Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025 **Time:** 02.00pm to 03.30pm

School: SOCSE	**Program:** B.Tech - CSE	
Course Code : CSE2251	**Course Name:** Data Communication and Computer Networks	
Semester: III	**Max Marks**: 50	**Weightage**: 25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**24**	**26**			

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	Define data communication and list its fundamental characteristics.	**2 Marks**	**L1**	**CO1**
2	Write any two advantages of star topology	**2 Marks**	**L1**	**CO1**
3	Differentiate between polling and token passing.	**2 Marks**	**L2**	**CO2**
4	What is the purpose of flow control?	**2 Marks**	**L2**	**CO2**
5	State the difference between CSMA/CD and CSMA/CA	**2 Marks**	**L2**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	Explain different types of network topologies with neat diagrams.	**10 Marks**	**L2**	**CO 1**
	b.	You are working as a network administrator in a company that is setting up a new communication system based on the OSI Model. The company wants to ensure proper implementation and troubleshooting at each layer of the model to optimize network performance. Explain how each of the seven layers of the OSI Model would be applied in this network setup.	**10 Marks**	**L3**	**CO 1**
		Or			
7.	**a.**	Explain Shannon's theorem and Nyquist theorem with examples.	**10 Marks**	**L3**	**CO 1**
	b.	You are assigned the task of setting up a communication network for a small organization. The network will use the TCP/IP Model as its communication framework. Identify and briefly describe the layers of the TCP/IP Model, highlighting the key functions of each layer in ensuring effective communication within a network.	**10 Marks**	**L3**	**CO 1**

8.	**a.**	Describe the working of Pure ALOHA and Slotted ALOHA with diagrams.	**10 Marks**	**L3**	**CO 2**
	b.	Explain CSMA/CD protocol with a neat flow diagram	**10 Marks**	**L3**	**CO 2**
		Or			
9.	**a.**	Explain Block coding with an example scenario.	**10 Marks**	**L2**	**CO 2**
	b.	Discuss controlled access methods: reservation, polling, and token passing.	**10 Marks**	**L2**	**CO 2**