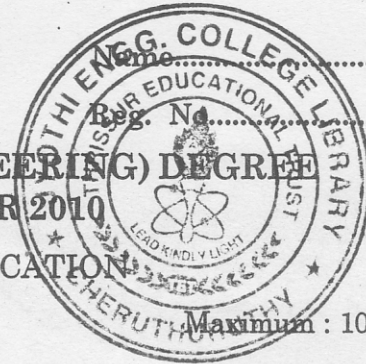


C 15226

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE  
EXAMINATION, DECEMBER 2010

EC 04 406—ANALOG COMMUNICATION



Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all the questions.*

- I. (a) Define modulation index of a AM system. Derive the expression for the power of an AM signal. Comment on the expression.  
(b) What are pre-emphasis and de-emphasis ? Draw a typical pre-emphasis circuit.  
(c) Explain briefly the operation of a PLL circuit.  
(d) What is the need for multiplexing ? Briefly explain a TDM system.  
(e) Define wide sense stationary process, ergodic process and Gaussian process.  
(f) What is a random process ? Explain the various types of random processes giving an example for each.  
(g) Explain threshold effect in FM.  
(h) State sampling theorem. Explain practical sampling.

(8 × 5 = 40 marks)

**Part B**

- II. (a) Explain the working of an AM transmitter.  
*Or*  
(b) Explain the (i) Generation of FM signal ; (ii) Explain any *one* method of FM signal detection.
- III. (a) Explain the working of a superheterodyne receiver.  
*Or*  
(b) Explain the working of a television monochrome transmitter.
- IV. (a) Explain the various types of :  
(i) noise.  
(ii) Write notes on noise equivalent bandwidth and base band signal transmission with noise.  
*Or*  
(b) Explain any *four* types of probability models.
- V. (a) Explain about exponential CW modulation with noise.  
*Or*  
(b) (i) Compare the various CW modulation systems.  
(ii) Explain the reconstruction of sampled signal.

(4 × 15 = 60 marks)