



**M 27018**

Reg. No. : .....

Name : .....

**IV Semester B.Tech. Degree (Reg./Sup./Imp. – Including Part Time)  
Examination, May 2015  
(2007 Admn. Onwards)**

**PT2K6/2K6 EC 403 : COMMUNICATION ENGINEERING – I**

Time : 3 Hours

Max. Marks : 100

1. a) Explain the stationary random process with help of one example.  
b) State and explain Wiener-Khinchie theorem.  
c) What is a white noise ? Give its power spectral density.  
d) Explain thermal noise.  
e) How will you generating DSBSC-AM ? Explain.  
f) Explain the advantages of VSB-AM ?  
g) Explain the advantages of Angle Modulation ?  
h) Difference between pre-emphasis and de-emphasis. (8×5=40)
  
2. a) State and prove any two properties of Gaussian random process. 8  
b) Explain when is a random process is said to be ergodic in mean. 7

OR

3. a) Explain the response of LTI system to a random process. 7  
b) Write short notes on ensemble and time averages. 8
  
4. Define noise. Explain different types of noise. 15

OR

5. What is narrowband noise discuss the properties of the Quadrature components of a narrowband noise ? 15

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6. Describe the generation of SSB wave using phase shift method. **15**

OR

7. Explain the generation and detection of AM signals. **15**

8. Derive the expression for the frequency modulated signal. Explain what is meant by narrowband FM and wideband FM using the expression. **15**

OR

9. Explain any two techniques of demodulation of FM. **15**

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