B.Tech. 7th Semester (EE) F-Scheme Examination, December–2017

POWER SYSTEMS OPERATION AND CONTROL

Paper–EE–405–F

Time allowed : 3 hours] *[Maximum marks : 100*

Note : ***First Question is compulsory.*** *Attempt* ***five*** *questions in all attempting at least* ***one*** *question from each section.*

1. (a) What is the role of AVR ? Explain briefly.

(b) State the factors which affect the transient stability.

(c) Define Load Management.

(d) Mention the factors in brief which affect the transient stability. 5×4

Section–A

2. State and explain the generator and governor model of automatic generation control of electric power. 20

3. (a) Explain Tie-Line in detail. 10

(b) Explain two area generation control of power with the help of Tie-Line Model. 10

Section–B

4. (a) What is optimal generation schedule ? Explain. 10

   (b) Explain reliability considerations. 10

5. Explain Economic despatching of thermal system by considering network losses. 20

Section–C

6. (a) Write a note on "Effect of fault clearing time and equal area criteria". 10

   (b) Differentiate between Steady state, transient and dynamic stabilities. 10

7. (a) Discuss the dynamics of synchronous machine. 10

   (b) Write a note on power system stability and its types. 10

Section–D

8. Explain the role of AVR on transient stability of system also discuss the type 0 and 1 excitation system. 20

9. Write notes on :

   (i) Voltage Collapse

   (ii) Modelling and prevention. 10+10