Sagar Institute of Research & Technology-Excellence, Bhopal
II Mid Semester Examination, May 2025

SEMESTER: VI | **BRANCH: CSE**

Subject Code / Name: CS-602 / Computer Networks | **Time: 2:00 Hrs.**

Max. Marks: 40

NOTE: Attempt all questions. Internal choice is provided in each question.

Q. No.		Question Description	COs (Course Outcomes)	Level (Bloom's Taxonomy)	Marks
Q. 1	(A)	Compare Pure ALOHA and slotted ALOHA? Illustrate how the efficiency of slotted ALOHA is twice that of pure ALOHA?	CO1	L2	8
		OR			
	(A)	A Group of N stations share a 56 Kbps pure aloha channel. Each station outputs a 1000 bits frame on an average of once every 100 sec (stations are buffered). Calculate the max value of N?	CO1	L2	
Q. 2	(A)	Model TCP connection establishment and termination with suitable diagram.	CO2	L3	16
	(B)	Develop a short writeup explaining the following: i) CSMA/CA ii) CSMA/CD iii) IEEE Standards 802 series iv) DNS v) Fragmentation and reassembly			
		OR			
	(A)	Develop the format of IPv4 header? Describe the significance of each field.	CO2	L3	
	(B)	Construct the various timers used by TCP to perform its various operations.			
Q. 3	(A)	A company is granted the site address 181.56.0.0 (class B). The company needs 1000 subnets. Determine the subnets.	CO3	L4	16
	(B)	Categorize various classes of IP addresses in terms of their network-ID bits, host-ID bits, number of possible host, number of possible network and range for each class.			
		OR			
	(A)	The UDP header in hexadecimal format is as: 0632000D001CE217 List the following from it: i) Source port number ii) Destination port number iii)Total length iv) Length of the data v) Name of client process	CO3	L4	
	(B)	An organization is granted the block 211.17.180.0/24. The administrator wants to create 32 subnets. Determine the following:- a) the subnet mask b) the number of addresses in each subnet c) the first and last address in first subnet d) the first and last address in last subnet.			

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COs	Course Outcomes	Bloom's Taxonomy Level
CO 1	Understand and explain Data Communications System and its components. Understand Layered Architecture and various models of Networking.	L1/L2
CO 2	Illustrate the different types of network topologies and protocols with demonstration of the working of various networking protocols.	L3
CO 3	Analyze the concepts of Networking algorithms, MAC addressing and different contention schemes with current research problems in Computer Networks	L4
CO4	Evaluate and Implement the various routing algorithms and skills of sub netting.	L5

Bloom's Taxonomy Levels:-R: Remembering (L1), U: Understanding (L2)