

- (b) Explain the classification of excitation systems. **10**
8. (a) Explain voltage regulation with and without compensators. **10**
- (b) Derive the voltage stability index of a typical branch of a power system. **10**

No. of Printed Pages : 4

Roll No.

W722

B. Tech. (WEEKEND) EXAMINATION,

May 2019

(Seventh Semester)

(Re-appear Only)

(EE)

EEW403

POWER SYSTEM OPERATION AND CONTROL

Time : 3 Hours

[Maximum Marks : 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. All questions carry equal marks.

M-W722

4

50

(4-24/5) M-W722

P.T.O.

1. (a) Develop the block diagram of the LFC of a single area system. **10**
(b) Draw the schematic diagram of a speed governing system and explain its components on the dynamic response of an uncontrolled system with necessary equations. Hence, obtain the transfer function of a speed governing system. **10**
2. (a) Explain why it is necessary to maintain the frequency of the system constant. **10**
(b) Explain the p - f and Q - v control loops of power system. **10**
3. (a) Describe the need of economic dispatch. **10**
(b) Bring out the difference between optimal operation of generators in thermal stations and optimal scheduling of hydro-thermal systems. **10**

M-W722

2

4. (a) Obtain the condition for optimum operation of a power system with ' n ' plants. **10**
(b) Explain the significance of equality and inequality constraints in economic allocation of generation among different plants in a system. **10**
5. (a) What do you mean by stability in power system ? Describe major stability problems. **10**
(b) Describe equal area criterion to analyse power system stability. **10**
6. (a) Describe various methods to improve transient stability of system. **10**
(b) Derive swing equation from dynamics of synchronous machine. **10**
7. (a) What do you mean by AVR ? What is the sole of AVR on transient stability of system. **10**

(4-24/6) M-W722

3

P.T.O.