

**END TERM EXAMINATION**

SIXTH SEMESTER [B.TECH] JULY 2023

Paper Code: ETCS-306

Subject: Computer Networks

Time: 3 Hours

Maximum Marks: 75

**Note:** Attempt five questions in all including Q.No 1 which is compulsory. Select one question from each unit.

(2.5x10=25)

Q1 Answer the following in brief:

- a) Differentiate between LAN, MAN & WAN?
- b) What is Packet Switching?
- c) State the role of Multiple Access Protocols?
- d) Define Subnetting & its role?
- e) What is IPv4 and IPv6?
- f) Differentiate between UDP and TCP?
- g) Explain PDH Networks?
- h) Describe Routing Protocols?
- i) Define the terms bit rate in terms of data transmission?
- j) Differentiate between TDM and WDM?

**UNIT-I**

Q2 a) Explain various network topologies? What is OSI Model? What are the different layers of OSI Model? Explain each layer and its role in a network? (12.5)

**OR**

b) Explain Multiplexing and its types? Differentiate between PSTN and ISDN? Also mention the role of transmission media (12.5)

**UNIT-II**

Q3 a) Explain Leaky bucket algorithm. What kind of problems addressed using Leaky bucket algorithm? Explain Error Detection and Correction Techniques used by Data Link Layer? (12.5)

**OR**b) Write a note on the following: (12.5)

- i) PPP
- ii) HDLC
- iii) Bridges
- iv) Channel Allocation Problem
- v) IEEE 802.3

**UNIT-III**

Q4 a) Draw and explain packet format of Transmission control protocol. Explain various steps that are followed in releasing a TCP connection? Compare Link State routing and Distance Vector Routing using suitable diagram? (12.5)

**OR**

b) Explain Congestion Control Algorithm? What are Queueing Models? Describe SONET (12.5)

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UNIT-IV

Q5 a) Explain CSMA/CD and CSMA/CA random access protocols?  
How does ATM differ from Frame Relay? Describe role of UDP in  
a network? (12.5)

**OR**

b) Discuss Transport Layer Services? Also discuss Elements of  
Transport Protocols? Explain advantage of GO-Back-N ARQ  
protocol over stop-and-wait ARQ? (12.5)

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