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| **DIT UNIVERSITY DEHRADUN**   |  |  | | --- | --- | | **Diploma (CSE)** | **MID TERM EXAMINATION, EVEN SEM 2023-24 (SEM VI)** | | | | | | | | | | | | | |
| **Roll No.** |  |  |  |  |  |  |  |  |  |  |  |  |
| **Subject Name:** **Advanced Computer Networks** | | | | | | | | | | | | |

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| **Time: 2 Hours** | **Total Marks: 50** |
| **Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the exam.**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**   |  |  |  | | --- | --- | --- | | **Q.1)** | **Attempt all Parts :** | | |  | (a) | Define a computer network and explain its primary purpose. | |  | (b) | What are protocols and standards in the context of computer networks? Provide examples of commonly used network protocols. | |  | (c) | List and briefly explain the different classifications of computer networks. | |  | (d) | Define network architecture and discuss its significance in designing computer networks. | |  |  | **[4 x 2.5= 10]** | |  | | | | **Q.2)** | **Attempt all Parts :** | | |  | (a) | Define multiplexing and explain its significance in telecommunications. | |  | (b) | Briefly describe the token ring and discuss its advantages. | |  | (c) | Explain the concept of switching in networking. | |  | (d) | What is the purpose of a reference model in the context of computer networks? | |  |  | **[4 x 2.5= 10]** | |  | | | | **Q.3)** | **Attempt any Two Parts :** | | |  | (a) | Discuss the significance of computer networks in today's digital age. Provide examples of how computer networks have transformed various aspects of communication and information sharing. | |  | (b) | Explain the concept of network architecture. Compare and contrast the client-server and peer-to-peer network architectures, highlighting their advantages and limitations. | |  | (c) | Describe the OSI reference model. Discuss its seven layers and explain the functions performed by each layer in the context of network communication. | |  |  | **[2 x 5= 10]** | |  | | | | **Q.4)** | **Attempt any Two Parts :** | | |  | (a) | Discuss the importance of Internet standards in ensuring interoperability and compatibility among different networking devices and systems. | |  | (b) | Explain the role of Internet administration in managing domain names, IP addresses, and other Internet resources. Discuss the organizations involved in Internet governance and their respective responsibilities. | |  | (c) | Discuss the working principles of Frequency Division Multiplexing (FDM). Provide an example of how FDM can be used to transmit multiple signals over a shared medium. | |  |  | **[2 x 5= 10]** | |  | | | | **Q.5)** | **Attempt any Two Parts :** | | |  | (a) | Explain the operation of Time Division Multiplexing (TDM). Discuss its applications in telecommunications and compare it with Frequency Division Multiplexing (FDM). | |  | (b) | Explain the Ethernet protocol in detail. Discuss its evolution, key features, and its role in modern LANs. | |  | (c) | Compare and contrast circuit switching and packet switching. Discuss the advantages and disadvantages of each switching technique in the context of modern communication networks. | |  |  | **[2 x 5= 10]** | | **-----END OF PAPER ----** | | | | |