D 23438-A

Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2011

EE 04 501—ANALOG AND DIGITAL COMMUNICATION

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

1. (a) Explain the nyquist sampling theorem.
   (b) Define Convolution theorem also explain it.
   (c) Draw the AM transmitter block diagram.
   (d) Explain the modulation and modulation index.
   (e) What is meant by granular noise ? Explain.
   (f) Define ASK. Compare ASK and PSK.
   (g) Compare circuit switching and packes switching.
   (h) Draw the OSI model and explain briefly.

   (8 × 5 = 40 marks)

2. (a) Suppose that a signal X $(f) = 1$, if $1 \leq ½$ is passed through an LTI system with impulse X $(f) = 0$, if $1 > ½$ response $h(f) = e^{-f} u(f)$. Find energy of o/p.

   Or

   (b) Explain the response of LTI system with white Gaussian noise.

3. (a) With necessary block diagram, explain the principle of operation of FM transmitter.

   Or

   (b) (i) List out the features of FM over AM. (8 marks)
   (ii) How the signal to noise ratio for envelope detection is achieved. Explain with an example. (7 marks)

4. (a) Define digital pulse modulation scheme and explain DPCM method in detail.

   Or

   (b) Draw and explain with neat diagram the operation of PSK scheme.

5. (a) Distinguish between Analog and Digital modulation scheme also give features of digital modulation.

   Or

   (b) Explain the basic concepts of network protocol topologies in detail.

   (4 × 15 = 60 marks)