

AIDS/CH.

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

Subject Code: AIDLC5051

Subject Name: Computer Networks

Date: 05/06/2023

| May-June 2022 Program: B. Tech Examination: TY Semester: V Course Code: AIDLC5051 Course Name: Computer Networks 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) | List the various types of network topologies. | 2 | CO1 | Un |
| ii) | Compare circuit switching and Packet switching? | 2 | CO2 | Un |
| iii) | Define Piggybacking and its benefits. | 2 | CO3 | Un |
| iv) | Give functions of repeater and router. | 2 | CO4 | Un |
| v) | Draw IPV4 header and show different fields in it. | 2 | CO4 | Un |
| vi) | Compare TCP and UDP. | 2 | CO5 | Un |
| vii) | In the TCP segment, what does an acknowledgement number identify? | 2 | CO5 | Un |
| viii) | List the different models of SDN. | 2 | CO6 | Un |
| Q.2 | Solve any four questions out of six. | 16 | - | - |
| i) | What are the functions of physical, data link, network and transport layers in the OSI model? | 4 | CO1 | Un |
| ii) | List the categories of UTP cables. How noise interference is minimized in twisted pair cables. | 4 | CO2 | Un |
| iii) | Define Piggybacking and its benefits. | 4 | CO3 | Un |
| iv) | In IPV4 datagram which fields are related to fragmentation, Explain it with an example. | 4 | CO4 | Un |
| v) | Is the use of checksum for error control optional or mandatory in a. UDP b. TCP | 4 | CO5 | Un |
| vi) | Compare HTTP and SMTP. Give examples of each. | 4 | CO6 | Un |

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|------------|---|----|-----|----|
| Q.3 | Solve any two questions out of three. | 16 | | |
| i) | What are the types of addresses used in each of the following layers? a. Application Layer b. Network layer c. Data Link Layer Demonstrate with examples. | 8 | CO1 | Ap |
| ii) | What is CIDR? How can CIDR be used to effectively manage the IP address space? Given the CIDR representation 120.15.40.45 / 24. Find the range of IP Addresses in the CIDR block. | 8 | CO4 | Ap |
| iii) | Explain TCP connection establishment and release or Explain TCP 3-way handshaking. | 8 | CO5 | Un |
| Q.4 | Solve any two questions out of three. | 16 | | |
| i) | Write a short note on "FTTX". | 8 | CO2 | Un |
| ii) | A bit stream 1011010010 is transmitted using the standard CRC method. The generator polynomial is x^4+x+1 . What is the actual bit string transmitted? | 8 | CO3 | Ap |
| iii) | Short note on DHCP. | 8 | CO6 | Un |
