C 26887

Name.....

Reg. No.....

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION MAY 2012

EC 09 404/PTCE 09 403—ANALOG COMMUNICATION

(2009 admissions)

Time : Three Hours

Maximum : 70 Marks

Part A

Answer **all** *questions.*

1. Define Random variable.
2. What is a Covariance function ?
3. What is a Vestigial sideband modulation ?
4. Define sensitivity of a receiver.
5. Define signal-to-noise ratio.

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

6. State and explain Central limit theorem.
7. Briefly explain Gaussian process.
8. What is the need for modulation ?
9. Draw the frequency spectrum of the AM DSB-FC modulated wave.
10. Write a note on frequency division multiplexing.
11. What is a white noise ? Give its power spectral density.

(4 × 5 = 20 marks)

Part C

12. (a) Discuss in detail about the joint distribution and density functions.

Or

(b) Explain the transmission of a Random process through a linear time invariant filter.

13. (a) With neat sketch, explain the high level and low leave transmitters.

Or

(b) Derive an expression for the narrowband FM.

14. (a) Explain the operation of a Tuned Radio Frequency receiver.

Or

(b) Discuss in detail about the threshold effect in FM.

15. (a) Derive an expression for the narrowband representation of a noise.

Or

(b) Derive the output signal to noise ratio of an AM receiver employing envelope detector.

(4 × 10 = 40 marks)