

TEVETA	
T E V E T A National Vocational Training Institute	
DIPLOMA IN COMPUTER STUDIES	
LEVEL 6 EXAMINATIONS	
FINAL INTEGRATED SUMMATIVE EXAMINATION	
NOVEMBER-DECEMBER 2018	
COMPUTER NETWORKS	
TIME : 3 HOURS	TOTAL MARKS: 100
INSTRUCTIONS	PASS MARK: 50
1. Write your examination number and national registration card number on the answer booklet.	
2. There are seven (7) questions in this booklet.	
3. You are required to attempt any five (5) questions.	
4. All questions carry equal marks.	
5. Cell phones and programmable calculators are not allowed in the examination room.	
DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO	

Question 1

- (a) Explain concisely the following routing protocols with examples where applicable
 - (i) Distance vector (3 marks)
 - (ii) Link state (3 marks)
 - (iii) Hybrid (2 marks)
- (b) Distinguish between the following terms
 - (i) Interior Routers and Exterior Routers (4 marks)
 - (ii) Static Routing and Dynamic Routing (4 marks)
- (c) Distinguish between **routing protocols** and **routable protocols**, give an example of each (4 marks)

[Total: 20 Marks]

Question 2

- (a) Explain what the following IP addresses are:
 - (i) Multi cast IP address (2 marks)
 - (ii) Broadcast IP address (2 marks)
 - (iii) Loopback IP address (3 marks)
 - (iv) Automatic Private IP Addressing (APIPA) (3 marks)
- (b) Describe the following types of transmission modes with examples of each
 - (i) Duplex (2 marks)
 - (ii) Half-duplex (2 marks)
- (c) Distinguish between the following pairs:
 - (i) Baseband and Broadband Data Transmission (2 marks)
 - (ii) Synchronous and Asynchronous Transmission (2 marks)
 - (iii) Cyclic Redundancy Check (CRC) And Parity Bit Check (2 marks)

[Total: 20 Marks]

Question 3

- (a) Explain the following security terms
 - (i) Authentication (4 marks)
 - (ii) Firewall (4 marks)
 - (iii) Security threat (4 marks)
- (b) TCP and UDP are some of the protocols found in the TCP/IP protocol suite.
 - (i) Identify the layer of the TCP/IP model are these protocols found. (2 marks)
 - (ii) Explain each protocol. (4 marks)

(iii) State any one (1) reason to prefer a UDP to a TCP.

(2 marks)

[Total: 20 Marks]

Question 4

- (a) Define the term switching (1 mark)
- (b) Describe the following types of switching used in WAN technologies
 - (i) Circuit Switching (3 marks)
 - (ii) Message Switching (3 marks)
 - (iii) Packet Switching. (3 marks)
 - (iv) Give any two advantages of packet switching technology. (4 marks)
 - (v) Give any two advantages of message switching (4 marks)
 - (vi) Briefly explain the Virtual Circuit switching. (2 marks)

[Total: 20 Marks]

Question 5

- (a) Explain how the following tools used in network troubleshooting and monitoring
 - (i) Ping (2 marks)
 - (ii) Tracert (2 marks)
 - (iii) Cable continuity testers (2 marks)
 - (iv) Crossover cables (2 marks)
 - (v) Event logs (2 marks)
- (b) Describe the following protocols:
 - (i) ARP (2 marks)
 - (ii) DHCP (3 marks)
 - (iii) DNS (3 marks)
 - (iv) SNMP (2 marks)

[Total: 20 Marks]

Question 6

- (a) Explain any three advantages of Open System Interconnection (OSI) model. (6 marks)
- (b) Discuss the function of each layer of the OSI model. (14 marks)

[Total: 20 Marks]

Question 7

With the aid of well-labeled diagrams, describe four LAN topologies.

(20 marks)

[Total: 20 Marks]