C 28741 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2012

AI 04 604 – ELECTRONIC COMMUNICATION SYSTEMS

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

I. (a) What are elements of a Communication System? Briefly explain.

(b) What is a Standing Wave Ratio? Explain its significance.

(c) Define (i) Selectivity ; (ii) Sensitivity ; and (iii) Fidelity.

(d) What is the function of a limiter in an FM receiver? Explain.

(e) Briefly explain the Natural sampling and Flat top sampling.

(f) Explain the transmission and reception of Baseband signals.

(g) What is telemetry? Explain.

(h) State Snell's law for refraction and outline its significance in fiber optic cables.

(8 × 5 = 40 marks)

II. (a) Explain the following parameters of an Antenna :

(i) Antenna Co-ordinate System.

(ii) Radiation Pattern.

(iii) Radiation Resistance.

(iv) Directive Gain.

(v) Effective Isotropic Radiated Power.

(5 × 3 = 15 marks)

Or

(b) (i) Derive an expression for the frequency modulated wave. Explain the difference between a Narrow band FM and Wideband FM.

(ii) Explain the phase shift method of SSB generation.

(10 + 5 = 15 marks)

III. (a) What is an Automatic Gain Control? Explain the various types of Automatic gain control circuits with necessary circuit diagrams.

(15 marks)

Or

Turn over

(b) Explain in detail about :

(i) Tuned Radio frequency receivers.

(ii) Superheterodyne Receivers.

(5 + 10 = 15 marks)

IV. (a) (i) Derive an expression for the quantization noise in a PCM system.

(ii) Explain the Delta Modulation System.

(8 + 7 = 15 marks)

Or

(b) (i) Briefly explain the companding process.

(ii) What is frame synchronization? How is it achieved in a PCM/TDM system?

(7 + 8 = 15 marks)

V. (a) With block diagram, explain the

(i) Frequency diversity,

(ii) Space diversity,

(iii) Polarization diversity

microwave systems.

(3 × 5 = 15 marks)

Or

(b) Discuss in detail about the Cellular System.

(15 marks)

[4 × 15 = 60 marks]