SVKM'S NMIMS

MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT ENGINEERING / SCHOOL OF TECHNOLOGY MANAGEMENT ENGINEERING

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

AcademicYear: 2022-2023

Subject: Computer Networks

Date : 27 January 2023

Marks: 100

Time: 10.00 am - 1.00 pm

Durations: 3 (Hrs)

No. of Pages: 3

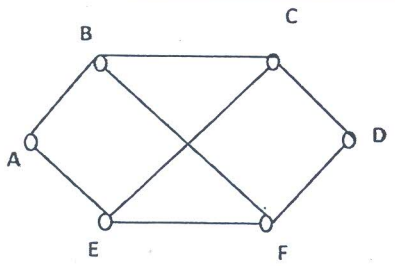
Re-Examination (2022-23)

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-1, SO-1, BL-2	a.	Compare star and mesh network topology.	[5]
CO-2 ,SO-1 BL-2	b.	Describe working of Cumulative acknowledgement (ARQ) with example.	[5]
CO-1, SO-1, BL-3	c.	Let assume, an organization establishing a network in the premises. The objective is to connect the end system with the main server to provide seamless connectivity. Identify the type of networking and provide suitable reasoning.	[5]
CO-4, SO-1, BL-1	d.	Write name of email protocol used to move messages through the internet from source to destination? Explain working of email protocol?	[5]
Q2 CO-2, SO-1, BL-3	a.	Five-bit messages are transmitted using a Hamming code. Calculate the number redundant bits needs to be added? Show the bit pattern transmitted for the message 11010. Assume that EVEN parity is used in the Hamming code. Suppose Fifth bit of transmitted data is corrupted during the transmission process. Detect and correct	[10]

		the error using hamming code.	
CO-2, SO-1, BL-2	b.	Describe use of ARP and RARP protocol? Explain working of these protocols?	[10]
Q3 CO-2; SO-1; BL-2	a.	Discuss about use of multiplexing and use of frequency division multiplexing in analog signal by using diagram?	[10]
CO4; SO-1;BL- 2	b.	Explain leaky bucket algorithm and Compare it with token bucket algorithm.	[10]
Q4 CO-3; SO-1; BL-3	a.	Elaborate role of subnetting in network? ABC Company wants to create eight separate subnets by using network id-192.168.172.0. Calculate subnet mask for above network. Find out network address and broadcast address for each subnet. Find number of devices in each subnet.	[10]
CO-4; SO-1; BL-3	b.	Illustrate the working of file transfer protocol works? What are different transmission modes are used for file transfer?	[10]
Q5 CO-4; SO-1; BL-3	a.	Illustrate the TCP connection process with detailed flow diagram using three-way handshaking.	[10]
CO-3; SO-1, BL-5	b.	Justify the need of interior routing? Explain working of RIP protocol? Summarize advantages and disadvantages of RIP?	[10]
Q6 CO-2; SO-1, BL-2	a.	Discuss about sliding window protocol? Explain with the help of an example. Differentiate between Selective repeat and Go back-N.	[10]
CO-3; SO-1; BL-3	b.	Illustrate use of Distance Vector Routing? Consider the subnet shown below. Distance vector routing is used and the following vector have just come into router C: from B: (5,0,8,12,6,2) from D: (16,12,6,0,9,10) and from E: (7,6,3,9,0,4). The measured delays to B, D, and E are 6, 3, and 5 respectively. Find C's new routing table? Give both outgoing line to use and the expected delay.	[10]

			
Q7 CO-1, SO-1, BL-2	a.	Explain the process involve in layered communication used in networks with appropriate diagram.	[05]
CO-1,SO-1, BL-2	b.	Enlist different guided transmission medias. Explain working of fiber optics cable?	[05]
CO-1,SO-1, BL-2	c.	Compare pure aloha with slotted aloha.	[05]
CO4; SO-1; BL-2	d.	Differentiate Transmission Control Protocol (TCP) and User Defined Protocol (UDP).	[05]