Sub Code: EEC013 **ROLL NO……..……..**

ODD SEMESTER EXAMINATION, 2024 – 25

III Year (V Sem) B.Tech.: Electronics & Communication Engineering

COMPUTER NETWORKS

Duration: 3:00 hrs **Max Marks: 100**

Note: - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

Q 1.	Answer any two parts of the following.	(10x2= 20)
	a) (i) What are the different types of networks? Explain in detail.	(5 marks)
	(ii) What are the advantages of ring topology over bus topology? List out the merits of mesh topology.	(5 marks)
	b) Explain the TCP/IP reference model with a neat diagram. Also, elaborate RARP, UDP, IP in details.	(10 marks)
	c) Describe the twisted pair and coaxial cable with its diagrammatic representation. Also, sketch the various UTP connectors.	(10 marks)
Q 2.	Answer any two parts of the following.	(10x2= 20)
	a) (i) What is framing and explain different framing algorithms?	(5 marks)
	(ii) Explain about HDLC Configurations, Transfer Modes and different types of frames.	(5 marks)
	b) Make the flow chart diagram of CSMA/CA and CSMA/CD with the explanation of its key elements.	(10 marks)
	c) Write about Redundancy, Detection versus Correction, Forward Error Correction versus Retransmission and Coding	(10 marks)
Q 3.	Answer any two parts of the following.	(10x2= 20)
	a) (i) Write about different connecting devices.	(5 marks)
	(ii) What are the OSPF network types?	(5 marks)
	b) Briefly explain IP datagram header format with neat diagram?	(10 marks)
	c) What is IV6? Explain its advantages over IPV4. Also explain its frame format.	(10 marks)
Q 4.	Answer any two parts of the following.	(10x2= 20)
	a) (i) Write about different steps to create a TCP Connection.	(5 marks)
	(ii) What are the different Services of SCTP	(5 marks)
	b) Explain the TCP and UDP Packet headers in details.	(10 marks)
	c) Define Switching and Briefly explain the Datagram Approach in Packet Switching Method with neat diagram?	(10 marks)
Q 5.	Answer any two parts of the following.	(10x2= 20)
	a) (i) What are the security goals of cryptography? How can security be threatened?	(5 marks)
	(ii) Encrypt the message “this is a secure world” using an additive cipher with key=20.	(5 marks)
	b) Describe the setup of encryption and decryption process of RSA public key cryptography with its pictorial representation.	(10 marks)
	c) Draw the general structure of DES and explain the encryption-decryption process. What is the strength of a TDES over the DES and DDES algorithm?	(10 marks)

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