

**FINAL
ALTERNATIVE ASSESSMENT**

(COVER PAGE)

Session : August 2020

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

Course : ICT1105: Fundamentals of Networking

Date of Examination : December 17, 2020 (Thursday)

Time : 8.00am – 10.30am Reading Time : Nil

Duration : 2 Hours 30 Minutes

Note: 30 minutes is added into the duration of the examination to factor in any connectivity matters and for you to scan and upload your scripts.

Special Instructions :

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

Section B: This section consists of **FOUR (4)** questions. Answer **ALL** the questions.

Materials permitted : NIL

Materials provided : NIL

Examiner(s) : Azmir Ismail, Christine Retnabai, Victor Raj and Thanesh

Moderator : Usha a/p Jayahkudy

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

INTI INTERNATIONAL UNIVERSITY & COLLEGES

DIPLOMA IN INFORMATION TECHNOLOGY (DITN)
DIPLOMA IN COMMUNICATION AND INFORMATION TECHNOLOGY (DICTN)
DIPLOMA IN COMPUTER SCIENCE (DCS)
ICT1105: FUNDAMENTALS OF NETWORKING
FINAL ALTERNATIVE ASSESSMENT: AUGUST 2020 SESSION

Section A (40 marks)

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

1. Karen wants to connect her laptop and her brother's laptop directly for the purpose of exchanging large files between both machines. Which type of cable should she use for this purpose?
 - A. Straight-through Cable
 - B. Crossover Cable
 - C. Serial Cable
 - D. All of the above

2. Fiber optics have maximum segment of _____.
 - A. 100m
 - B. 200m
 - C. 500m
 - D. 2000m

3. Bobby is an IT network technician at his company. His company's network uses network cables that conform to the TIA/EIA 568B standard. As he makes patch cables for the computers to connect to the network, which wires does he crimp into pins 1 and 2 of the RJ-45 connector?
 - A. White with orange stripe and orange
 - B. White with brown stripe and brown
 - C. White with blue stripe and blue
 - D. White with red stripe and red

4. Convert the decimal number 131 to binary numbers.
 - A. 0b11001111
 - B. 0b10001000
 - C. 0b10000011
 - D. 0b10000001

5. The statements below about analog signals are true **EXCEPT** _____.
 - A. voltage in analog signals tend to vary
 - B. frequency is one of the properties of analog signals
 - C. amplitude is the length of the wave at any point of time
 - D. wavelength unit of measurement is in meters or feet

6. Which transmission flow is concerned with the delay of signal transmission and receipt?
- A. noise
 - B. latency
 - C. cross talk
 - D. round trip base
6. Which EIA/TIA standards below offer maximum 100 Mbps throughput?
- A. Cat 4
 - B. Cat 5
 - C. Cat 5e
 - D. Cat 6
7. What is the network ID for a network that contains the group of IP addresses from 194.73.44.10 through 194.73.44.254 and is not subnetted?
- A. 194.73.0.0
 - B. 194.73.44.1
 - C. 194.73.44.0
 - D. 194.73.44.255
8. Which statement below is **FALSE** for IPV6 addresses?
- A. Leading zeros are required
 - B. Two colons (::) are used to separate successive hexadecimal fields of zero
 - C. Format prefix indicates address type
 - D. IPv6 loopback address is 0:0:0:0:0:0:1
9. In computer networks, _____ uses the TCP/IP port number 23 and UDP transport protocol for its operations.
- A. FTP
 - B. Telnet
 - C. P2P
 - D. W2W
10. To check on the IPV6 address on his father's computer, Ong checks the _____ in the _____.
- A. AAA resource record, DNS zone file
 - B. AAAA resource record, DNS zone file
 - C. AA resource file, DNS zone record
 - D. AAAA resource file, DNS zone record

12. What is the default subnet mask for the following IP address: 154.13.44.87?
- A. 255.255.255.255
 - B. 255.255.255.0
 - C. 255.255.0.0
 - D. 255.0.0.0
13. Physical topology and logical topology share the same _____.
- A. physical location
 - B. shape - bus, star, ring
 - C. purpose
 - D. data transmission
14. Logan is involved with the network team that is constructing the backbone network for his company's WAN, where connectivity is very important due to data intensive applications that his company uses for their critical business operations. He is asked for his recommendation of type of backbone network that should be implemented. Barring financial considerations, he should recommend _____.
- A. Serial backbone
 - B. Parallel backbone
 - C. Distributed backbone
 - D. Collapsed backbone
15. In comparing the type of backbone networks, they differ in terms of _____.
- A. topology
 - B. distance between components
 - C. cabling
 - D. All of the above.
16. The statements below about CSMA/CD access method are true **EXCEPT** _____.
- A. it helps to limit network traffic
 - B. it is the common access method under Ethernet
 - C. it detects collision in transmissions inside the network
 - D. it uses the Ethernet NICs to find available transmission channels
17. In ethernet, the larger the frame size, the _____ is the throughput.
- A. faster
 - B. slower
 - C. minimum
 - D. None of the above.

18. Which of the following WAN topologies is the most fault tolerant?
- A. Full mesh
 - B. Peer-to-peer
 - C. Client-server
 - D. Hierarchical
19. In tiered Wide Area Networks (WAN) connections, sites are typically connected via _____ or _____ topology.
- A. star, ring
 - B. bus, ring
 - C. star, bus
 - D. None of the above.
20. In using SONET (Synchronous Optical Network), the advantage for its user are listed below _____.
- A. integrate other WAN technologies
 - B. fast data transmission rates
 - C. high degree of fault tolerance
 - D. None of the above.

Section B (60 marks)

Instructions: This section consists of **FOUR (4)** questions. Answer **ALL FOUR (4)** questions. Marks for the questions are stated.

Question 1

- (a) Describe **FIVE (5)** differences between STP (Shielded Twisted Pair) cables and UTP (Unshielded Twisted Pair) cables. (10 marks)
- (b) Explain **TWO (2)** differences between simplex, half duplex and full duplex communication mode. (6 marks)
- (c) In what communication mode (simplex, half duplex, full duplex) does each device below operate?
- (i) Mouse (1 mark)
 - (ii) Internet browser (1 mark)
 - (iii) Television (1 mark)
 - (iv) Mobile phone (1 mark)

Question 2

Setup:

Client A - a new personal computer, wants to join a network that consists of 1 DHCP server and 4 personal computers. The DHCP server has allocated the IP address 123.45.67.89 to client A. All personal computers run on Windows OS.

- (a) Draw a network diagram for this network setup. (10 marks)
- (b) List the steps of the DHCP leasing process. (4 marks)
- (c) If the DHCP server breaks down, what is the available alternative? (1 mark)

Question 3

Shamsudin is in the process of setting up the computer network in his office. His office has four computers and a printer. His choice of the physical topology for his network either bus, ring or star.

- (a) What would be the best physical topology for his network?
(1 mark)
- (b) Give **TWO (2)** reasons for your choice in (a).
(4 marks)
- (c) What would be **ONE (1)** limitation of the choice in (a).
(2 marks)
- (d) Describe **THREE (3)** topology specifications for your choice in (a).
(6 marks)
- (e) Suggest **TWO (2)** Ethernet standards of copper cables for his office network.
(2 marks)

Question 4

Your friend has asked you to explain to him about DSL (Digital Subscriber Line), since he is considering using DSL for his company's inter-branch network, as he is considering two DSL service providers, company A and company B. A uses asymmetrical DSL while B uses symmetrical DSL.

You begin by describing him **TWO (2)** categories of DSL. Further, you explain the data transmission technology that company A and company B uses.

- (a) What would be the content of your explanation?
(7 marks)
- (b) What is **ONE (1)** factor you would ask him to consider before making his choice?
(3 marks)

~THE END~

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