SVKM's NMIMS

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

Academic Year: 2021-22

Programme: B. Tech / MBA Tech (EXTC) Year: III Semester: VI

Subject: Computer Networks

Date: 11 April 2022

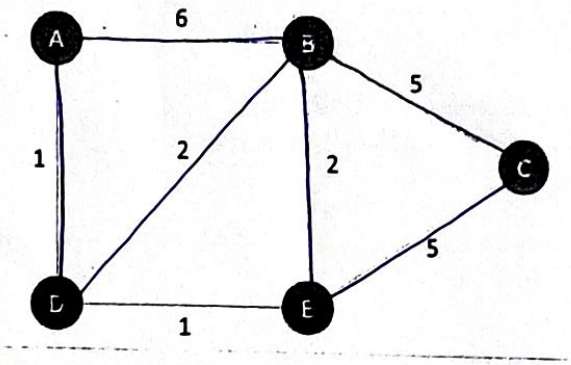
Marks: 100
Time: 10.00 am to 1.00 pm
Durations: 3 (hrs)
No. of Pages: 3

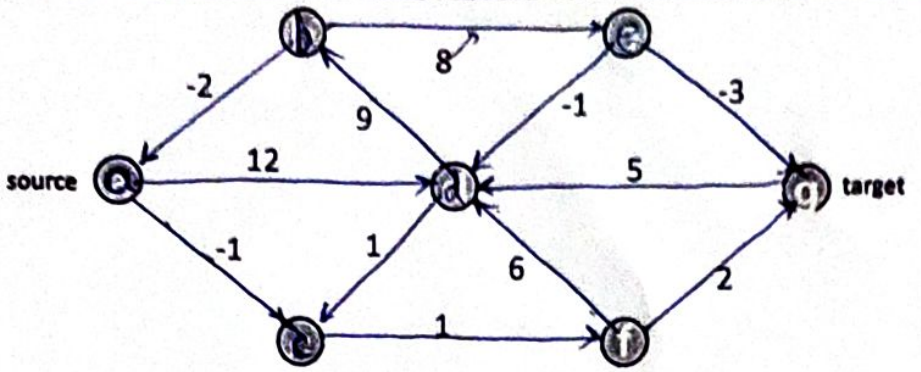
Final Examination

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-2; SO-1; BL-2	a.	Classify the different transmission media and state the applications of each guided media.	[4]
CO- 2; SO-1; BL-1	b.	Define flow control and error control.	[4]
CO-2; SO-2; BL-2	c.	Explain why collision is an issue in random access protocol but not in controlled access or channelization protocols.	[4]
CO-4; SO-2; BL-1,5	d.	What is the role of Internet Group Management Protocol? Justify with an example.	[4]
CO-3; SO-1; BL-5	e.	UDP provides connectionless service and is an unreliable transport layer protocol. Justify these statements.	[4]
Q2 CO-2; SO-6; BL-2,5	a.	Explain the principle of cyclic redundancy check. Justify the answer using appropriate sketch.	[8]

CO-2; SO-1; BL-2	b.	Compare CSMA/CD and CSMA/CA methods. Explain in detail the concept of CSMA/CD method with diagram.	[12]
Q3 CO-1; SO-1; BL-2	a.	Explain various types of network topologies along with diagrams and examples.	[8]
CO-3; SO-4; BL-6	b.	Discuss the method to find the physical address and logical address in network layer, also compare both the protocols.	[12]
Q4 CO-4; SO-6; BL-5,2	a.	Evaluate the shortest path from source vertex A to every other vertex in the graph using Dijkstra's Algorithm. Illustrate step-by-step procedure and the shortest path table. 	[10]
CO-3; SO-2; BL-2	b.	Demonstrate the TCP connection process with detailed flow diagram using three-way handshaking.	[10]
Q5 CO-2; SO-6; BL-6	a.	Discuss the Application layer protocol - SNMP and its client/server architecture.	[8]
CO-4; SO-6; BL-5,2	b.	Estimate the shortest routes from source to all vertices started from source vertex 'a' in the given graph using the Bellman Ford Algorithm. Summarize the final result in a tabular format.	[12]

			
Q6 CO-2; SO-4; BL-1,2	a.	What is sliding window protocol? Draw and explain the working of selective repeat ARQ protocol using 5 frame. Specify its advantages over simplest protocol.	[12]
CO-4; SO-6; BL-6	b.	An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP needs to distribute these addresses to two groups of customers as follows: a. The first group has 64 customers; each needs 256 addresses. b. The second group has 128 customers; each needs 128 addresses. Design the sub blocks with the range of IP addresses and find out how many addresses are still available after these allocations.	[8]