

- (A) Full Duplex
(C) Simplex
- (B) Half Duplex
(D) None of the above

i. DTE stands for

- (A) Data Terminal Equipment
(C) Digital Terminal Equipment
- (B) Data Transmission Equipment
(D) Digital Transmission Equipment

j. The optimum frequency range for satellite transmission is

- (A) 2 GHz – 40 GHz
(C) 30 MHz – 1 GHz
- (B) 1 GHz – 10 GHz
(D) 10 GHz – 100 GHz

**Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.**

- Q.2** a. What is OSI Reference model? Briefly discuss the various layers in the model. (8)
- b. Briefly describe the key elements of a communication model along with a neat diagram. (8)
- Q.3** a. With any communication system, the received signal will differ from the transmitted signal due to various transmission impairments. Discuss these impairments in detail. (6)
- b. Discuss the working principle of optical fiber. With the help of a neat sketch. Also discuss its characteristics, which distinguish it from twisted pair and co-axial cable. (10)
- Q.4** a. Briefly discuss the HDLC frame structure along with a neat diagram. (8)
- b. What is a bridge? Briefly discuss the various functions performed by a bridge. (8)
- Q.5** a. What are the important requirements specific to the wireless LAN environments? (8)
- b. Define multiplexing. Also explain FDM along with its characteristics. (8)
- Q.6** a. What are the advantages of packet switching over circuit switching? (8)
- b. Define the following:
- (i) Thermal Noise. (ii) Impulse Noise. (4)
- c. Briefly explain fixed routing along with its advantages and disadvantages. (4)
- Q.7** a. What do you mean by IPv6? What enhancements have been included in IPv6 over IPv4? (8)
- b. Briefly explain SMTP and MIME. What are the limitations in SMTP, which have been addressed in MIME? (8)
- Q.8** a. Define the following terms:

- (i) Proxy
- (iii) Crosstalk

- (ii) Gateway
- (iv) HTTP

(8)

b. Briefly explain the various principles that guided the designing of the OSI layers. (8)

Q.9 a. Briefly explain ATM. Also compare ATM or Cell relay with frame relay. (8)

b. Define ISDN and what are the principles of ISDN as defined by ITU-T. (8)