SVKM's NMIMS
MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING / SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

Academic Year: 2022-23

Programme: B.Tech / MBA Tech(EXTC / Computer/Computer Science) Year: II / III Semester: III / V

Subject: Computer Networks

Date: 16 November 2022

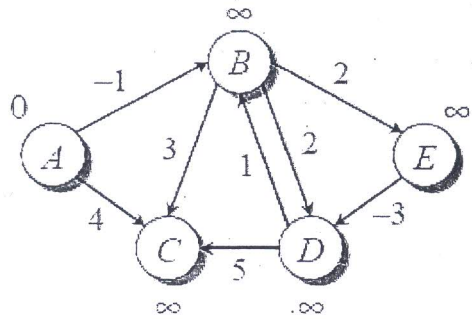
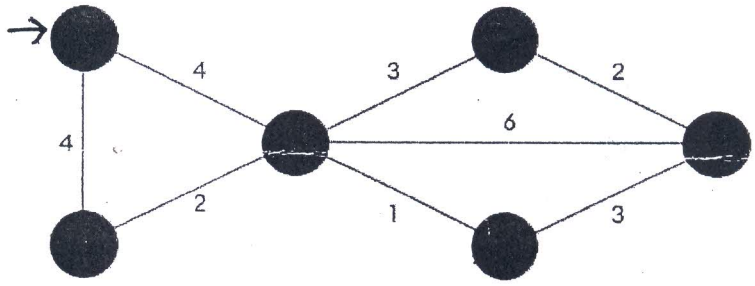
Marks: 100
Time: 10.00 am - 1.00 pm
Durations: 3 (Hrs)
No. of Pages: 3

Final Examination

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) Question No. 1 is compulsory.
2) Out of remaining questions, attempt any 4 questions.
3) **In all 5 questions to be attempted.**
4) All questions carry equal marks.
5) **Answer to each new question to be started on a fresh page.**
6) **Figures in brackets on the right hand side indicate full marks.**
7) **Assume Suitable data if necessary.**

Q1		Answer briefly:	[20]
CO-4, SO-1, BL-5	a.	Justify the following statement-User Datagram protocol (UDP) is an unreliable protocol.	[5]
CO-1, SO-1, BL-2	b.	Discuss principles of protocol layering which makes the bidirectional communication between the hosts? Draw suitable diagram too.	[5]
CO-3, SO-1, BL-2	c.	Write difference between BOOTP and DHCP.	[5]
CO-4, SO-1, BL-2	d.	Discuss about role of web server? Elaborate working of http protocol?	[5]
Q2 CO-3, SO-1, BL-1,3	a.	Describe use of distance vector routing algorithm? What are its main key points? Apply Bellman-Ford algorithm to find the shortest path from A to each of other node in following graph.	[10]

			
CO-4, SO-1, BL-2	b.	Explain open-loop congestion control and closed-loop congestion control in the Transport Layer? (Any two- two mechanism from open and closed loop) .	[10]
Q3 CO-3; SO-1; BL-2	a.	Explain working of OSPF routing algorithm by using diagram.	[10]
CO4; SO-1;BL- 2	b.	Discuss about use of DNS server with reference of various lookup methods?	[10]
Q4 CO-1,SO-2, BL-3	a.	Illustrate different types of guided transmission media with respect to the advantages, applications and limitations?	[10]
CO-1; SO-1; BL-3	b.	Explain working of Dijkstra's algorithm. Apply Dijkstra's algorithm to find shortest path for following network. 	[10]
Q5 CO-2; SO-1; BL-2,5	a.	A bit stream 1010001101 is transmitted using the standard CRC method. The generator polynomial is x5+x4+x2+1. What is the actual bit string transmitted? Also show the error checking mechanism at receiver's end.	[10]
CO-3; SO-1, BL-2	b.	Explain all switching techniques in detail with the help of diagrams.	[10]
Q6	a.	Explain working of CSMA/CD and CSMA/CA. Compare CSMA/CD with	[10]

CO-2; SO-1 BL-2		CSMA/CA.	
CO-4; SO-1; BL-3	b.	Determine the Services offered by Stream Control Transmission Protocol (SCTP) in the Transport Layer.	[10]
Q7 CO-2 ; SO-1 BL-3	a.	Illustrate working of time division digital communication? Brief about importance of synchronization in TDM?	[05]
CO-3,SO-1, BL-3	b.	Given IP Address – IP address 192.168.10.44 with subnet mask 255.255.255.248 (/29). Find the number of subnets, the number of hosts per subnet. Also, for the first subnet block, find the subnet address; first host ID, last host ID.	[05]
CO-1, SO-1, BL-2	c.	Explain the types of computer networks based on their applications and comparative features.	[05]
CO-2 ; SO-1 BL-2	d.	Explain working of Stop and Wait protocol by using flow diagram?	[05]