F 3637 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Fifth Semester

Branch : Electrical and Electronics Engineering

EE 010 503 – SIGNALS AND SYSTEMS (EE)

(New Scheme – 2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*

Each question carries 3 *marks.*

1. Define signal and system. Give an example.
2. Define inverse Fourier transform.
3. Define power spectral density.
4. Distinguish FIR and IIR systems.
5. Define symmetric network.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Explain the classification of signal with examples.
7. Find the Fourier transform of rectangular pulse.
8. Explain autocorrelation for energy signals.
9. Write down the effects of under sampling.
10. Explain characteristics impedance.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*

Each question carries 12 *marks.*

11. Explain the classifications of continuous time systems.

Or

12. Derive the mathematical expression for continuous time Fourier series.

Turn over

13. Find the Fourier transform for the given signal (a) Sine ; (b) Triangular.

Or

14. Explain the properties of Fourier transform.

15. Derive the cross correlation of energy and power signals.

Or

16. Define convolution and correlation. Explain convolution theorem.

17. Explain reconstruction of signal with neat sketch.

Or

18. Find the natural and forced response of an LTI system given by :

$10dy\,(t) / dt + 2\,y\,(t) = x\,(t)$?

19. Explain the properties of symmetrical two port network.

Or

20. Write a short note on *m*-derived T and PI sections.

(5 × 12 = 60 marks)