

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

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| May-June 2023-24 | | |
| (B.Tech.) Program: Information Technology | Scheme - II | |
| <i>Supplementary</i> Regular Examination: SY Semester: IV | | |
| Course Code: ITC402 and Course Name: Computer Network & Network Design | | |
| Date of Exam: 27/07/2024 | Duration: 02.30 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) | List the advantages of LAN | 2 | CO1 | 1 |
| ii) | List the wireless application and its Frequency ranges. | 2 | CO2 | 1 |
| iii) | Describe Packet switch networks with example | 2 | CO2 | 1 |
| iv) | Describe the addressing scheme in network layer | 2 | CO3 | 1 |
| v) | List the transport layer services | 2 | CO4 | 1 |
| vi) | List the UDP applications and its advantages. | 2 | CO4 | 1 |
| vii) | what are the functionalities of presentation layer | 2 | CO5 | 1 |
| viii) | What are the parameters for measuring network performance? | 2 | CO6 | 1 |
| Q.2 | Solve any four questions out of six. | 16 | | |
| i) | Describe the advantages of LAN, MAN & WAN. | 4 | CO1 | 4 |
| ii) | Describe the functionalities of data link layer. and explain flow control in brief. | 4 | CO2 | 4 |
| iii) | Describe the features of IPv6 and list the pros & cons. | 4 | CO3 | 2 |
| iv) | Describe the flow control and error control in TCP. | 4 | CO4 | 2 |
| v) | Differentiate HTTP and FTP. | 4 | CO5 | 4 |
| vi) | Describe the routers and Gateways and justify its uses in networking. | 4 | CO6 | 4 |

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| Q.3 | Solve any two questions out of three. | 16 | | |
| i) | Describe the TCP/IP Model in detail with proper diagram & Differentiate the OSI and TCP/IP model. | 8 | CO1 | 4 |
| ii) | Describe the DHCP protocol in detail and list the advantages & disadvantages. | 8 | CO3 | 2 |
| iii) | Describe the functionalities of application layer in OSI model and explain the HTTP protocol. | 8 | CO5 | 2 |
| Q.4 | Solve any two questions out of three. | 16 | | |
| i) | Justify and describe CRC code with Example and compare with hamming code. | 8 | CO2 | 5 |
| ii) | Justify the fields of UDP Header & and differentiate TCP and UDP | 8 | CO4 | 5 |
| iii) | Design the Medium size computer network with proper diagram and describe the following general steps: 1. Requirement of networks, 2. need of the network, 3. design the network topology. 4. Network Devices, IP Addressing. | 8 | CO6 | 6 |
