GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Sixth Semester Regular) Examinations, May – 2024

21BECPE36011 - Data Communications and Networking

(ECE)

Time: 3 hrs   Maximum: 70 Marks

(The figures in the right-hand margin indicate marks)

PART – A   **(2 x 5 = 10 Marks)**
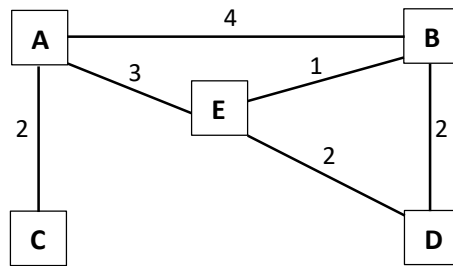
Q.1. Answer *ALL* questions

		CO #	Blooms Level
a.	What are the fundamental characteristics of an effective communication?	CO1	K1
b.	How can errors be detected by using block coding?	CO2	K2
c.	User Datagram Protocol (UDP) is a connectionless and unreliable protocol. State the reasons.	CO3	K4
d.	Mention the services provided by the User Agent (UA).	CO4	K2
e.	Define Quality of Service (QoS).	CO4	K5

PART – B   **(15 x 4 = 60 Marks)**

Answer *ALL* questions

		Marks	CO #	Blooms Level
2. a.	Explain leaky bucket and token bucket algorithm.	8	CO3	K4
b.	What is the significance of layered architecture? Explain the OSI layered architecture with neat sketch.	7	CO2	K3
	(OR)			
c.	Explain MAC sub layer protocol and frame structure of IEEE 802.11.	8	CO2	K2
d.	Discuss the File Transfer Protocol (FTP) with a neat diagram.	7	CO1	K3
3.a.	Explain the function of ARP & RARP.	8	CO3	K1
b.	Explain Carrier Sense Multiple Access (CSMA) with its appropriate methods.	7	CO4	K4
	(OR)			
c.	Explain about IPv6? Compare IPv4 and IPv6.	8	CO3	K3
d.	Describe the header format of User Datagram Protocol (UDP).	7	CO4	K1
4.a.	Discuss TCP services in process-to-process delivery.	8	CO1	K2
b.	Brief about the domain name space in the internet with examples.	7	CO3	K3
	(OR)			
c.	**Station A** needs to send a message consisting of 9 packets to **station B** using a sliding window (window size = 3) and Go-Back-N ARQ error control strategy. All packets are ready and immediately available for transmission. If every 5th packet that **station A** transmits gets lost (but no ACKs from B ever get lost), then what is the number of packets that **station A** will transmit for sending the message to **station B**?	8	CO4	K3
d.	Discuss different types of network topologies with suitable diagram.	7	CO1	K4
5.a.	Discuss about Go-Back-N-ARQ and selective repeat ARQ protocol.	8	CO2	K4
b.	How does signal propagation take place through Fiber optics? State the advantages of optical fibre over twisted-pair and coaxial cable.	7	CO1	K2

c. Discuss about the techniques used to improve the quality of service (QoS).   8   CO4   K3

d. What is routing? Using distance vector routing algorithm, calculate the shortest path in the following given network.   7   CO2   K2

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