

DEPARTMENT OF ELECTRICAL ENGINEERING

MAJOR TEST- 2008-09

EEL 896/EEL458: POWER SYSTEM OPTIMIZATION

Time: 2Hrs

Max Marks: 60

1. For a 3 bus system, explain Newton's OPF for cost minimization. Generators are at buses 1 and 2 and the load is at bus 3. Consider the voltage magnitudes to be fixed at all buses. Consider all other relevant constraints. The generator cost characteristics are quadratic. (10)
2. Explain how you will use Dynamic programming for ED with a non-smooth cost characteristics. Use a 3 generator example. (10)
3. Explain the LR-DP method of UC and how it is better than only DP method. (10)
4. In what way the voltage security analysis differs from overload security analysis? Discuss one method for the same. (10)
5. Explain the complete scheme of overload security enhancement. Give mathematical models also. (10)
6. Explain the concept of anticipatory load shedding scheme for voltage stability enhancement. Give mathematical models. (10)