

ECE 4300/5950 ELECTRICAL POWER SYSTEMS - TEST I TIPS

There will be 3 questions and you are to answer all. Please, use BLUE/GREEN BOOKS 81/2x11 in. Areas to be covered:

1. Power Systems
 - (a) Generation
 - (b) Transmission and Sub-transmission
 - (c) Distribution
 - (d) Loads

2. Basic Principles
 - (a) Single-Phase Circuit
 - (b) Complex Power
 - (c) Complex Power Flow
 - (d) Balanced Three-Phase Circuits
 - (d) Δ/Y Connected Loads and Transformation
 - (e) Per-Phase Analysis
 - (f) Power

3. Generators and Transformers, Per Unit
 - (a) Per-Unit System
 - (b) Change of Base
 - (c) Cylindrical and Salient Pole Generators
 - (d) Steady Characteristics
 - (e) Transformers – 1-phase, 3-phase, Equivalent Circuit, Parameters
 - (f) Auto Transformers
 - (g) Three-Winding Transformer

4. Transmission Line Parameters
 - (a) Line Resistance
 - (b) Inductance
 - (c) Capacitance
 - (d) Composite – Bundled Conductors
 - (e) 1-Phase, 3-Phase

EXAMPLES

1. Problem #2.7 pp. 44.
2. Problem #2.8 pp. 45.
3. Problem #2.10 pp. 45.
4. Problem #2.13 pp. 47.
5. Problem #2.15 pp. 47.
6. Problem #3.5 pp. 97.
7. Problem #3.8 pp. 98.
8. Problem #3.16 pp. 101.
9. Problem #3.17 pp. 101.
10. Problem #4.2 pp. 136
11. Problem #4.6 pp. 136.
12. Problem #4.7 pp. 137.