

### Material Covered for Midterm I

Text Sections 1.1

Text Sections 2.1,2.2,2.3,2.4;  
(also several matching problems involving impedance or admittance formulation using Smith Chart)

Text Sections 3.5,3.7,3.8,3.11 ( the Coaxial Line, the Strip Line,the Microstripline and the Slot Line)

Text Section 4.3 ( the Scattering Matrix p.174, Reciprocal Networks and Lossless Networks p.177,Generalized S-parameters pp.181/182)

Text Section 4.5 and handout Notes for Chapter 4( Signal Flow Graphs, The Mason's Formula for solving 2-,3- and 4-port Circuits)

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### Material covered after Midterm I [ for Midterm II]

Section 11.1 ( Two port power gains)

Section 4.4 ABCD Matrix

**Chapter 5** Section 5.1 Matching with lumped elements( L networks) pp. 252-254 of the Text

**Chapter 7** Section 7.1 ( Three port networks; four port networks; directional couplers; symmetric coupler; antisymmetric coupler)

Section 7.2 The T-junction Power Divider

Section 7.5 The Quadrature ( 90 degree hybrid) -- Branch line coupler

Section 7.8 The 180 degree hybrid--Ring Hybrid

Section 7.6 Coupled Line Directional Couplers

**Chapter 8** Section 8.2 Filter design by image parameter method ( Design of low pass constant- k and m-derived filters)

Design of composite filters

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## **Material Covered after Midterm II**

**Chapter 8** Section 8.3 Filter Design by the Insertion Loss Method; Design of maximally flat or Butterworth Low Pass Filters;

Design of Equal Ripple Low Pass Filters

Section 8.4 -Filter Transformations ( High-pass and Low-pass Filters)

Section 8.6 - Stepped Impedance Low-pass Filters

Section 8.7 - Coupled line Filters, Band Pass Filters

**Chapter 6** Sections 6.1, 6.2, 6.6 Series and parallel resonant circuits; Transmission Line resonators;

Critical coupling; a gap-coupled microwave resonator

**Chapter 3** Sections 3.1, 3.3—TEM, TE and TM waves; Rectangular Waveguides. Problems involving use of

Smith Chart for waveguides with capacitive and inductive discontinuities

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