D 20621 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER B.TECH (ENGINEERING) DEGREE EXAMINATION OCTOBER 2011

EC 09 303/PT EC 09 302—NETWORK ANALYSIS AND SYNTHESIS

(2009 admissions)

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

1. Write Thevenin's theorem.
2. Draw the step response of a RLC network.
3. Write the concept of complex frequency.
4. List the types of filters.
5. Give example for even and odd functions.

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

6. Construct a R.C. integrator and explain.
7. Explain maximum transfer theorem with example.
8. List the restriction of poles and zeros in the driving point and transfer function.
9. Give the basic passive realization of Butterworth transfer functions.
10. Explain the properties of Hurtwitz polynomials.
11. Define the parameters of two port network.

(4 × 5 = 20 marks)

Part C

Answer Section (a) or (b) of each questions.

12. (a) Discuss the transformation of a circuit into S-domain and also discuss the node analysis and mesh analysis of the transformed circuit.

Or

(b) Explain the transient analysis of RC and LC networks with impulse, step and ramp inputs. (10 marks)

13. (a) Explain the poles and zeros of network functions and their locations, effects on the time and frequency domain responses.

Or

(b) Discuss the concepts of interconnected two port networks with example. (10 marks)

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14. (a) Explain how the frequency transformations to high pars, band pars and band eliminations are made.

Or

(b) Explain the characteristics of Butterworth and Cheybysheve filters with neat diagrams. (10 marks)

15. (a) (i) Discuss the properties of positive real functions. (5 marks)

(ii) What is meant by driving point function ? (5 marks)

Or

(b) Discuss the properties of RC network functions and foster and cauer forms of RC and RL networks. (10 marks)

(4 × 10 = 40 marks)