. The Xen Project is one of the leading open source virtualisation platforms, Microsoft Hyper-V, Xvisor, Oracle VirtualBox, VMware Workstation Player, Lguest , Linux Containers (LXC)/Docker.

1. What is Virtualization and what are its types?

* Types of Virtualization
* Desktop Virtualization, Application Virtualization, Server Virtualization, Network Virtualization, Storage Virtualization.
* Assignment level advance:
  1. Name the components that are used in VMware infrastructure What is benefits of Virtualization?
* Benefits of Virtualization
* Reduced capital and operating costs.
* Minimized or eliminated downtime.
* Increased IT productivity, efficiency, agility and responsiveness.
* Faster provisioning of applications and resource