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

Academic Year: 2021-22

Programme: B. Tech (Computer Science & Business Systems) Year: III Semester: VI

Subject: Computer Networks

Date: 13 April 2022

Marks: 100
Time: 10.00 am to 1.00 pm
Durations: 3 (hrs)
No. of Pages: 02

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:	
CO-2 ; SO- ; BL-1	a.	Networking Devices	[5]
CO- ; SO-1 ; BL-1	b.	HTTP	[5]
CO- ; SO-2 ; BL-1	c.	Wireless LAN	[5]
CO-2 ; SO-2 ; BL-1	d.	CSMA/CD	[5]
Q2 CO-1; SO-7; BL-4	A	Compare and Contrast different network topologies along with advantages and disadvantages.	[10]
CO-1; SO-2; BL-3	B	The layers are designed as service providers to their upper layers and service users for the layers below them. Explain this statement with respect to OSI Model.	[6]
CO-4; SO-1; BL-1	C	Describe the working of DNS	[4]
Q3 CO-2; SO-2; BL-5	A	A sender wants to send the data 10011101 to the receiver. For error detection they are using CRC and mutually agreed on a CRC generator polynomial given as X^3+1. 1. Calculate the actual bit stream transmitted using the CRC. 2. Corrupt the third bit from left (start numbering with 1) and show how the error is detected by applying CRC.	[10]
CO-4; SO-1; BL-2	B	What is Quality of Service? Describe various approaches used for ensuring quality of service.	[10]
Q4 CO-4; SO-2; BL-4	A	Explain reliable and connection-oriented services. Analyze the connection establishment process of TCP	[10]
CO-3; SO-7; BL-5	B	Illustrate class-full addressing with class ranges. Consider the IP Address 200.1.2.0 and answer the following questions: A. Class of IP Address B. Divide the network into 4 subnets and calculate the subnet address C. Range of IP Addresses in each subnet D. Broadcast Address for each subnet E. First and last host address in each subnet	[10]

Q5 CO-2; SO-2; BL-3	A	Explain sliding window protocol. Discriminate between Go-back-N and Selective Repeat protocols.	[10]
CO-3; SO2-; BL-4	B	Compare BOOTP and DHCP	[6]
CO-2; SO-2; BL-5	C	The bandwidth of a noisy channel is 4 KHz, and the signal to noise ratio is 100. Calculate the maximum bit rate.	[4]
Q6 CO-3; SO-1; BL-2	A	Explain Distance Vector Routing algorithm with example. Also explain count to infinity problem.	[10]
CO-4; SO-1; BL-1	B	Draw TCP segment header and describe any 3 fields.	[6]
CO-2; SO-1; BL-1	C	What is ALOHA? Briefly explain Slotted ALOHA.	[4]