



R22 Regulation

Subject code:4E5FA

**TKR COLLEGE OF ENGINEERING AND TECHNOLOGY**

(Autonomous, Accredited by NAAC with 'A+' Grade)

**B.Tech V Semester Supplementary Examinations, May 2025**

**COMPUTER NETWORKS**

(IT)

Maximum Marks: 60

Date: 19.06.2025

Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

**Part-A**

All the following questions carry equal marks (10x1M=10 Marks)		Marks	CO	Bloom Tx
1	What are two applications where ISDN might be beneficial?	1M	1	L1
2	State the disadvantageous of star topology	1M	1	L1
3	What are the two common methods of error detection in the data link layer.	1M	2	L1
4	What role does the data link layer play in Internet communication?	1M	2	L1
5	What is the difference between broadcast and multicast routing.	1M	3	L2
6	What is the difference in handling data at the network layer between the Internet and ATM networks.	1M	3	L2
7	What are some of the key fields in a TCP header that support connection reliability?	1M	4	L1
8	What is meant by congestion recovery?	1M	4	L1
9	Name two common types of DNS records.	1M	5	L1
10	What is an SNMP agent, and what is its role?	1M	5	L1

**Part-B**

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
11	a) What is TCP/IP model? Explain the functions and protocols and services of each Layer.	5M	1	L2
	b) Describe different types of guided transmission media & unguided transmission media with neat diagrams and compare the performance characteristics.	5M	1	L4
OR				
12	a) Name seven layers of OSI model and explain two important functions offered by each layer.	5M	1	L2
	b) You have two computers connected by an Ethernet hub at home? Is this a LAN, MAN or WAN? Explain with reasons.	5M	1	L3
13	a) Demonstrate Carrier Sense Multiple Access-collision free protocol.	5M	2	L3
	b) Describe the collision avoidance mechanism used in 802.11 wireless LAN. In particular, how such a mechanism solves the hidden terminal problem.	5M	2	L2

OR

14	a) Give two reasons why networks might use an error correcting code instead of error detection and retransmission.	5M	2	L3
	b) Describe how bit stuffing works in Data link layer.	5M	2	L2
15	a) What are the differences between Static Routing Algorithm and Dynamic Routing Algorithm	5M	3	L2
	b) What are the services provided to the Network Layer by Data Link Layer? Identify the relationship between a packet and a frame.	5M	3	L3
OR				
16	a) Construct a datagram and virtual circuit networks with two switches between sender and receiver. With the help of this network, find the total delay to transmit a packet and comment on efficiency of each network.	5M	3	L3
	b) Compare the concept of datagram and virtual circuit approaches of packet switching.	5M	3	L4
17	a) What are the reasons for congestion? What are the problems with congestion?	5M	4	L3
	b) Are there any circumstance when connection oriented service will (or at least should) deliver packets out of order? Explain	5M	4	L3
OR				
18	a) How a Connection is established in a Transport Protocol. Explain three protocol scenarios for establishing a connection?	5M	4	L2
	b) How would you differentiate UDP and TCP.	5M	4	L2
19	a) Demonstrate HTTP Request Message Format.	5M	5	L3
	b) Define E-mail. Explain about architecture.	5M	5	L2
OR				
20	a) Discuss the world wide web architecture, principles and applications.	5M	5	L2
	b) Discuss the three domains of the Domain Name Space.	5M	5	L2