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Name.....

Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, JUNE 2009**

EC 04 406—ANALOG COMMUNICATIONS

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

- I. (a) Explain AM signal with frequency domain representation.
(b) Explain what is meant by capture effect.
(c) Explain what is meant by selectivity of a receiver.
(d) Discuss the principle of operation of colour TV receiver.
(e) Explain what is wide sense stationarity.
(f) Derive the noise equivalent bandwidth of thermal noise.
(g) Explain what is meant by threshold effect in AM receiver.
(h) Explain the principle of PWM system.

(8 × 5 = 40 marks)

Part B

- II. (a) (i) Draw the block diagram of AM transmitter and explain. (10 marks)
(ii) Explain what is meant by VSB ? (5 marks)

Or

- (b) (i) Explain the generation of PM wave by using FM with block diagram.
(ii) Explain the circuit of pre-emphasis.

- III. (a) Explain the functional operation of the FDM system. How are groups formed for telephone channel transmission ?

Or

- (b) (i) Explain the detection of FM signal using phase locked loop. (9 marks)
(ii) Explain the factors which decide the horizontal and vertical scanning frequencies. (6 marks)

Turn over

IV. (a) Derive the representation of narrow band noise in terms of envelope and phase components.

Or

(b) Derive the relationship between input and output power spectral densities of linear time-invariant system.

V. (a) Derive the signal-to-noise ratio in FM receiver with the block diagram of FM noise model.

Or

(b) What is sampling ? Explain reconstruction signal from sampled signal with necessary mathematical expressions.

(4 × 15 = 60 marks)