

# IIE MSA

## SCHOOL OF INFORMATION TECHNOLOGY

### NWEG5122 – Networking Engineering 1B

**Instructions:** Please submit the **6-ICE activities** by the deadline **16 Sept 2022, 17:00** on Blackboard. **No emails will be considered.**

The IIE Take Home assessment instructions applied.

Name:

Surname:

Stud number:

Group number:

### Integrated Curriculum Engagement (ICE) - 1

1. In the client-server model, what is the primary protocol used for communication between a browser and web server?
  - a. FTP
  - b. TCP
  - c. HTTP
  - d. SSL
2. Which two encryption protocols might be used to provide secure transmissions for browser and web server communications?
  - a. HTTP and HTTPS
  - b. SSL and TLS
  - c. SSL and HTTP
  - d. TCP and UDP
3. Which email protocol allows an email client to download email messages to the local computer?
  - a. IMAP4
  - b. SMTP
  - c. TCP
  - d. POP3
4. Which email protocol allows an email client to read mail stored on the mail server?
  - a. IMAP4
  - b. SMTP
  - c. TCP
  - d. POP3

5. Which application embedded in Windows operating systems allows remote control of a computer and uses the RDP secure protocol for transmissions?
  - a. Telnet
  - b. Remote Desktop
  - c. SFTP
  - d. SSH
6. A network consists of five computers, all running Windows 10 Professional. All the computers are connected to a switch, which is connected to a router, which is connected to the Internet. Which networking model does the network use?
  - a. Star-bus
  - b. Ring
  - c. Hybrid
  - d. Peer-to-peer
7. In Question 6, suppose one computer is upgraded from Windows 10 Professional to Windows Server 2016. Which networking model can the network now support that it could not support without the upgrade?
  - a. Hybrid
  - b. Client-server
  - c. Star-bus
  - d. Ring
8. A network consists of seven computers and a network printer, all connected directly to one switch. Which network topology does this network use?
  - a. Hybrid
  - b. Mesh
  - c. Star-bus
  - d. Star
9. In Question 8, suppose a new switch is connected to the first switch by way of a network cable, and three computers are connected to the new switch. Which network topology is now used?
  - a. Hybrid
  - b. Mesh
  - c. Star-bus
  - d. Star
10. Which type of address is used at the Transport layer to identify the receiving application?
  - a. IP address
  - b. Port
  - c. MAC address
  - d. Protocol

## **Integrated Curriculum Engagement (ICE) – 2**

1. You have decided to use SNAT and PAT on your small office network. At minimum, how many IP addresses must you obtain from your ISP for all five clients in your office to be able to access servers on the Internet?
2. You have just set up a new wireless network at your house, and you want to determine whether your Linux laptop has connected to it and obtained a valid IP address. What command will give you the information you need?

## **Integrated Curriculum Engagement (ICE) – 3**

1. While troubleshooting a network connection problem for a coworker, you discover the computer is querying a nonexistent DNS server. What command-line utility can you use to assign the correct DNS server IP address?
2. When running a scan on your computer, you find that a session has been established with a host at the address 208.85.40.44:80. Which Application layer protocol is in use for this session? What command-line utility might you use to determine which computer is the host?

## **Integrated Curriculum Engagement (ICE) – 4**

1. A user complains that Skype drops her videoconference calls and she must reconnect. At which layer of the OSI model should you begin troubleshooting? Which OSI layer is responsible for not dropping the Skype connection?
2. What is the fundamental distinction between a node and a host?

## **Integrated Curriculum Engagement (ICE) – 5**

1. A computer is unable to access the network. When you check the LED lights near the computer's network port, you discover the lights are not lit. Which layer of the OSI model are you using to troubleshoot this problem? At which two layers does the network adapter work?
2. What is the fundamental distinction between a MAN and a WAN?

## **Integrated Curriculum Engagement (ICE) – 6**

1. What is the name of the domain controller database that Windows Server 2016 uses to store data about user access and resources on the network?
2. What is the fundamental distinction between a Layer 2 switch and a router?