

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

**End Semester Exam**

May – June 2022-23

**(B. Tech ) Program: Information Technology**

Examination: SY Semester: IV

Course Code: ITC402

Duration: 2.5 Hours

16/5/2023

Course Name: Computer Network and Network Design

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
<b>Q 1</b>	<b>Solve any six questions out of eight:</b>	12		
i)	List the Advantages and disadvantages of Star Topology.	02	CO1	1
ii)	Define ALOHA protocol and its type.	02	CO1	1
iii)	List the protocols for Noisy and noiseless channels.	02	CO2	1
iv)	Define Propagation Delay.	02	CO3	1
v)	List at least four port nos. with their description	02	CO4	1
vi)	Define Jitter and Bandwidth.	02	CO4	2
vii)	What are the types of Compression Techniques & list the Benefits.	02	CO5	1
viii)	What are the functionalities of VPN	02	CO6	2
<b>Q.2</b>	<b>Solve any four questions out of six.</b>	16		
i)	Describe the features of TCP /IP model	04	CO1	2
ii)	Distinguish ALOHA and Slotted ALOHA with proper diagram.	04	CO2	2

iii)	Compare IPV4 and IPV6.	04	CO3	4
iv)	Explain the working of Remote procedure call (RPC).	04	CO4	2
v)	Describe the Architecture of the email system & Message formats.	04	CO5	2
vi)	Describe the Hub & Switches and justify its uses in Networking.	04	CO6	5
<b>Q.3</b>	<b>Solve any two questions out of three.</b>	16		
i)	Describe the ISO/OSI Model in Detail with proper Diagram & List the pros and cons for the same.	08	CO1	2
ii)	Explain Link State Routing Algorithm and List the advantages over distance vector routing.	08	CO3	
iii)	Describe the World Wide Web architectural overview and List the functions of Application Layer.	08	CO5	2
<b>Q.4</b>	<b>Solve any two questions out of three.</b>	16		
i)	Describe the types of error detection and correction Apply the Checksum technique on a given string (7,11,12,0,6).	08	CO2	2
ii)	Describe the TCP congestion control in detail with proper diagram & Explain the terms : Slow start , Additive increase, multiplicative decrease	08	CO4	2
iii)	Describe the Virtual LAN & it types. List the advantages and disadvantages.	08	CO6	2