Vellore Institute of Technology

School of Electronics Engineering
Fall Semester 2024-25
Continuous Assessment Test - II

SLOT:

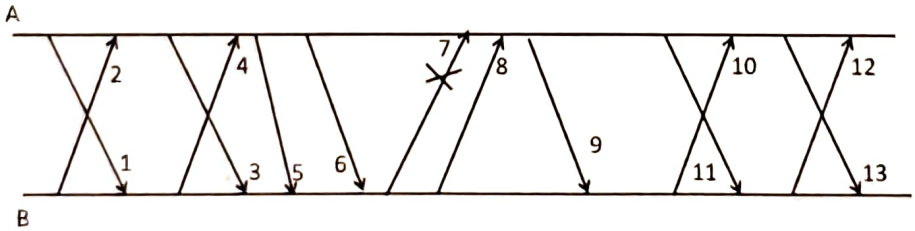
Programme : B.Tech (ECE)
Course Name : Computer Communications and Networks
Class Nbr: VL2024250102836 Faculty members: Dr. Rohit Mathur
Session : FN

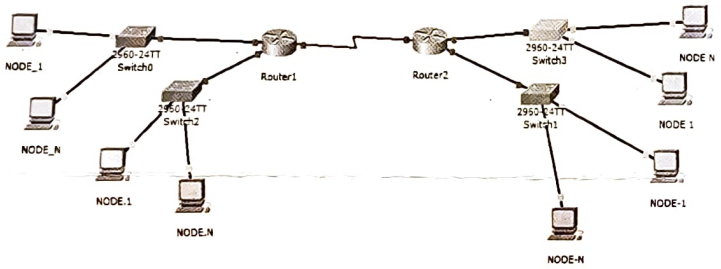
Course Code : BECE401L
Slot : C2+TC2

Date of Exam: 15, Oct 2024
Max 50 Marks

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 (CO3: Deploy the error & flow control mechanism and Medium access control. CO4: configure the network with IP address and find the shortest path. CO6: Understand the fundamentals of DNS, FTP,SMTP,HTTP and network security.)

Q.No	Question	M	CO	BL
1	a. Suppose that you want to download a document from VTOP to your computer system, which type of document transfer protocol will be used? Draw and explain the protocol operation. b. Find the given domain is either generic or country specific or inverse domain. i. www.vit.ac.in ii. www.flipkart.com iii. 122.128.10.11 iv. www.univercityofjapan.ac.jp v. www.olx.com	5 +5	CO - 6	BL2
2	Figure corresponds to an HDLC ABM frame exchange. Consider 3 bits to represent the sequence number. Complete the diagram by completing the labelling of the frame exchanges.  **1) BI00 2) AI00 3) xIxx 4) xIxx 5) xIxx 6) xIxx 7) xIxx 8) xIxx 9) xSREJx 10) xIxx 11) xIxx 12) xIxx 13) xIxx**	10	CO - 3	BL3
3	(a) From the received data, 3E 23 3D 1E 3A 3D 1D 5A 3D 1E 3D 1E 9A 34 3D 1D 3D 1D 34 3D 1E 3E, de-stuff the data using the Flag byte 3E and control escape octet 3D.	4 +6	CO - 3	BL3

	(b) In the data link layer of a computer network, bit-oriented framing and bit stuffing method is applied. Assuming that 01110 bit string is used as the starting and ending delimiter. (i). At the sender, if the bit string delivered by the network layer to the data link layer is given as follows. Obtain the bit string at the data field of the sender's data link layer. 1 0 1 1 1 1 1 1 0 0 1 1 1 0 0 0 1 1 1 1 (ii). At the receiver, if the bit string delivered by layer 1 to layer 2 is as follows then obtain the Actual bit string. 0 1 1 1 0 0 0 1 0 1 0 0 1 1 0 0 1 1 0 1 1 0 0 0 1 1 0 0 1 1 0 1 0 0 0 1 1 1 0			
4	Figure shows a site with a given network address and mask. The organization needs thousand subnetworks, each with an equal number of hosts. The administration has proposed to make five subnetworks from available thousand subnetworks as shown in the Figure. The ISP has allocated the IP address: **171.71.0.0** for this site. Using this IP address, to start the subnet from 881th subnet: • Find the range of Host IDs assigned to each subnet. • Assign 1st host ID of each subnet as the gateway address. • Node1 assigned the 2nd host id and node number n assign the last host id. • Router1 and Router 2 serial port to assign first and last usable address in the 885th subnet. • Find the broadcast ID of each subnet. • Redraw the network diagram by representing the Host ID, subnetwork ID, gateway address. 	10	CO - 4	BL3
5	Number of needed subnets 1000 and Network Address **40.0.0.0** Find a. Address class b. Default subnet mask c. Custom subnet mask d. Total number of subnets e. Total number of host addresses f. Number of usable addresses g. Number of bits borrowed h. What is the 25th subnet range? i. What is the subnet number for the 499th subnet? j. What is the subnet broadcast address for the 501st subnet? k. What are the assignable addresses for the 600th subnet?	10	CO - 4	BL3