Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 21300

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Third Semester

Computer Science and Engineering

CS 2204/CS 36/EC 1207/10144 CS 305/080230008 — ANALOG AND DIGITAL COMMUNICATION

(Regulation 2008/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is demodulation?

2. Draw the spectrum of FM signal.

3. State Shannon's channel capacity theorem. Give an example.

4. Draw the constellation diagram of QPSK signal.

5. Find the minimum sampling frequency for a signal having frequency from 10 MHz to 10.2 MHz, in order to avoid aliasing.

6. What are the types of pulse modulation systems?

7. List the methods for error correction.

8. What is pulse stuffing?

9. What is a chip code in CDMA system?

10. Distinguish between FDMA and TDMA.

PART B — (5 × 16 = 80 marks)

11. (a) (i)   What is the need for modulation?   (4)

        (ii) Explain with necessary diagram any one method for generation of AM waves.   (12)

Or

(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)

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