



R22 Regulation

Subject code: 4E3EE

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Regular Examinations, February 2024

COMPUTER NETWORKS

(Common to CSE, CSE(AI&ML) & CSE(DS))

Maximum Marks: 60

Date: 28.02.2024 Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 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		CO	Bloom Tx level
All the following questions carry equal marks (10x1M=10 Marks)			
1.a)	What are the protocols used in Application layer?	CO1	L2
b)	Compare Timing of Events in Circuit Switching and Packet Switching?	CO1	L2
c)	A bit string, 011110111110111110, needs to be transmitted at the data link layer. What is the string actually transmitted after bit stuffing?	CO2	L3
d)	What are Bridges?	CO2	L2
e)	Give two computer applications for which connection-oriented service and connectionless service is suitable?	CO3	L3
f)	Write the IP address format?	CO4	L2
g)	What is the difference between TCP and UDP?	CO4	L2
h)	What is multicasting?	CO3	L2
i)	What is SNMP?	CO5	L2
j)	What are the MIME headers?	CO5	L2
Part-B			
Answer All the following questions. (5X10M=50Marks)			Bloom Tx level
2	a. Compare and Contrast OSI reference model with TCP/IP model? [6m]	CO1	L2
	b. What are the advantages of fiber optics over copper as a transmission medium? Is there any downside of using fiber optics over copper? [4m]	CO1	L2
OR			
3	a. Differentiate between LAN, MAN and WAN? [5m]	CO1	L2
	b. Compare circuit-switched and packet-switched networks with respect to Call setup, Dedicated physical path, Bandwidth available, Time of possible congestion and Store-and-forward transmission aspects? [5m]	CO1	L2
4	a. Implement framing methods for the following data: [5m] 0100011111100011	CO2	L3
	(a) Byte count (b) Flag bytes with byte stuffing (c) Starting and ending flag bytes with bit stuffing. (d) Character stuffing.		

	b. Elucidate CSMA/CD Protocol? [5m]	CO2	L2
	OR		
5	a. Explain with a neat diagram how Sliding Window Protocol works? [5m] b. Explain Hamming code with an example. [5m]	CO2 CO2	L2 L4
6	a. Illustrate what kind of services the network layer provides to the transport layer at the network layer/transport layer interface? [5m] b. Explain ATM with neat diagram. [5m]	CO3 CO3	L4 L2
	OR		
7	a. Construct a tree using a shortest path algorithm. [5m]	CO3	L3
	b. Explain distance algorithm with an example. [5m]	CO3	L2
8	a. Without the transport layer, the whole concept of layered protocols would make little sense-How? [5m] b. Explain the Congestion control mechanisms in Transport Layer? [5m]	CO4 CO4	L2 L2
	OR		
9	a. Elucidate how TCP uses three-way handshake to establish connections? [5m] b. Explain congestion policies. [5m]	CO4 CO4	L2 L3
10	a. Explain e-mail and http. [5m] b. Explain SNMP. [5m]	CO5 CO5	L3 L2
	OR		
11	a. Discuss DNS with example. [5m] b. Explain WWW in detail. [5m]	CO5 CO5	L2 L3