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Question Paper Code: 31836

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2016

Third Semester

Information Technology

01UIT306 - ANALOG AND DIGITAL COMMUNICATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Define amplitude modulation?
2. Draw the frequency spectrum and mention the bandwidth of AM signal.
3. Write the relationship between the minimum bandwidth required for an FSK system and the bit rate.
4. What are the advantages of PSK as compared to FSK?
5. What is meant by fading?
6. What does the term catastrophic cyclic code represent?
7. What is meant by PCM?
8. What are the disadvantages of digital transmission?
9. State the balance property of random binary sequence.
10. List the various multiple access techniques.

PART - B (5 x 16 = 80 Marks)

11. (a) Derive the expression for AM & its Power and Efficiency calculation. (16)

Or

- (b) Explain the method of generating FM signal using direct and indirect method. (16)
12. (a) Compare the various types of digital modulation techniques. Explain the principle of FSK transmitter and receiver. (16)

Or

- (b) What is carrier recovery? Discuss how carrier recovery is achieved by the squaring loop and costas loop circuits. (16)
13. (a) (i) Describe about analog and digital channel model. (10)
(ii) Discuss on Gilbert model of bursty channel. (6)

Or

- (b) What are the common problems associated with the channels? Explain about satellite channels and telephone channels. (16)
14. (a) (i) Describe in detail about the adaptive delta modulation system. (8)
(ii) What is signal to quantization noise? Explain. (8)

Or

- (b) (i) Discuss about DPCM with necessary diagrams. (8)
(ii) Define inter symbol interference. Illustrate the effects on eye patterns. (8)
15. (a) Explain DS-SS system with coherent BPSK. (16)

Or

- (b) (i) Explain the basic principle of TDMA. (4)
(ii) Mention the significance of spread spectrum modulation and describe the frequency hopping spread spectrum technique in detail. (12)
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