RAMRAO ADIK INSTITUTE OF TECHNOLOGY, NERUL

(D Y Patil Deemed to be University)

Program: B.Tech
End Semester Examination: B.Tech. Semester IV
Course Code: CEC 404 Course Name: Computer Networks
Time: 2 hour
Max. Marks: 60
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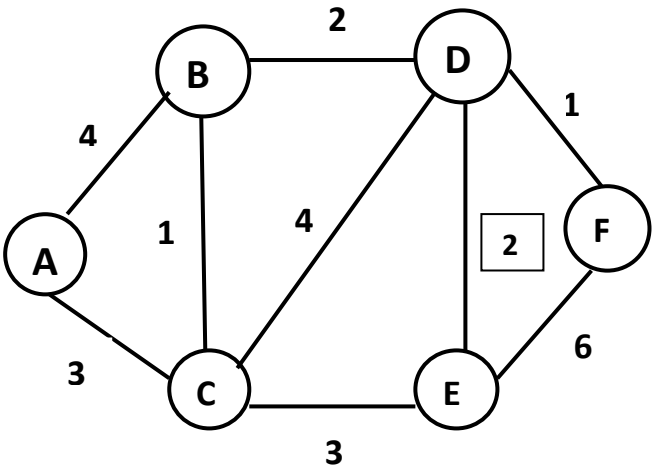
Instructions: 1. All three questions are compulsory

Que. No.	Question	Max. Marks	CO	BT
Q1	Solve any **Four**			
i)	What are the different types of networks? Stating along with the advantages and disadvantages of each type of network.	5	**CO1**	**BT2**
ii)	What is Simple Mail Transfer Protocol (SMTP) and how it works?	5	**CO2**	**BT2**
iii)	Which transport layer protocol ensures a reliable delivery of data? What are the mechanisms used to ensure reliability?	5	**CO3**	**BT2**
iv)	What is subnetting and why it is used? Find sub-network address and host id for the following: IP Address: 140.11.36.24, Subnet mask: 255.255.255.0 IP Address: 120.14.22.20, Subnet mask: 255.255.128.0	5	**CO4**	**BT3**
v)	Explain how performance is improved in CSMA/CD protocol compared to CSMA protocol?	5	**CO5**	**BT4**
vi)	Explain guided and unguided transmission medium in brief.	5	**CO6**	**BT2**

Que. No.	Question	Max. Marks	CO	BT
Q2 A	Solve any **Two**			
i)	Differentiate between Transmission Control Protocol (TCP) and User Datagram Protocol (UDP).	5	**CO1**	**BT4**
ii)	What is IPv6 protocol? Explain the IPV6 header format with diagram?	5	**CO4**	**BT2**
iii)	Encode a binary word 1011 into the even parity Hamming code.	5	**CO5**	**BT6**
iv)	With help of a neat diagram explain packet switching along with its advantages and disadvantages.	5	**CO6**	**BT4**
Q 2 B	Solve any **One**			
i)	Describe causes of TCP congestion? Explain congestion control policies used in TCP.	10	**CO3**	**BT2**

ii)	Define routing algorithm. Use Dijkstra's algorithm to find the shortest path from node A to every node. 	10	**CO4**	**BT3**

Que. No.	Question	Max. Marks	CO	BT
Q3	Solve any **Two**			
i)	Explain Domain Name System (DNS) working. What is a resource record?	10	**CO2**	**BT2**
ii)	What is User UDP? Explain the different fields in the Packet format of UDP.	10	**CO3**	**BT2**
iii)	What is the basic purpose of the Address Resolution Protocol (ARP)? Explain the operation of the ARP.	10	**CO5**	**BT4**

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Course Outcomes (CO) -Learner will be able to:

CO1: Explore the fundamental concepts computer networking and compare ISO – OSI model with TCP/IP model.
CO2: Evaluate and apply applications layer protocols.
CO3: Demonstrate the knowledge of Transport layer functions and protocols.
CO4: Design the network using IP addressing and sub netting / super netting schemes and analyze various routing algorithms and protocols at network layer.
CO5: Analyze Data Link layer protocols and congestion control algorithms.
CO6: Analyze transmission media & explore

BT1- Remembering, BT2- Understanding, BT3- Applying, BT4- Analyzing, BT5- Evaluating, BT6- Creating