Reg. No. ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 91342

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Third Semester

Computer Science and Engineering

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

(Regulation 2008/2010)

(Common to 10144 CS 305 — Analog and Digital Communication for
B.E. (Part–Time) Second Semester – CSE – Regulation 2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Differentiate between phase and frequency modulation.

2. A transmitter radiates 9 kW without modulation and 10.125 kW after modulation. Determine depth of modulation.

3. What do you mean by DPSK?

4. Determine the baud rate and minimum bandwidth necessary to pass a 10 kbps binary signal using amplitude shift keying.

5. Define eye pattern.

6. What is the relationship between the pulse rare and bit rate?

7. Differentiate synchronous and asynchronous modems

8. What are the commonly used data communication codes?

9. Define spread spectrum technique

10. What is processing gain for FH Spread Spectrum?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the principle of working FM system modulation and demodulation.

Or

(b) Explain the detection of AM signals using envelope detector.

12. (a) With block diagram explain M-ary PSK receiver. Compare M-ary modulation schemes. (16)

Or

(b) Describe the concepts of FSK transmitter and receiver. Also find the minimum bandwidth for an FSK signal transmitting at 2000bps. Assume that transmission is in half-duplex mode, and the carriers are separated by 3000Hz. (13 +3)

13. (a) Explain the concepts in delta modulation transmitter and receiver. (16)

Or

(b) (i) Explain the concepts of PCM and calculate the sampling rate for PCM if the frequency ranges from 1000 to 4000Hz. (10)

(ii) Write a short note on bandwidth requirements of PCM. (6)

14. (a) Explain the serial and parallel interfaces in data communication. (16)

Or

(b) The code 11110101101 was received. Using the Hamming encoding algorithm, find out what is the original code sent. (16)

15. (a) Compare FDM, TDMA and CDMA in wireless communication systems. (16)

Or

(b) Explain in detail the characteristics of PN sequence.

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