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Question Paper Code : 51340

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Third Semester

Computer Science and Engineering

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

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define angle modulation.
2. What is modulation index and percent modulation?
3. Define Shannon limit for information capacity.
4. How are bit rate and baud rate related?
5. What is slope overload error?
6. Define sampling rate.
7. What is the function of a modem?
8. What are the advantages and disadvantages of error detection?
9. What is pseudo-noise?
10. What is meant by spread spectrum?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Derive equations for AM voltage and power distribution. (8)
- (ii) Explain the frequency analysis of angle modulated waves. (8)

Or

- (b) (i) Write a note on frequency deviation of FM wave. (8)
- (ii) Describe the generation of FM. (8)

12. (a) (i) Write a note on Bandwidth consideration in FSK. (6)
(ii) Explain the principle of operation of QPSK. (10)

Or

- (b) (i) Explain about binary phase shift keying. (8)
(ii) Describe the principle of operation of FSK transmitter. (8)
13. (a) (i) What is inter symbol interference? Explain. (6)
(ii) Explain about Pulse Code Modulation (PCM) in detail. (10)

Or

- (b) (i) Explain the principle of operation of adaptive delta modulation. (10)
(ii) Write a note on signal to quantization noise rate. (6)
14. (a) (i) Explain 2-dimensional parity scheme of error detection. What are its error detection capabilities?
(ii) Devise a single-bit error correction code for 8-bit data and illustrate with an example.

Or

- (b) Discuss the principles of different types of modems.
15. (a) (i) Describe the DS spread spectrum technique. (8)
(ii) Write a note on multiple access techniques. (8)

Or

- (b) (i) Explain the frequency hopping (FH) Spread spectrum technique. (8)
(ii) Explain the use of TDMA in wireless communication systems. (8)
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