M.E. First Semester (Digital Electronics) (Part Time / Full Time) (C.G.S. - New)
13206 : Digital Communication Techniques : 1 UMEF 4

P. Pages : 2
Time : Three Hours

AU - 3320
Max. Marks : 80

Notes : 1. Answer **Three** question from Section A and **Three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.

SECTION – A

1. a) Discuss the power spectra of CPFSK and CPM signals in details.   7

   b) Differentiate between correlation type and matched filter demodulator and list important properties of matched filter.   6

OR

2. a) What is memoryless modulation? Using signal space diagram, explain digital PAM signal.   7

   b) Determine the impulse response of matched filter.   6

3. a) Explain the Lempel Ziv algorithm with suitable example?   7

   b) Explain rate distortion function for a memoryless Gaussian source.   6

OR

4. a) Compose scalar quantization and vector quantization in source encoding?   7

   b) Explain different types of coding techniques for Analog sources.   6

5. a) Explain Reed-Muller codes with examples for channel coding?   7

   b) Explain BCH code with an example?   7

OR

6. a) Explain temporal waveform coding for PCM and DPCM with block diagram.   7

   b) How the performance of TCM can be improved? Describe the scheme for code concatenation using encoder and decoder.   7

SECTION – B

7. a) Explain partial response Signalling.   7

   b) Explain the Nyquist Criterion for band limited signals with zero ISI?   7

OR

8. a) Discuss the probability of error detection of PAM with zero ISI? 7

    b) With the help of example explain modified duobinary system for controlling ISI. 7

9. a) Discuss LMS algorithm in detail. 6

    b) Discuss in detail the mean square error criterion performance. 7

OR

10. a) Explain peak distortion criterion for inter symbol Interference? 6

    b) Explain in detail zero forcing algorithm. 7

11. a) Explain Acquisition and Tracking phase in synchronization of spread spectrum system. 6

    b) Explain with block diagram time hopping spread spectrum system? 7

OR

12. a) Explain the anti jamming application with the help of DSSS. 7

    b) Draw and explain the block diagram of model of spread spectrum digital communication system. 6

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