

315336

25226

3 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions* –
- (1) All Questions are *Compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answer with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following:** **10**
- a) State the main components of power system. (Any four points)
 - b) List out effect of reactive power imbalance in power system.
 - c) Define per unit value.
 - d) State the need of constant frequency control.
 - e) Define the following:
 - i) Dynamic stability,
 - ii) Transient stability.
 - f) State the significance of load forecasting in power system.
 - g) Compare between small disturbance and large disturbance in a power system. (Write any two point)

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Explain the need of constant supply voltage for consumers.
 - b) Draw the block diagram of automatic generation control (AGC) for generating system.
 - c) Describe the need of load forecasting in power system operation.
 - d) State the adverse effect of instability of power system.
- 3. Attempt any THREE of the following: 12**
- a) Draw a labelled Schematic diagram of Automatic Voltage Control (AVC).
 - b) Derive relation between real power balance and frequency of the power system.
 - c) With reference to Indian power system, state the types of LDCs and their functions
 - d) List out the function of National load dispatch centre.
- 4. Attempt any THREE of the following: 12**
- a) Define the following term:
 - i) Instability
 - ii) Power system stability
 - iii) Overall stability
 - iv) Steady state stability.
 - b) Explain any two fact devices used for reactive power injection.
 - c) Explain the Block diagram of (ALFC) automatic load frequency control.
 - d) Explain environmental and social factors in load forecasting.
 - e) State the types of Load Dispatch Centre (LDC) and their locations w.r.t. Indian Power System.

5. Attempt any TWO of the following:

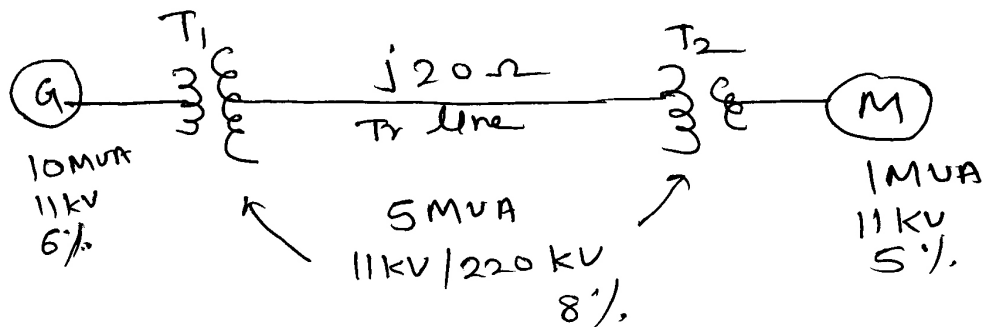
12

- Derive the relation between voltage and reactive power flow in simple two power system.
- Describe the working of Turbine speed Governing system for turbo generator speed control with a labelled schematic diagram.
- Explain shunt compensation and series compensation method of reactive power compensation for transmission line.

6. Attempt any TWO of the following:

12

- Draw per unit diagram for given power system assuming transformer as base:



- Describe the functioning of Automatic Voltage Control (AVR) with neat block diagram.
- Describe various methods of improving transient state stability condition.