Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – MAY 2025

Date: 24-05-2025 **Time:** 01:00 pm –04:00 pm

School: SOIS	**Program:** BCA	
Course Code : CSA2004	**Course Name :** COMPUTER NETWORKS	
Semester: II	**Max Marks**:100	**Weightage**: 50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**26**	**22**	**26**	**26**	**NA**

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. **10Q x 2M=20M**

1	Define a computer network.	2 Marks	L1	CO1
2	Mention any two protocols used in the Application Layer of the TCP/IP model.	2 Marks	L1	CO1
3	A signal travels through an amplifier, and its power is increased 10 times, given that $P2=10P1$. Calculate the amplification (gain of power) in decibels (dB) for this case	2 Marks	L1	CO1
4	Define Redundancy bit.	2 Marks	L1	CO2
5	Identify the class of these classful IP addresses: a. 130.34.54.12 b. 200.34.2.1	2 Marks	L1	CO3
6	What is RIP?	2 Marks	L1	CO3
7	What is the function of a router?	2 Marks	L2	CO3
8	Define Three way handshaking.	2 Marks	L1	CO4
9	Differentiate between TCP and UDP.	2 Marks	L1	CO4
10	Define Socket Address.	2 Marks	L1	CO4

Part B

Answer the Questions **Total 80 Marks.**

11.	a.	Describe the OSI reference model in detail. Include the functions of each layer.	10 Marks	L3	CO1
	b.	Explain the different types of computer networks with examples and features	10 Marks	L2	CO1

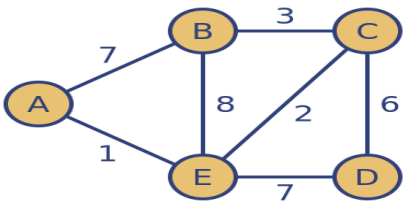
or

12.	a.	Explain the characteristics and components of a data communication system.	8 Marks	L2	CO1
	b.	Describe different types of transmission media with examples	12 Marks	L2	CO1

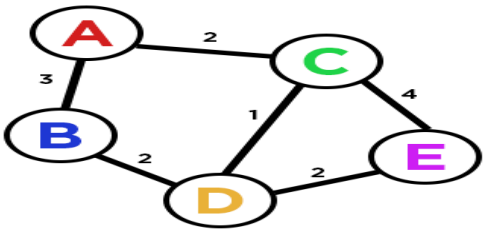
13.	a.	Describe the different types of transmission impairments. How do they affect signal quality?	10 Marks	L2	CO2
	b.	Describe the Go-Back-N ARQ mechanism. What happens when a frame is lost in transmission?	10 Marks	L2	CO2

or

14.	a.	Given the dataword 101001111 and the divisor 10111, demonstrate the generation of the CRC codeword at the sender site using binary division.	10 Marks	L2	CO2
	b.	Discuss the various performance metrics in a data communication system.	10 Marks	L2	CO2

15.	a.	Consider a network with 6 routers A to D connected with links having weights as shown in the following diagram.  All the routers use the distance vector based routing algorithm to update their routing tables. Find Initial routing table Find the updated routing table for A to D Find the Minimum Distance between Node A to Node D	12 Marks	L2	CO3
	b.	Describe the various transition techniques from IPv4 to IPv6	8 Marks	L2	CO3

Or

16.	a.	Using the Link State routing algorithm, find the optimal route for the given network with Root node A.  	10 Marks	L2	CO3
	b.	Discuss the concepts of Classful and Classless IP addressing. How do they differ in terms of address allocation and routing?	10 Marks	L2	CO3

17.	a.	What are the main features of HTTP, and how does it work?	10 Marks	L2	CO4
	b.	What is DNS, and how does it work? Describe its main parts and why it's important on the internet	10 Marks	L2	CO4

Or

18.	a.	What is SNMP, and how does it help in sending emails?	10 Marks	L3	CO4
	b.	Explain how UDP works and its datagram format with neat diagram.	10 Marks	L2	CO4