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MODULE:3 UNDERSTANDING AND MAINTAINANCE OF NETWORKS

SECTION:1 MCQS

1. What is the primary function of a router in a computer network?

ANS: c) Forwarding data packets between networks

2. What is the purpose of DNS (Domain Name System) in a computer network?

ANS: c) Converting domain names to IP addresses

3. What type of network topology uses a centralized hub or switch to connect all devices?

ANS: a) Star

4. Which network protocol is commonly used for securely accessing and transferring files over a network?

ANS: b) FTP

SECTION:2 TRUE OR FALSE

5. A *firewall* is a hardware or software-based security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules.

ANS: True

EXPLAINATION: A firewall acts like a security guard, allowing safe data and blocking unsafe traffic.

7. *DHCP (Dynamic Host Configuration Protocol)* assigns static IP addresses to network devices automatically.

ANS: False

EXPLAINATION: DHCP assigns dynamic IP addresses, not static ones.

SECTION:3 ANSWER IN SHORT

8. Difference between a Hub and a Switch

ANS:

HUB	SWITCH
It functions in a physical layer.	It functions in the data link layer.
Switch allows packet switching.	There is a separate collision domain in the switch.
Hub follows broadcast transmission.	Switch follows three i.e., multicast, unicast, and broadcast type transmission.

In Hub, half duplex transmission technique is utilized.	In switch, full duplex transmission technique is utilized.
Hub does not allow packet filtering.	Switch allows packet switching.
There can be 4 ports in Hub.	24 to 28 ports contained by a Switch.

9. Process of Troubleshooting Network Connectivity Issues

ANS: Process of troubleshooting includes steps are as follows:

- Check physical connections like cables and power.
- Restart the computer, router, or modem.
- Check IP address and network settings.
- Test the connection using tools like ping.
- Update or reinstall network drivers if required.

SECTION: 4 PRACTICAL APPLICATION

10. How to Configure a Wireless Router's Security Settings?

ANS: Steps to configure router are as follows:

- Log in to the router using its IP address in a web browser.
- Change the default username and password.
- Enable WPA2/WPA3 encryption for Wi-Fi security.
- Set a strong Wi-Fi password.
- Disable WPS if not required and update router firmware.

SECTION:5 ESSAY

11. Importance of Network Documentation with Examples

ANS: Importance:

- Helps in easy troubleshooting and maintenance.
- Saves time during network upgrades or repairs.
- Ensures continuity when staff changes.

Examples of information to document:

- Network IP address details
- Device list (routers, switches, computers)
- Network topology diagram
- Login credentials and security policies
- ISP and configuration details.