



VIT

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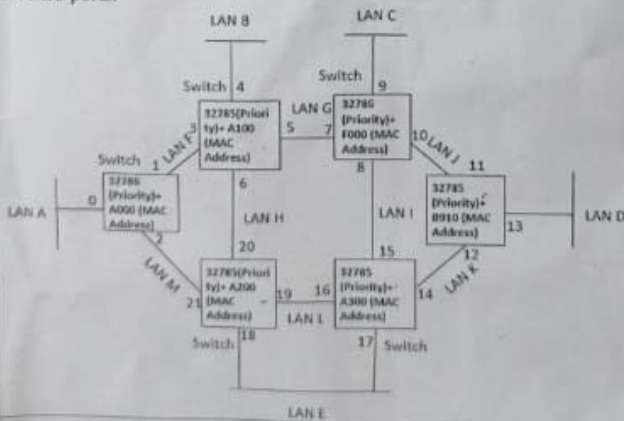
REG.NO.:

SCHOOL OF ELECTRONICS ENGINEERING (SENSE)
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

SLOT: A2+TA2

Programme Name & Branch : B. Tech ECE
Course Code and Course Name : BECE401L - Computer Communications and Networks
Faculty Name(s) : Dr. VELMURUGAN T, Dr. PRAKASAM P, Dr. NANDAKUMAR S, Dr. DEEPIKA
RANI SONA, Dr. NAVEEN MISHRA, Dr. ROHIT MATHUR
Class Number(s) : VL2024250500663, 0665, 0667, 0669, 0675, 4706
Date of Examination : 27-1-2025
Exam Duration : 90 minutes
Maximum Marks: 50

- General instruction(s):
- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- Course Outcomes
 - CO1- Infer the basic concepts of OSI and TCP reference model in computer network protocols and internetworking devices.
 - CO2- Examine the LAN bridges such as Transparent Bridges and Source Routing Bridges.
 - CO3- Deploy the error & flow control mechanism and medium access control.

Q.N	Question	Max Marks	CO	BL
1	i) Match the following to one or more layers of the OSI model: a) Establish, manage, and terminate process b) Format and code conversion c) Reliable process-to-process delivery. d) Provides user services such as e-mail and file transfer e) Mechanical, Electrical and Functional Interface f) Shortest Path Finding ii) Compare the performance of bus and Mesh topologies.	6+4	CO 1	BL2
2	Write the spanning tree algorithm. Analyse the spanning tree for the switched LAN shown in figure below. Assume that LANs A, C, E, G and I are Gigabit Ethernet (Cost=4) and the rest are Fast Ethernet (Cost=19). Compute and draw the spanning tree and label the Root Switch, root ports, designated ports and blocked ports. 	15	CO 2	BL3

3	Seven stations are connected to an extended LAN through transparent bridges, as shown in figure below. Assume the forwarding tables are empty for all the bridges. Also assume that entries added to each forwarding table do not have timeout. Suppose the following stations transmit frames are as follows. - Station 2 transmits to Station 7 - Station 6 transmits to Station 1 - Station 5 transmits to Station 2 - Station 3 transmits to Station 1 - Station 4 transmits to Station 6 Fill in the forwarding tables with appropriate entries and function after the frames have been completely transmitted.	10	CO 2	BL3
4	Given the data word 1010011110 and the divisor X^4+X^2+X+1 - Show the generation of the codeword at the sender end using binary division. - What is the syndrome at the receiver end if the data word has an error in the 5th bit position counting from the right side?	10	CO 3	BL3
5	Why do reliable data transfer protocols need sequence numbers? How many unique sequence numbers does Stop-and-Wait protocol need? How many bits are needed to represent Stop-and-Wait's unique sequence numbers?	5	CO 3	BL2