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Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, MARCH 2013

EC 04 604 – DIGITAL COMMUNICATION

(2004 Scheme)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer **all** *questions.*

I. (a) Briefly explain about a TDM system.

(b) Explain why quantization is necessary in PCM. Derive the expression for quantization error in a PCM system.

(c) Explain the working of a zero-crossing equalizer.

(d) Briefly explain Gram-Schmitt orthogonolization procedure.

(e) Write notes on Gaussian random process.

(f) Explain the need for synchronisation of carrier and symbol in a digital receiver.

(g) What are coherent and non-coherent receivers?

(h) Compare binary and M-ary digital modulation schemes.

(8 × 5 = 40 marks)

Part B

II. (a) Explain the generation and de-modulation of PAM system.

Or

(b) Derive the Signal to Noise ratio of a delta modulation receiver.

III. (a) Explain Nyquist second criterion for zero ISI.

Or

(b) Write notes on : (i) Eye diagram ; (ii) Scrambler.

(8 + 7 = 15 marks)

IV. (a) Explain the working of a matched filer and derive its bit-error probability.

Or

(b) Explain any *two* methods of symbol synchronisation.

V. (a) Derive the bit-error probability of coherent ASK, FSK and PSK receivers.

Or

(b) (i) Explain a coherent memory digital modulation system.

(ii) Compare the power spectrum of various digitally modulated signals.

[4 × 15 = 60 marks]