21CSC1C3L

M.Sc. I Semester Degree Examination, April/May - 2024
COMPUTER SCIENCE
Computer Networks
(NEP)

Time : 3 Hours   Maximum Marks : 70

Note : Answer **any five** of the following questions with question No. **1 compulsory**.

1. (a) Explain the factors to measure network layer performance.   **7**

   (b) Explain forwarding IP packets based on destination.   **7**

2. (a) What is link state routing ? Prepare the link state packet at every router. **7**
   For the below graph.

   (b) Explain about options field in IPv4 header format.   **7**

3. (a) Discuss the role of the BGF protocol in interconnecting different types of **7**
   networks and facilitating communication between them.

   (b) What are the distinct types of packets utilized in OSPF, and what roles do   **7**
   they serve within the protocol's operation ?

4. (a) What are the characteristics and functionalities of IPv6 ?   **7**

   (b) Describe the methods and approaches employed to transition from IPv4 to   **7**
   IPv6.

5. (a) Illustrate the format of the UDP header with a clear diagram and explanation. **7**

   (b) Detail the mechanism utilized by TCP to manage the rate of data transmission **7**
   and reception in a network communication session.

6. (a) Distinguish between distance vector and link state routing protocols, highlighting their respective characteristics and operational differences. **7**

(b) Describe the two strategies used in multicasting. **7**

7. (a) Write a short note on MOSPF (Multicast Open Short Path First). **7**

(b) Describe TCP's approach to managing errors during data transmission. **7**

8. Write a short note on the following : **5+5+4**

(a) Classful Addressing

(b) Distance Vector Routing

(c) IPv6 packet header format

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