Reg. No. : | | | | | | | | | | |

Question Paper Code: 31086

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2015.

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. The antenna current of an AM transmitter is 8 *A* when only carrier is sent. It increases to 8.93 *A* when the carrier is modulated by a single sine wave. Find the percentage modulation.
3. Write the relationship between the minimum bandwidth required for an FSK system and the bit rate.
4. Compare binary PSK with QPSK.
5. What is meant by fading?
6. Describe about troposcatter channel.
7. State sampling theorem.
8. What are the disadvantages of digital transmission?
9. Define pseudo noise sequence.
10. List the various multiple access techniques.

PART - B (5 x 16 = 80 Marks)

11. (a) What is the principle of amplitude modulation? Derive expression for the AM wave and draw its spectrum. (16)

Or

(b) Describe the frequency analysis of angle modulated waves. Explain their bandwidth requirements. (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) Illustrate the following:

(i) Switched telephone channels (8)

(ii) Light wave system models (8)

14. (a) What is pulse modulation? Discuss about various pulse modulation schemes. (16)

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) Illustrate source coding of speech for wireless communications. (16)

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