

(Time: 2 $\frac{1}{2}$ hours)

[Marks: 75]

Please check whether you have got the right question paper.

- N. B.: (1) **All** questions are **compulsory**.
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
 (3) Answers to the **same question** must be **written together**.
 (4) Numbers to the **right** indicate **marks**.
 (5) Draw **neat labeled diagrams** wherever **necessary**.
 (6) Use of **Non-programmable** calculator is **allowed**.

- 1. Attempt any two of the following: 10**
- What is fragmentation? Which fields changes over datagram during fragmentation in routing? Explain.
 - Explain Dual stack and tunneling in IPV6.
 - Explain the options in IPv4.
 - Compare IPV4 with IPV6.
- 2. Attempt any two of the following: 10**
- What are the types of ICMP error messages? Explain.
 - Mobile IP communication can be inefficient. Why? What is its solution? Explain.
 - What is Address Resolution Protocol? What is its use? Explain the ARP request and reply messages.
 - What are the different RIP times? Explain the purpose of RIP timers.
- 3. Attempt any two of the following: 10**
- What are the services of TCP? Explain.
 - What is the concept of 3-way handshaking in TCP Connection establishment? Explain.
 - Compare TCP with UDP.
 - Explain the components of UDP package.
- 4. Attempt any two of the following: 10**
- Write a short note on DNS.
 - Explain SCTP association establishment and Termination.
 - Describe the DHCP client server operations in the different network.
 - What are the types of SCTP chunks? Explain the meaning of each.
- 5. Attempt any two of the following: 10**
- Explain the term NVT along with its character set.
 - Explain the architecture of WWW.
 - List and explain the types of FTP commands.
 - Describe the HTTP messages.

[TURN OVER]

6. Attempt any two of the following:

10

- a. Explain video compression in MPEG
- b. Write a short note on MIME.
- c. What are the flow characteristics of QOS? Explain.
- d. Explain the following protocols: POP, IMAP

7. Attempt any three of the following:

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- a. Describe an IPV4 datagram header format.
- b. What are the types of OSPF Links? Explain.
- c. Explain the purpose of each TCP timer.
- d. Explain the header format of SCTP.
- e. What are the types of modes in TELNET? Explain.
- f. Describe the leaky bucket technique of traffic shaping.