

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 level 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)