M.E. First Semester (Electronics & Tele.) (Full Time) (C.G.S. - New)

13333 : Digital Communication Techniques : 1 ENTC 3

P. Pages : 2 | AU - 3459

Time : Three Hours | Max. Marks : 80

* 0 3 7 6 *

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) Explain match filter demodulator for AWGN channel. **7**

b) Discuss the power spectra of CPFSK and CPM signals in detail. **7**

OR

2. Derive expression for probability of error for m-ary PSK. **14**

3. a) Explain block schematic of a delta modulation system. **6**

b) Explain variable length coding for discrete memoryless source. **7**

OR

4. a) Explain differential Pulse-Code modulation for analog sources. **7**

b) Explain Lempel Ziv Algorithm with example. **6**

5. a) Explain BCH code in detail. **7**

b) Discuss Trellis code in detail. **6**

OR

6. a) Explain Reed Solomon codes with example. **6**

b) Explain temporal waveform coding for PCM and DPCM with block diagram. **7**

SECTION – B

7. a) Explain the Nyquist criterion for band limited signals with zero ISI. **7**

b) Explain time and frequency domain characteristics of a modified Duo-Binary signal. **7**

OR

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

b) Explain effect of inter symbol interference on eye-opening. **7**

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9.	a)	Explain adaptive linear equalizers.	**6**
	b)	Explain in detail zero forcing algorithm.	**7**

OR

10.	a)	Discuss in detail the mean square error (MSE) criterion performance.	**7**
	b)	Discuss LMS algorithm in detail.	**6**
11.	a)	A Pseudo-Noise sequence is generated using a feedback shift register of length m = 4. The chip rate is 10^7 chips per second. Find the following. i) PN sequence length. ii) Chip duration of PN sequence. iii) PN sequence period.	**7**
	b)	Explain direct sequence spread spectrum technique.	**6**

OR

12.	a)	Explain necessity of spread spectrum modulation.	**7**
	b)	Explain the anti jamming application with the help of DSSS.	**6**

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