

D 20621-A

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Name

Reg. No.



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

EC 09 203
PTEC 09 302 NETWORK ANALYSIS AND SYNTHESIS

(2009 admissions)

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. Write maximum power transfer theorem.
2. Construct a differentiator using R and C.
3. Write applications of Bode plot.
4. Write the basics of LPF.
5. What are driving point functions ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Explain superposition theorem with example.
7. Write the concept of mutually coupled circuits.
8. Explain the hybrid parameters of two port network.
9. Explain the working of bridged T attenuator.
10. Draw the transfer characteristics of Butterworth low pass filter.
11. Write Strum's theorem.

(4 × 5 = 20 marks)

Part C

Answer section (a) or section (b) of each question.

12. (a) Explain the transformation of a circuit into S-domain and also explain the node analysis of the transformed circuit.

Or

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

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

Or

- (b) Explain the analysis of interconnected two port network with example.

Turn over

14. (a) Explain the LP transformation to high pass, band pass and band elimination.

Or

(b) Discuss the characteristics of Chebyshev filters.

15. (a) What is Brune's positive real function ? Explain the properties of positive real functions.

Or

(b) (i) Discuss the properties of RC network functions. (5 marks)

(ii) Explain the Foster and Cauer forms of RC and RL networks. (5 marks)

[4 × 10 = 40 marks]

Maximum : 70 Marks

Time : Three hours

Part A

Answer all questions

1. Write maximum power transfer theorem.
2. Construct a differentiator using R and C.
3. Write applications of Bode plot.
4. Write the basics of LFP.
5. What are driving point functions?

(5 × 2 = 10 marks)

Part B

Answer any four questions

6. Explain superposition theorem with example.
7. Write the concept of mutually coupled circuits.
8. Explain the hybrid parameters of two port network.
9. Explain the working of bridged T attenuator.
10. Draw the transfer characteristics of Butterworth low pass filter.
11. Write Starin's theorem.

(4 × 5 = 20 marks)

Part C

Answer section (a) or section (b) of each question.

12. (a) Explain the transformation of a circuit into s-domain and also explain the node analysis of the transformed circuit.
- (b) Explain the transient analysis of RC and LC networks with impulse, step, ramp and exponential inputs.
13. (a) Explain the locations of poles and zeros and effects on the time and frequency domain responses.
- (b) Explain the analysis of interconnected two port network with example.

Turn over