

**FINAL
ALTERNATIVE ASSESSMENT**

(COVER PAGE)

Session : April 2022

Programme : Diploma in Information Technology (DITN)
Diploma in Computer Science (DCS)

Course : ICT1105: Fundamentals of Networking

Date of Examination : August 2, 2022 (Tuesday)

Time : 8.00am – 10.30am Reading Time : Nil

Duration : 2 Hours 30 Minutes

Special Instructions :

Section A: This section consists of **TWENTY (20)** questions. Answer **ALL** questions.

Section B: This section consists of **THREE (3)** questions. Answer **ALL** questions.

Material permitted : Non-Programmable Scientific Calculator

Materials provided : Nil

Examiner(s) : Mr Thanesh Doraisamy and Dr Vaithegy Doraisamy

Chief Moderator : Mr Vasuky Mohanan

This paper consists of 7 printed pages, including the cover page

DIPLOMA IN INFORMATION TECHNOLOGY PROGRAMME (DITN)
DIPLOMA IN COMPUTER SCIENCE PROGRAMME (DCS)
ICT1105: FUNDAMENTALS OF NETWORKING
FINAL ALTERNATIVE ASSESSMENT: APRIL 2022 SESSION

Section A (40 marks)

Instructions: This section consists of **TWENTY (20)** questions. Answer **ALL** questions.

1. Which of the following best describes transmission?

- A. Issue signals along network medium
- B. Process of transmitting
- C. Transmit and receive signals
- D. Amplifies signals.

2. Based on the Figure 1 below, describe how the signal is transmitted.



Figure 1: Signal transmission demonstration

- A. One direction signal transmission
 - B. Both direction signal transmission and at the same time
 - C. Used on data networks
 - D. Both direction signal transmission and one at a time.
3. Name the type of multiplexing for digital signal.
- A. Wavelength Division Multiplexing
 - B. Dense Wavelength Division Multiplexing
 - C. Frequency division multiplexing
 - D. Time division multiplexing

4. Which of the following is **NOT** the type of noise?
 - A. Electromagnetic interference
 - B. Environmental interference
 - C. Regeneration
 - D. Crosstalk

5. _____ enables an analog signal bits sent over guided and unguided media as analog signal.
 - A. Digital Modulation
 - B. Amplitude Modulation
 - C. Frequency Modulation
 - D. Phase Modulation

6. Which protocol assigns IP address to the client connected in the internet?
 - A. DHCP
 - B. IP
 - C. RPC
 - D. none of the above

7. The function of Simple Mail Transfer Protocol (SMTP) protocol is:
 - A. Maintain CPU performance
 - B. Sending emails from one server to another
 - C. Moving files from one computer to another cross the internet
 - D. Training people to manage server space

8. Based on the Figure 2, identify the type of protocol.

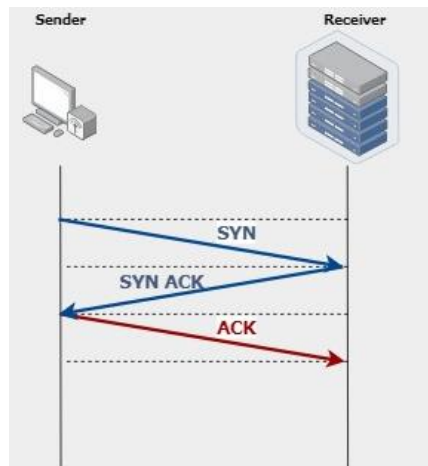


Figure 2: Protocol

- A. SMTP
 B. POP3
 C. TCP
 D. UDP
9. My octet number starts from 128 until 191. My default subnet mask is 255.255.0.0. Suggest an IP number that belongs from my class.
- A. 192.0.0.1
 B. 169.254.1.1
 C. 9.9.1.3
 D. 192.168.30.4
10. A network device will not be able to communicate without a valid IP address. How will a device communicate when the Dynamic Host Configuration Protocol (DHCP) server is not running?
- A. APIPA
 B. ipv6 addressing
 C. BooTP
 D. Sockets
11. Which of the following is not a disadvantage of a bus topology?
- A. Difficult to trouble shoot
 B. Expensive
 C. Not fault tolerance
 D. Not scalable.

12. There are three types of switching method. Which of the method that does not maintain the connection continuously during data transmission?
- A. Message switching
 - B. Packet switching
 - C. Segment switching
 - D. Circuit switching
13. Name the IEEE standard used in 100Base-FX.
- A. IEEE802.3u
 - B. IEEE802.3an
 - C. IEEE802.3ab
 - D. IEEE802.3z
14. Identify the Figure 3.



Figure 3: Network device

- A. PoE Adapters
 - B. PoE-capable switch
 - C. PoE-routers
 - D. PoE-capable hubs
15. Explain the function of a router.
- A. To connect devices in the same network
 - B. Forwards network data packets between computer networks.
 - C. It is used in data link layer in OSI model.
 - D. It is used in star topology
16. Simplify the following IPV6 address.: **2001:0000:0000:0000:0DB8:0000:AC10:FE01**
- A. 2001::0DB8:0000:AC10:FE01
 - B. 2001::0DB8::AC10:FE01
 - C. 2001:00:00:00:0DB8:00:AC10:FE01
 - D. 2001:0000:0000::AC10:FE01

17. Penang Wifi is an example of _____ network.

- A. WLAN
- B. WMAN
- C. WWAN
- D. PAN

18. Identify the topology used in the following Figure 4.

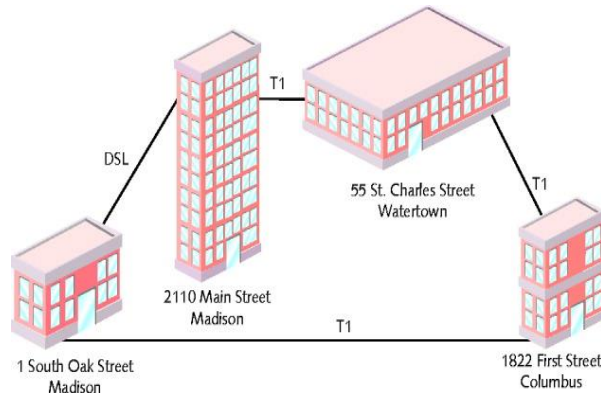


Figure 4: WAN topology

- A. Ring topology WAN
 - B. Star topology WAN
 - C. Full-Mesh topology WAN
 - D. Bus topology WAN
19. Besides acts as an intermediary between external and internal networks, proxy server also does:
- A. Provides services to Internet clients from servers on its own network
 - B. Provides identity protection for the server rather than the client
 - C. Screens all incoming and outgoing traffic
 - D. Useful when multiple Web servers are accessed through the same public IP address
20. Which of the following is **NOT** a common packet-filtering firewall criteria:
- A. Source and destination IP addresses
 - B. Transmissions using UDP or ICMP protocols
 - C. Packet's status as inbound to, outbound from private network
 - D. Used by routers to decline forwarding certain packets

Section B (60 marks)

Instructions: This section consists of **THREE (3)** questions. Answer **ALL** questions.

Question 1

- (a) Define Digital Signatures? (2 marks)
- (b) Explain the difference between a Domain and a Workgroup? (6 marks)
- (c) Discuss The Difference Between Transport And Tunnel Mode in VPN (6 marks)
- (d) Identify **THREE (3)** main Security Services That Ipsec Vpn Provides? (6 marks)

Question 2

- (a) Define multiplexing. Discuss **TWO (2)** types of multiplexing with relevant diagrams. (10 marks)
- (b) Explain **FIVE (5)** TCP/IP core protocols. (10 marks)

Question 3

- (a) Discuss the **FIVE (5)** basic network topologies with the aid of relevant diagrams. (10 marks)
- (b) Explain the basic function of a firewall. Support your answer with a diagram. (10 marks)

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