12223

3 Hours / 70 Marks   Seat No.

Instructions :   (1)   All Questions are *compulsory.*

(2)   Answer each next main Question on a new page.

(3)   Illustrate your answers with neat sketches wherever necessary.

(4)   Figures to the right indicate full marks.

(5)   Assume suitable data, if necessary.

Marks

1.   **Attempt any FIVE of the following :**   **10**

(a)   Draw and label sketch of ICMPV4 packet format.

(b)   State the importance of IPV6 over IPV4.

(c)   Distinguish between SMTP and POP3 protocol (Any two points).

(d)   What is UDP ? Which services are provided by UDP (Any two) ?

(e)   State importance of Routing table.

(f)   State the use of Telnet.

(g)   State the concept of fragmentation in IPV4.

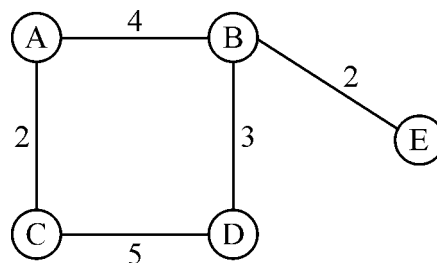2.   **Attempt any THREE of the following :**   **12**

(a)   Describe flow control under SCTP.

(b)   What is Mobile IP ? List and explain components of Mobile IP.

(c)   Describe DHCP with its operation and static and dynamic allocation.

(d)   Give use of OSPF with its reason.

3. **Attempt any THREE of the following :** 12

   (a) State significance of following related to IPV6.

   - Auto configuration

   - Renumbering

   (b) Draw and explain TCP segment structure.

   (c) With the help of diagram, explain architecture of WWW.

   (d) Use Bellman-Fort algorithm to find the shortest distance for all nodes in the graph.

4. **Attempt any THREE of the following :** 12

   (a) Construct a diagram to show the application of Cookies in a scenario in which the server uses Cookies for Advertisement.

   (b) List Intradomain multicast protocol. Explain any one in detail.

   (c) Describe the HTTP Response Message Format.

   (d) List different timers used in TCP.

   (e) Explain the working of SSH.

5. **Attempt any TWO of the following :** 12

   (a) Describe the BGP3 in detail.

   (b) State the need for

   (1) Sequence Control

   (2) Error Control

   (3) Flow Control in networking.

   (c) Explain the process of transition from IPV4 to IPV6 for a network.

6. **Attempt any TWO of the following :** **12**

    (a)   With a suitable example, explain Link State Routing algorithm. What are the serious drawbacks of Link State Routing Algorithm ?

    (b)   For the IP addresses given below

        (1)   Identify the classes to which the following IP Address belongs to

        (2)   Identify network address section.

        (3)   Indentify Host Address Section.

        (4)   Calculate number of hosts that can be assigned with each network

            (i)   22.34.45.133

            (ii)   12.12.12.12

            (iii)   192.0.233.26

            (iv)   126.123.16.87

    (c)   Describe e-mail security over non-secure channel.

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