

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2023		
(B.Tech) Program: Computer Scheme II		
Examination: TY Semester: V		
Course Code: CEC503and Course Name: Computer Network		
Date of Exam: 02/12/23	Duration: 2.5 Hours	Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	What are the functions of layers in OSI model.	2M	CO1	U
ii)	Identify the difference between UTP and STP.	2M	CO2	R
iii)	What is framing? Why is it needed? It is the function of which layer?	2M	CO3	U
iv)	Which are the various types of addresses used in OSI model.	2M	CO4	U
v)	“UDP is an unreliable protocol” Justify this statement	2M	CO5	U
vi)	Write the use of Telnet	2M	CO6	R
vii)	“ Mesh is fastest and reliable topology compared to bus.” Justify the statement.	2M	CO1	U
viii)	Describe HDLC protocol.	2M	CO5	R
Q.2	Solve any four questions out of six.	16		
i)	In which topology, data can be transferred at the fastest speed? Explain about that topology.	4M	CO1	U
ii)	Compare Circuit switching and Packet Switching	4M	CO2	U

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iii)	Classify the various multiple access methods and explain CSMA-CD in detail.	4M	CO3	U
iv)	A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1 . What is the actual bit string transmitted?	4M	CO3	AP
v)	How is a TCP connection established?	4M	CO5	U
vi)	What role does HTTP frame format in detail?	4M	CO6	U
Q.3	Solve any two questions out of three.	16		
i)	Write a short note on networking devices like Hub, Bridge, Switch and Router.	8M	CO1	U
ii)	An organization is granted the block 16.0.0.0/8. The administrator wants to create 500 fixed-length subnets. a. Mark the subnet mask. b. Estimate the number of addresses in each subnet. c. Estimate the first and last addresses in subnet 1. d. Estimate the first and last addresses in subnet 500.	8M	CO4	Ev
iii)	Explain about IPV4 datagram format. What is subnetting? Explain it with an example.	8M	CO5	U
Q.4	Solve any two questions out of three.	16		
i)	A bit stream 10011101 is transmitted using the standard CRC method. The generator polynomial is x^3+1 . 1. What is the actual bit string transmitted? Suppose the third bit from the left is inverted during transmission. How will the receiver detect this error?	8M	CO2	Ap
ii)	Explain the working of CDMA protocol.	8M	CO3	U
iii)	Choose any one application layer service for mail or file transfer and explain its working	8M	CO6	Ap