Hall Ticket Number:

Part-A (10 × 2 = 20 Marks)

1. Define and list Network Topologies.
2. Define TCP/IP.
3. Briefly explain Stop and Wait flow control.
4. Briefly explain concept of CRC with an example.
5. What is flooding?
6. What is checksum?
7. List services of the transport layer.
8. What are different types of Multiplexing?
9. What is HTTPS?
10. Define Domain Name Service (DNS).

Part-B (5 X 10=50 Marks)
(All bits carry equal marks)

11. a) What are the principles applied to arrive at the 7 layers of the OSI?

    b) Explain the operation of Token ring method.

12. a) Explain the need of framing in details in data link layer.

    b) The following data fragment occurs in the middle of data stream for which the character stuffing algorithm is used "DLE STX,A, DLE C, DLE, ETX". What is transmitted?

13. a) Explain transparent and non-transparent fragmentation and their usage.

    b) Briefly compare the network layer of Internet and ATM.

14. a) Explain the use of hop-to-hop choke packets and load shedding for congestion control.

    b) A computer on a 6 Mbps network is regulated by a token bucket. The token bucket is filled at a rate of 1 Mbps. It is initially filled to capacity with 8 megabits. How long can the computer transmit at the full 6 Mbps?

15. a) Explain SMTP protocol?

    b) State and explain typical mail handling commands.

16. a) What are the reasons for using layered protocols?

    b) Explain concept of go back N ARQ protocol?

17. Write short notes on any **two** of the following:
    a) Internetworking
    b) User Datagram Protocol (UDP)
    c) World Wide Web

******