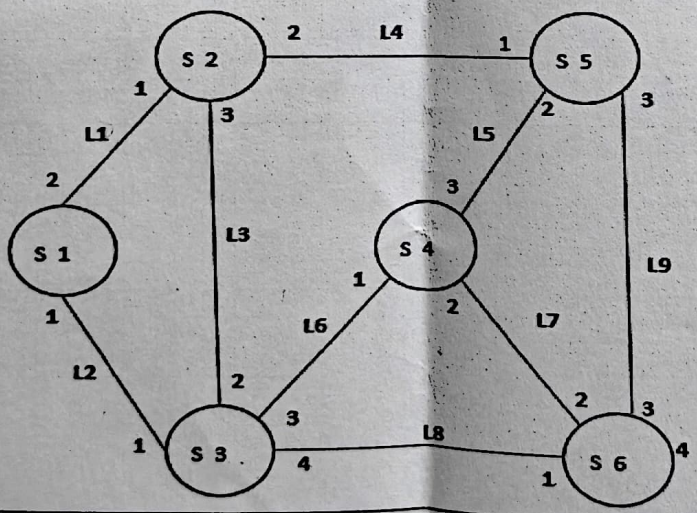
SCHOOL OF ELECTRONICS ENGINEERING (SENSE)
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

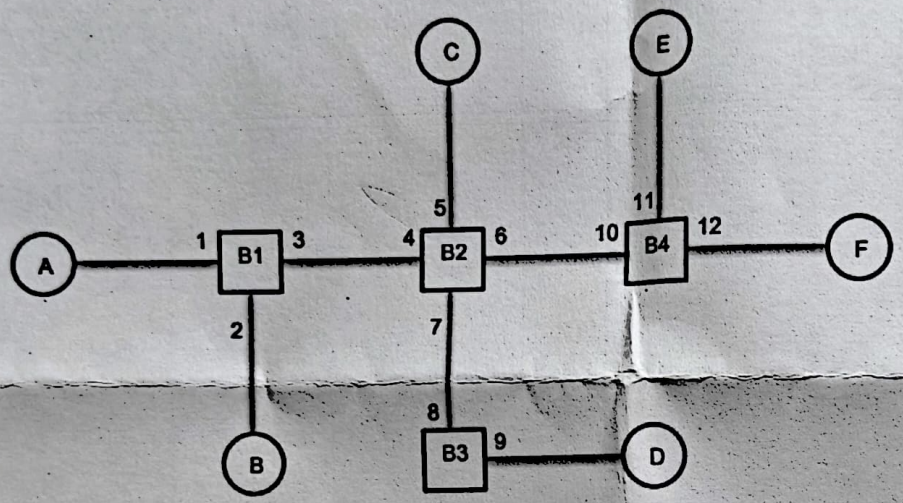
SLOT: A1+TA1

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
Class Number(s) : VL2024250500661, 0664, 0666, 0673, 4698
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.

S.No	Question	Max Marks	CO	BL
1	i) Match the following to one or more layers of the OSI model: a. Route determination. b. Flow control. c. Interface to transmission media. d. Provides access for the end user. e. Service Port Address f. Format and Code Conversions ii) A computer is moved from one department to another. Does the physical address need to change? Does the IP address need to change? Does it make a difference if the computer is a laptop?	6+4	CO 1	BL2
2	Write the spanning tree algorithm. Analyse the Spanning Tree for the extended LAN given below. For the following bridged LAN, assume that LANs 1, 3, 5, 7 and 9 are Gigabit Ethernets (Cost=4) and the rest are Fast Ethernets (Cost=19). Switches are labelled with S followed by their IDs. Compute and draw the spanning tree and label the Root Switch, root ports, designated ports and blocked ports.	15	CO 2	BL3



3	Consider Stations A, B, C, D, E, F and learning bridges B1, B2, B3, B4, with their corresponding port numbers marked 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 station's transmit frames as follows. a. Station B transmits to Station F b. Station E transmits to Station A c. Station D transmits to Station D d. Station C transmits to Station A e. Station E transmits to Station F Let Station B is moved and connected to B4 through new port number 13. f. Station B transmits to Station D g. Station D transmits to Station F h. Station C transmits to Station B i. Station E transmits to Station A j. Station A transmits to Station C  Fill in the forwarding tables with appropriate entries and function after the frames have been completely transmitted.	10	CO 2	BL3
4	A sender needs to send VITUNIVCCN to a receiver. i. Calculate the checksum at the sender site. ii. Find the checksum at the receiver site for the following cases due to channel error: U is detected as V **Hint: ASCII Code is represented in hexadecimal for 'V' is 56, 'I' is 49, 'T' is 54, 'U' is 55, 'N' is 4E and 'C' is 43.**	10	CO 3	BL3
5	Suppose that a Stop-and-Wait ARQ system has a time-out value that is less than the time required to receive an acknowledgment. Sketch the sequence of frame exchanges that transpire between two stations when station A sends six frames to station B and no errors occur during transmission.	5	CO 3	BL2