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Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year II Semester Supplementary Examinations Dec- 2019
DIGITAL COMMUNICATIONS
(Electronics and Communication Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

1 a Explain about Discuss Signal to Quantization in non-uniform and differential quantization.   8M
   b Write the differences between PCM, DPCM, and DM.   4M

OR

2 a What is Threshold effect in PCM? Explain.   7M
   b Explain the following line codes for 110101101   5M
      i) Unipolar RZ & NRZ ii) polar RZ & NRZ iii) Bipolar RZ &NRZ.

UNIT-II

3 a Explain the matched filter.   6M
   b Derive the properties of matched filter.   6M

OR

4 a Describe the baseband M-array PAM Transmission system.   6M
   b Give a brief explanation on modified duo binary signaling scheme? 6M

UNIT-III

5 a Explain the Gram-Schmidt orthogonalization procedure?   6M
   b Write a brief note on signal constellation diagram.   6M

OR

6 a Describe the probability error in correlation receiver?   7M
   b Explain signal representation of a signal N=2and M=3.   5M

UNIT-IV

7 a Explain the generation and detection of BPSK   7M
   b Discuss in brief about Non-coherent detection of binary FSK.   5M

OR

8 a Compare all the digital modulation techniques.   6M
   b Derive the probability of error for a coherent QPSK system.   6M

UNIT-V

9 a The generator polynomial of a (15, 11) hamming code is defined by: $g(X) = 1+X+X_2$.   7M
      Develop an encoder and syndrome calculator for this code, using a systematic form of
      the code.
   b Write short notes on Hamming codes and burst error codes.   5M

OR

10 a What are the types of parity check codes explain with neat diagrams?   6M
    b Write the advantages and disadvantages of parity check codes. 5M

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