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

Question Paper Code: 35423

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fifth Semester

Electrical and Electronics Engineering

01UEC523 – COMMUNICATION ENGINEERING

(Common to EIE and ICE)

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What are the various types of AM?
2. Define Carson's rule.
3. How to prevent aliasing effect?
4. State the principle concept of DPCM.
5. Define entropy.
6. Calculate the Hamming distance between the following code words C_1= {1000111} and C_2= {0001011}.
7. Give the advantages of CDMA.
8. Define spread spectrum.
9. State the advantages of fiber optic system.
10. Tell about apogee and perigee.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Draw the block diagram for the generation and demodulation of a VSB signal and explain the principle of operation. (12)

(ii) Distinguish between WBFM and NBFM. (4)

Or

(b) (i) Illustrate the generation of SSB-SC using phase shift method. (8)

(ii) Explain the working principle of Armstrong transmitter. (8)

12. (a) Illustrate with the neat sketch working principle of PCM system. (16)

Or

(b) Explain BFSK modulation scheme with transmitter and receiver block diagrams. (16)

13. (a) (i) Apply the Shannon-Fano algorithm to a source which generates symbols x_1, x_2, x_3, x_4 with the probabilities 1/8, 1/2, 1/4 and 1/8 respectively. Calculate the code efficiency. (8)

(ii) A discrete memory less source has five symbols x_1, x_2, x_3, x_4 and x_5 with probabilities 0.4, 0.2, 0.2, 0.1 and 0.1 respectively. Construct a Huffman code for the source and calculate code efficiency. (8)

Or

(b) A rate 1/3 convolution encoder has generating vectors as *G1* = (1 0 0), *G2* = (1 1 1), *G3* = (1 0 1).

(i) Sketch the encoder configuration.

(ii) Draw the code tree, state diagram and trellis diagram.

(iii) If input message sequence is 10110, determine the output sequence of the encoder. (16)

14. (a) Discuss in detail about CDMA technique and mention its advantages and disadvantages. (16)

Or

(b) Narrate the concept of slow frequency hopping and sast frequency hopping with a neat sketch. (16)

15. (a) (i) Explain about the placement of a satellite in a geostationary orbit. (8)

(ii) Write short notes on Intelsat. (8)

Or

(b) Brief the concepts of SCADA. (16)

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