

END TERM EXAMINATION

FOURTH SEMESTER [B.TECH.] MAY-JUNE-2016

Paper Code: ETEC-208 (FOR CSE ONLY) Subject: Communication Systems

Time : 3 Hours

Maximum Marks :75

**Note: Attempt any five questions including Q.no.1 which is compulsory.
Select one question from each unit.**

- 5x5=25
- Q.No 1 a) Derive an expression for single-tone amplitude-modulated wave.
 b) What is Carson's Rule? Define modulation index for FM?
 c) State and prove sampling theorem in time domain.
 d). Differentiate DPSK and QPSK techniques?
 e) List the steps for determining all the codewords for a Linear Block Code.

Unit-I

- Q.No 2 With the help of block diagram explain communication system model. List the advantages and disadvantages of Digital Communication 12.5
- Q.No 3 What is Double sideband suppressed carrier system? Discuss two types of a product modulator. 12.5

Unit-II

- Q.No 4 Derive an expression for a single-tone narrowband frequency-modulated wave. List the difference between narrowband FM and wideband FM 12.5
- Q.No 5 What is meant by "Noise" in communication system? Explain the following terms 12.5
 i) Signal to Noise ratio
 ii) Noise Figure
 iii) Noise Temperature

Unit-III

- Q.No 6 What is PAM? With the help of sample and hold circuit explain the its working principle. List some drawbacks of PAM signal. 12.5
- Q.No 7 Compare Delta modulation(DM), Adaptive Delta Modulation(ADM) and PCM techniques. 12.5

Unit-IV

- Q.No 8 Draw the block diagram of QPSK system and explain its working. Write and draw the power spectral density of QPSK signals. 12.5
- Q.No 9 Define the following terms: 12.5
 i) Code word
 ii) Block length
 iii) Code rate
 iv) Channel-data rate
 v) Code vectors

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