**III B. Tech II Semester Regular/Supplementary Examinations, JUN - 2022**
**COMPUTER NETWORKS**
**(Common to CSE & IT)**

**Time: 3 Hours**                                                                 **Max. Marks: 60**

**Note:** Answer **ONE** question from each unit **(5 × 12 = 60 Marks)**

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| | | UNIT-I | |
|---|---|---|---|
| 1. | a) | Define computer network? Classify computer networks and Explain them in brief. | [6M] |
| | b) | Define Topology and Write about various network topologies? | [6M] |
| | | (OR) | |
| 2. | a) | Differentiate between OSI and TCP/IP reference models? | [6M] |
| | b) | Write about the multiplexing and de-multiplexing process in frequency division multiplexing? | [6M] |
| | | UNIT-II | |
| 3. | a) | Explain about sliding window protocols and illustrate the error control in noisy channels? | [6M] |
| | b) | Reframe the generation of codeword at the sender site and check the same at the receiver site using CRC where data word is 1010011010 and the deviser is 10111. | [6M] |
| | | (OR) | |
| 4. | a) | Describe the working principle of Carrier sense multiple access with collision Detection (CSMA/CD). | [6M] |
| | b) | Determine the various types of frames in HDLC protocol? Explain with frame format. | [6M] |
| | | UNIT-III | |
| 5. | a) | Discuss the following: i) Broadcast Routing ii) Multicast Routing. | [6M] |
| | b) | Explain various design issues of Network layer and subnetting of network layer? | [6M] |
| | | (OR) | |
| 6. | a) | Explain the optimality principle with respect to shortest path algorithm. | [6M] |
| | b) | Identity the range of IPv6 addresses spanned by Class A, Class B and Class C. | [6M] |
| | | UNIT-IV | |

| 7. | a) | Illustrate the services provided by Network layer to Transport layer. | [6M] |
|----|----|----|----|
| | b) | List the different flags in TCP segment? Explain each of them | [6M] |
| (OR) | | | |
| 8. | a) | Describe the process to achieve flow control in TCP using sliding window protocol? | [6M] |
| | b) | Discuss the transport layer service primitives. Describe the three-way hand shake technique. | [6M] |
| UNIT-V | | | |
| 9. | a) | Describe the operational model of HTTP protocol. Relate this with WWW and FTP. | [6M] |
| | b) | Differentiate static, dynamic and active documents used in World Wide Web. | [6M] |
| (OR) | | | |
| 10. | a) | Explain name - address and address - name resolution process (DNS) | [6M] |
| | b) | Describe the various parts of e-mail address and show the process of sending and receiving e-mails | [6M] |

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