C 6263

Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2005

EC 2K 603—DIGITAL COMMUNICATIONS

(New Scheme)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) State and explain sampling theorem for band pass signals.

(b) Explain the following binary PAM formats :

(i) Polar RZ.

(ii) Bipolar NRZ.

(iii) Manchester.

(c) What is eye diagram ? Explain with neat sketch.

(d) State Gram-Schmidt orthogonalization procedure.

(e) What is matched filter ? State its properties.

(f) Define Gaussian Process and explain.

(g) Explain about binary coherent ASK scheme.

(h) Compare BPSK scheme with binary FSK scheme.

(8 × 5 = 40 marks)

II. (a) Explain the generation and demodulation of PPM signals.

Or

(b) Draw the block diagram of PCM system and explain.

III. (a) State and prove Nyquist Pulse shaping criterion for zero ISI.

Or

(b) Explain about binary Scrambler and descrambler.

IV. (a) Derive the optimum receiver structure for detecting deterministic signal in the presence of AWGN.

Or

(b) Derive the transfer function of matched filter for coloured noise.

V. (a) Derive the spectra of binary PSK signals.

Or

(b) Derive the error probability of binary FSK scheme.

(4 × 15 = 60 marks)