

Total No. of Questions :8]

[Total No. of Printed Pages :2

Roll No

MEPE-201**M.E./M.Tech. II Semester**

Examination, June 2017

Solid State Controllers of Drives**Time : Three Hours****Maximum Marks : 70**

- Note:** i) Total number of questions are eight.
 ii) Attempt any five questions.
 iii) All questions carry equal marks.

1. a) Explain the operation of four quadrant chopper. How it can be operated using microprocessor? Explain. 8
 b) Discuss the operation of current commutated chopper. 6
2. a) Describe the microprocessor based operation of single phase semiconverter with suitable waveforms. 7
 b) What is PLL? Explain its functioning and typical applications. 7
3. Explain the operation of 3ϕ bridge inverter in 120° mode with line and phase waveform for star connected load. Also explain its control through microprocessor. 14
4. a) Explain the operation of single phase step up cycloconverter with waveforms. 7
 b) Describe the operation of three phase to single phase cycloconverter with neat sketches. 7

MEPE-201

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[2]

5. a) Explain vector control scheme of three phase induction motor drive with neat sketches. 8
 b) Explain the braking of dc drives brief with torque speed curves. 6
6. a) What is V/F control and why this ratio is kept constant? Explain V/F control for three phase induction motor. 7
 b) Discuss the concept of slip power recovery scheme. Explain static scherbius drive. 7
7. a) Explain VSI fed three phase synchronous motor drive with diagram. 7
 b) Explain the operating principle of brushless motor drives. 7
8. Describe with neat sketch the construction, principle and operating modes of switched reluctance motor drive with essential waveform and applications. 14

MEPE-201