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Roll No.	Total No. of Pages :
Total No. of Questions : 09	
B.Tech.(EIE) (2011 & Onwards)	(Sem.–4)
SIGNAL AND SYSTEM	NS
Subject Code:EC-206	5
Paper ID : [A0308]	

Time:3 Hrs.

Max. Marks: 60

02

INSTRUCTION TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks 1. each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students 2. have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. **Explain briefly :**

- a) Sampling Theorem.
- b) Relationship between joint PDF and probability. instRaf
- c) Drichlet condition.
- d) Transform of sine pulse.
- e) Ergodicity.
- f) Shift Invariance:
- g) Fourier Spectrum of signal.
- h) Shifting property of impulse function.
- i) Noise Bandwidth.
- j) Difference between stationary and non stationary random process.



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SECTION-B

- Define transistor signal to noise ratio and noise figure of receiver. 2.
- 3. Describe the difference between deterministic and random signals.
- 4. For signal x(t) which is an even signal, show that

$$\int_{-\infty}^{\infty} x(t) dt = 2 \int_{0}^{\infty} x(t) dt$$

- 5. Explain thermal and shot noise in detail.
- 6. Write a short note on Random process.

SECTION-C

- 7. Determine whether following systems are (i) Memoryless (ii) Stable (iii) Causal (iv) Linear (v) Time Invariant : ercom
 - a) y(n) = n x(n)
 - b) $v(t) = e^{x(t)}$
- State and Derive Parseval's theorem for power signals. 8.
- Define noise. Explain all types of noise in detail. 9. March!