

## Paper-V

### Data Communication and Network

Time: Three Hours]

[Maximum Marks : 100

**Note :-** Attempt any **FIVE** questions.

1. (a) What is data and information ? Explain various tasks performed by a data communication system. 10  
(b) What is a signal ? Explain various types of signal for data transmission. 6  
(c) What is meant by bandwidth and spectrum ? 4
2. (a) What is multiplexing ? Explain various types of multiplexing. 14  
(b) Write a note on Fourier Analysis. 6
3. (a) What do you mean by a Modem ? Why is it a necessary tool in data communication ? Explain working of a modem. 10  
(b) What do you mean by modulation ? Explain various Analog modulation techniques. 10
4. What is a Computer network ? Explain goals of a network design. Why computer network is important as compared to a distributed system ? 20
5. Explain the characteristics and applications of various types of transmission media used for data communication. 20
6. (a) Write a complete note on Asynchronous Transfer Mode. 14  
(b) Differentiate among the following.

- (i) Circuit switching
  - (ii) Packet switching
  - (iii) Message switching 6
7. (a) Explain Integrated services digital network with its advantages. Also define the relationship between ISDN and Internet. 14
- (b) Write a short note on VSAT. 6
8. (a) Explain various IEEE standards data Interface. 14
- (b) Write a note on fibre distributed data Interface. 6
9. (a) What is point to point protocol ? Explain its features and functions in detail with its frame format. 14
- (b) Write a short note on X.25. 6
10. Critically analyse OSI reference model. 20

