

Instructions to candidates

- 1) Q.No. 1 is compulsory.
- 2) Solve any 3 questions from the remaining 5 questions.
- 3) Figures on the right side indicate full marks.
- 4) Make suitable assumptions where required.

- Q.No 1** Answer any four. 05
- a) Explain the various categories of networks. 05
 - b) Give any four functions of Data Link Layer. 05
 - c) What are GEO, MEO and LEO satellites? 05
 - d) How does Token Ring work? 05
 - e) Explain the concept of Pseudoheader used in UDP. 05
- Q.No 2** 10
- a) Explain the various physical media with the help of neat diagrams. 10
 - b) Compare Circuit Switching, Packet Switching and Message Switching. 10
- Q.No 3** 10
- a) What is Traffic shaping? Explain "Leaky bucket" technique of traffic shaping. 10
 - b) Explain the different Options used in IP Datagram. 10
- Q.No.4** 10
- a) Five equal-size datagrams belonging to the same message leave for the destination one after another. However, they travel through different paths as shown in Table
- | Datagram | Path Length | Visited Switches |
|----------|-------------|------------------|
| 1 | 3200Km | 1,3,5 |
| 2 | 11,700 Km | 1,2,5 |
| 3 | 12,200 Km | 1,2,3,5 |
| 4 | 10,200 Km | 1,4,5 |
| 5 | 10,700 Km | 1,4,3,5 |
- We assume that the delay for each switch (including waiting and processing) is 3, 10, 20, 7, and 20 ms respectively. Assuming that the propagation speed is 2×10^8 m/s, find the order the datagrams arrive at the destination and the delay for each. Ignore any other delays in transmission. 10
- Q.No.5** 10
- a) Draw the TCP segment header format and explain each field in brief. 10
 - b) Explain the recursive resolution and iterative resolution methods of resolving the Domain names. 10
- Q.No.6** 05
- Write short notes on any 4 .
- a) CSMA/CA. 05
 - b) PPP frame format. 05
 - c) Three Way Handshakes. 05
 - d) World Wide Web. 05
 - e) IPv6. 05