TED(21)4132 | 2103230027 | Reg.No.....

(Revision-2021) | Signature.....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL - 2026

COMPUTER COMMUNICATION AND NETWORKS

[Maximum marks: 75] (Time: 3 Hours)

PART A

I. Answer all the following questions in one word or one sentence. Each question carries 1 mark

(9 x 1 = 9 Marks)

		Module outcome	Cognitive level
1	List out the five components of data communication system.	M1.01	R
2	Define computer Networks.	M1.03	R
3	Define Bit Rate and Bit Length.	M2.02	U
4	What are the responsibilities of data link layer?	M2.03	U
5	A packet at the data-link layer is normally called a……. a) Frames b) Host c) Links d) Nodes	M2.05	U
6	What is routing?	M3.02	U
7	Transport layer is which layer in OSI model? a) Fourth layer b) Third layer c) Second layer d) Fifth layer	M3.03	R
8	What is the Domain name system responsible for?	M4.03	U
9	What is URL?	M4.03	R

PART B

II. Answer any eight questions from the following. Each question carries 3 marks.

(8 x 3 = 24 Marks)

		Module outcome	Cognitive level
1	Examine the two types of line configuration with example.	M1.01	U
2	What is OSI model? Draw the architecture of OSI reference model.	M1.03	U
3	How do guided media differ from unguided media?	M2.02	R
4	What is flow control and error control in DLC?	M2.03	R
5	In an IPV4 packet, the value of HLEN is 15 and value of total length field is 0x0064. How many bytes of data being carried by this packet?	M3.02	U
6	Classify static and dynamic routing algorithm.	M3.03	U
7	Suppose a TCP connection is transferring a file of 5,000 bytes. The first byte is numbered 10,001. What are the sequence numbers for each segment if data are sent in five segments, each carrying 1,000 bytes?	M3.05	R

8	List out various application layer protocols and briefly explain any two.	M4.01	U
9	How FTP differ from HTTP?	M4.02	U
10	What is the significance of DNS?	M4.04	R

PART C

Answer all questions. Each question carries seven marks

(6 x 7 = 42 Marks)

		Module outcome	Cognitive level
III	List out various physical topologies in Computer network. Explain any two.	M1.01	R
	OR		
IV	Compare TCP/IP and OSI reference model.	M1.05	U
V	Explain stop & wait protocol with FSM diagram.	M2.03	U
	OR		
VI	What is bit and byte stuffing, Explain with example?	M2.04	U
VII	A slotted ALOHA network transmits 200-bit frames using a shared channel with a 200-kbps bandwidth. Find the throughput if the system (all stations together) produces 250 frames per second.	M2.05	R
	OR		
VIII	Explain three strategies used in CSMA/CA collision avoidance.	M2.05	U
IX	Compare classful and classless addressing in IPv4.	M3.02	R
	OR		
X	Explain the working of Link-state Routing in detail.	M3.03	U
XI	Explain any two TCP congestion control mechanisms with an example.	M3.05	U
	OR		
XII	Compare the features of UDP and TCP.	M3.05	U
XIII	What is URL? What are its identifiers? Explain them.	M4.02	R
	OR		
XIV	Explain the architecture of Electronic mail.	M4.03	R

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