B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2011.

Third Semester

Computer Science and Engineering

CS 2204 — ANALOG AND DIGITAL COMMUNICATION

(Regulation 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Amplitude modulation.
2. What is modulation index and percentage modulation in AM?
3. What is Shannon limit for information capacity?
4. What is binary phase shift keying?
5. What is the need for sampling?
6. Define inter symbol interference (ISI).
7. List any two data communication standard organization.
8. What is a data modem?
9. List the spread spectrum techniques.
10. What is CDMA?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the principles of amplitude modulation. (8)

(ii) Write a note on frequency spectrum analysis of angle modulated waves. (8)

Or

(b) (i) Explain the band width requirements of angle modulated waves. (8)

(ii) Compare FM and PM. (8)

12. (a) (i) Discuss the principle of operation of FSK transmitter. (8)

(ii) Write a note on QPSK. (8)

Or

(b) (i) Discuss the principle of operation of FSK receiver. (8)

(ii) Write a note on DPSK. (8)

13. (a) (i) Describe the basic principles of PCM system. (8)

(ii) What is companding? Explain in detail. (8)

Or

(b) (i) Describe in detail the adaptive delta modulation system. (8)

(ii) What is signal to quantitation noise? Explain. (8)

14. (a) (i) Write a note on data communication codes. (8)

(ii) Explain serial and parallel interfaces in detail. (8)

Or

(b) (i) Explain in detail about error detection and correction. (8)

(ii) Write a note on medium and high speed modem. (8)

15. (a) (i) Explain the principle of DS spread spectrum technique. (8)

(ii) Explain the salient features of wireless communication. (8)

Or

(b) (i) Describe the frequency hopping spread spectrum technique in detail. (8)

(ii) Explain the basic principle of TDMA. (8)