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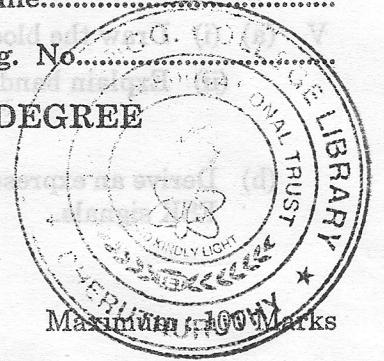
Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2011

EC 04 604—DIGITAL COMMUNICATION

(2004 admissions)



Time : Three Hours

Part A

Answer all questions.

- I. (a) Compare PAM, PPM and PWM signals.
(b) What is slope overload ? Explain.
(c) Explain the concept of signal space diagram.
(d) What is raised cosine pulse ? Explain.
(e) What is meant by correlation receiver ? Explain.
(f) Explain what is meant by synchronization.
(g) Explain the geometrical representation of binary PSK signals.
(h) Compare the performance of ASK and PSK signals.

(8 × 5 = 40 marks)

Part B

- II. (a) Draw the block diagram of the transmitter and receiver of DPCM and explain in detail.

Or

- (b) (i) Explain various line coding schemes. (9 marks)
(ii) Explain sampling theorem for bandpass signals. (6 marks)

- III. (a) (i) Draw the block diagram zero forcing equalizer and explain. (8 marks)
(ii) Explain what is scrambling and descrambling. (7 marks)

Or

- (b) (i) State and prove Gram-Schmidt orthogonalization theorem. (7 marks)
(ii) State and prove any two properties of matched filter. (8 marks)

- IV. (a) Explain the following decision schemes :—

- (i) Maximum-a-posteriori detector.
(ii) Maximum Likelihood detector.

Or

- (b) Derive the probability of optimum receiver.

Turn over

- V. (a) (i) Draw the block diagram for generating and detecting ASK signals and explain.
- (ii) Explain bandwidth of binary FSK and PSK signals.

Or

- (b) Derive an expression for the calculation of average probability of error for detection of binary FSK signals.

[4 × 15 = 60 marks]

Time : Three Hours

Part A

Answer all questions.

- I. (a) Compare PAM, PPM and PWM signals.
- (b) What is slope overload? Explain.
- (c) Explain the concept of signal space diagram.
- (d) What is raised cosine pulse? Explain.
- (e) What is meant by correlation receiver? Explain.
- (f) Explain what is meant by synchronization.
- (g) Explain the geometrical representation of binary PSK signals.
- (h) Compare the performance of ASK and PSK signals.

(8 × 5 = 40 marks)

Part B

- II. (a) Draw the block diagram of the transmitter and receiver of DPCM and explain in detail.

Or

- (b) (i) Explain various line coding schemes. (3 marks)
- (ii) Explain sampling theorem for bandpass signals. (6 marks)
- III. (a) (i) Draw the block diagram zero forcing equalizer and explain. (8 marks)
- (ii) Explain what is scrambling and descrambling. (7 marks)

Or

- (b) (i) State and prove Gram-Schmidt orthogonalization theorem. (7 marks)
- (ii) State and prove any two properties of matched filter. (8 marks)

- IV. (a) Explain the following decision schemes:—
- (i) Maximum-a-posteriori detector.
- (ii) Maximum likelihood detector.

Or

- (b) Derive the probability of optimum receiver.

Turn over