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(b) Explain the key characteristics and use cases of TCP sockets. How are TCP sockets created, and what is their role in network communication ? (CO6)

(c) What are elementary UDP sockets, and how do they differ from TCP sockets ? Explain the limitations of UDP sockets, particularly in terms of flow control.

(CO6)

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B. TECH. (CSE) (SEVENTH SEMESTER) END SEMESTER EXAMINATION, Dec., 2023

COMPUTER NETWORKS—II

Time : Three Hours

Maximum Marks : 100

- Note :** (i) All questions are compulsory.
(ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.
(iii) Total marks in each main question are **twenty**.
(iv) Each sub-question carries 10 marks.
1. (a) What is routing algorithms ? Write the various differences between Distance Vector and Link State Routing. (CO1)
(b) What is RIP message ? How many types of messages are in RIP ? Describe the RIP message format. (CO1)

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- (c) What is multicasting routing ? Differentiate between the Broadcast and Multicast Routing. (CO1)
2. (a) Explain the various services of link layer in computer network. Discuss the issues of link layer. (CO2)
- (b) Describe the working of the CSMA/CD medium access mechanism with the help of a diagram. (CO2)
- (c) Explain the working of parity, checksum and CRC error checking schemes with example. (CO2)
3. (a) Can you explain the Real-Time Streaming Protocol (RTSP) and its role in multimedia networking ? How does it enable control over streaming media ? (CO3)
- (b) How does Streaming Stored Audio and Video work in the context of multimedia networking, and what are the key challenges associated with it ? (CO3)

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- (c) What is the Real-Time Protocol (RTP) and its companion Real-Time Control Protocol (RTCP), and how do they enhance the performance of real-time multimedia streaming ? (CO3)
4. (a) What is generalized forwarding in the context of Software-Defined Networking (SDN), and how does it differ from traditional network forwarding mechanisms ? (CO4, CO5)
- (b) What are the key responsibilities and functions of an SDN controller in a Software-Defined Network, and how does it interact with network devices to enforce policies and configurations ? (CO4, CO5)
- (c) Explain the OpenFlow protocol in detail, including its message structure. (CO4, CO5)
5. (a) What are sockets and address structures in the context of network programming, and how do they facilitate communication between processes over a network ? (CO6)

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