

BME/ISE 3511 Bioelectronics I, Test Three emphasis three main topics:

Delta & Y Configurations (including simplified equivalent resistive circuits)

Design Voltage Divider Network (10 % Rule)

Principles of Superposition

Types of possible exam questions and problems:

Use following techniques to solve for current through and voltage across a network resistor:

Equivalent Resistances

Kirchoff's Voltage Law

Kirchoff's Current Law

Principle of Superposition

Thevenin Equivalent

Norton Equivalent

Sketch Series Resistors Voltage Divider (including voltage source)

Calculate voltage across load resistor

Voltage Divider (Resistors in Series with Voltage Source) $V_2 = V (R_2 / (R_1 + R_2))$

Sketch Parallel Resistors Current Divider (including current source)

Calculate current through load resistor

Current Divider (Resistors in Parallel with Current Source) $I_2 = I (R_1 / (R_1 + R_2))$

Design Voltage Divider Network (10% rule for two resistors and voltage source) given output requirements

Convert Delta configuration to equivalent Y configuration

Convert Y configuration to equivalent Delta configuration

Solve Voltage Source & Current Source Circuit Network Problems (using Superposition)

See BME/ISE 3511 Test Three Course Notes for example problems and solutions.