

**B.Tech. 7th Semester (F) Scheme (EE) Examination,**

**December-2018**

**POWER SYSTEM OPERATION AND CONTROL**

**Paper-EE-405-F**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

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*Note : Question No. 1 is compulsory and attempt any one question from each of four sections.*

1. (a) Explain voltage Collapse.
- (b) What are Transient stability and Steady Stability?
- (c) Discuss Optimal System Operation.
- (d) Explain Power angle equation for a simplified machine model. 20

**Section-A**

2. (a) Explain the need of economic dispatch and optimal load frequency control. 10
- (b) Discuss Load Management in detail. 10
3. Describe generator and governor model of automatic generation control of electric power. 20

**Section-B**

4. Describe optimal generation schedule hydro thermal optimal scheduling with neat sketch. 20

5. (a) Explain optimal operation of generators of bus bar. 10
- (b) Define unit commitment in detail and explain reliability Considerations. 10

### Section-C

6. (a) What is the effect of clearing time on stability ? 10
- (b) Explain dynamic stability. 10
7. (a) Explain computational algorithm for obtaining swing curves using Modified Euler's method. 10
- (b) Explain Equal area criterion of stability. 10

### Section-D

8. Discuss the role of AVR on transient stability of system also discuss the type 0 and 1 excitation system. 20
9. (a) What is voltage collapse ? How you prevent it ? 10
- (b) Explain Power system stabilizers. 10