*Total No. of Questions :8]* *[Total No. of Printed Pages :2*

**Roll No**.....

# MEPE-204

## M.E./M.Tech. II Semester

Examination, June 2017

## Modelling and Simulation of Drives

***Time : Three Hours***

***Maximum Marks : 70***

***Note:*** i) Answer any five questions.
ii) Part (a) & (b) of a question carries 7 marks each.

1. a) Explain what do you understand by the steady state stability of a drive. What are the main assumptions?
   b) What are the reasons for using load equalisation in an electric drive? Explain.

2. a) Explain the following duties for motor rating selection:
      i) Continuous duty
      ii) Short time duty
      iii) Intermittent duty
   b) State and explain the disadvantages of using a motor of wrong rating.

3. a) Describe relative merits and demerits of four quadrant DC drives employing non circulating and circulating current dual converters.
   b) Explain the operation of single phase controlled rectifier fed DC series motor drive.

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4. Explain the slip power recovery scheme of speed control of induction motor.

5. a) What is the difference between true synchronous mode and self control mode for variable frequency control of synchronous motor? Explain.
   b) Why load commutated inverter fed synchronous motor drive is suitable for high speed and high power applications? Explain.

6. a) Explain the basic principle of CSI fed induction motor drive.
   b) Give a comparison of CSI and VSI fed induction motor drives.

7. Explain variable frequency control of an induction motor. Draw and explain torque speed characteristics.

8. Explain the chopper control motoring and regenerative breaking of:
   i) Separately excited DC motor
   ii) DC series motor

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5542