



- (b) (i) Explain with block diagram of a FM transmitter using direct modulation. (12)
- (ii) Discuss about spectral characteristics of FM signal. (4)
12. (a) With relevant diagram explain the method of synchronous detection of FSK signal. What should be the relationship between bit rate and frequency shift for a better performance. (16)

Or

- (b) With neat diagram explain the working of a DPSK transmitter. What are the advantages of DPSK over PSK. (16)
13. (a) (i) With block diagram explain the PCM transmitter and receiver. (12)
- (ii) What is intersymbol interference? How can it be reduced? (4)

Or

- (b) (i) Describe delta modulation system. What are its limitations? How can they be overcome? (12)
- (ii) Give brief notes on eye pattern. (4)
14. (a) (i) Explain any two data communication codes presently used for character encoding. (12)
- (ii) Give brief notes on error detection. (4)

Or

- (b) With neat block diagram explain the data communication hardware. (16)
15. (a) Explain in detail the DS spread spectrum with BPSK. (16)

Or

- (b) Give brief notes on
- (i) Use of spread spectrum with CDMA (8)
- (ii) Pseudo random sequence generator. (8)