

MEPE-201

M. E./M. Tech. (Second Semester)

EXAMINATION, June, 2012

(Grading/Non-Grading)

SOLID STATE CONTROLLERS

(MEPE-201)

Time : Three Hours

Maximum Marks : $\begin{cases} GS : 70 \\ NGS : 100 \end{cases}$

Note : Attempt all the five questions. All questions carry equal marks.

Unit-I

1. Draw and explain the block diagram of microprocessor based speed control of separately excited D. C. motor using three phase (AC-DC) rectifier.

Or

Discuss microprocessor based closed loop scheme to control the speed of separately excited d. c. motor using chopper.

Unit-II

2. Explain the microprocessor based control system using phase locked loop for digital firing circuit for the control of synchronous motor.

P.T.O.

Or

Discuss the microprocessor based, speed control scheme using the inverter for the three phase induction motor drive.

Unit-III

3. Describe the programmable controllers used for the three phase synchronous motor drives for specific applications.

Or

Give the steady state and transient analysis of armature controlled chopper fed d. c. drive.

Unit-IV

4. Discuss the speed control of three phase induction motor by :
 - (i) Variable stator voltage control
 - (ii) Variable frequency controlCompare it with the v/f control.

Or

Describe the slip power recovery scheme with block diagram for the slipring induction motor drive.

Unit-V

5. Explain the CSI and VSI fed PWM controlled synchronous motor drives.

Or

Discuss the construction, working principle, control strategy of switched reluctance motor drive. Also draw the torque-speed characteristics.