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

 Roll No .....

MEPE-105

M.E./M.Tech., I Semester

Examination, June 2017

Electric Drives

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any Five questions.
ii) All questions carry equal marks.

1. a) Explain the speed torque characteristics of three phase induction motor (sq. cage), D.C. shunt and series motor. 7
   b) Explain different types of electrical braking used in electric motors. 7

2. a) What are the disadvantages of direction line starting of a three phase induction motor. How do other methods of starting help reduce the problems of direct on line starting. 7
   b) A 600 Volt Series motor runs at 600 rpm and takes 80 amps. Resistance of field and armature are 0.3Ω and 0.2Ω respectively. Calculate the value of diversion resistance so as to give speed of 800 rpm for the load conditions when torque remains constant and magnetic field remains unsaturated. 7

3. a) Write methods of speed control of D.C. motor. Explain any one in detail. 7
   b) Explain different methods are used for speed control of three phase squirrel cage induction motor. 7

4. a) Give the transient analysis of separately excited motor with armature control. 7
   b) Describe the transient behaviour of the three phase induction motor drive while starting and braking. 7

5. a) Explain the operation of single phase semi controlled converter fed separately excited DC motor drives. 7
   b) Explain with circuit diagram voltage source inverter for speed control of induction motor. 7

6. a) What is slip power recovery scheme in speed control of slip ring induction motor. Explain any one method. 7
   b) What are the different methods of speed control of synchronous motor? Explain any one method. 7

7. a) State the explain the disadvantages of using a motor of wrong rating. 7
   b) What are the main factors which decide the choice of electrical drive for a given application. 7

8. Short Notes on any two: 14
   a) Load Equalization.
   b) Braking in three phase induction motors.
   c) Why starters are used in electric motors.
   d) States of D.C. and A.C. drives.

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