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

**Roll No .....**

# EX - 702

## B.E. VII Semester

Examination, December 2016

## Electrical Drives

***Time : Three Hours***

***Maximum Marks : 70***

*Note:* i) Answer any five questions.
ii) All questions carry equal marks.

1. a) Draw and explain the block diagram of electric drives. 7
   b) Explain the operation of single phase fully controlled converted fed separately excited D.C. motor drives. 7

2. a) Explain with circuit diagram of a single phase dual converter feeding a separately excited motor. 7
   b) A 220V, 1000 rpm, 60A separately excited d.c. motor has an armature resistance of 0.1Ω. It is fed from a single phase full converter with an a.c. source voltage of 230V, 50Hz. Assuming continuous conditions, compute. 7
      i) Firing angle for rated motor torque at 600 rpm.
      ii) Motor speed for $\alpha = 150°$ and half rated torque.

3. a) State and explain the important features of various braking methods of d.c. motors. 7
   b) Mention the drawbacks of rectifier fed d.c. drives. 7

4. a) Explain the cyclo converter fed induction drive with the help of block diagram. 7
   b) In the V/f control scheme of three phase induction motor if we vary the voltage, why we have to vary frequency? Explain. 7





5. a) Describe static Kramer drive for speed control of induction motor. 7
   b) Describe static Scherbius drive for speed control of induction motor. 7

6. a) Explain VSI fed self controlled synchronous motor drive with neat circuit diagram. 7
   b) Why the load commutated inverter fed synchronous motor drive is found suitable for high speed and high power applications. 7

7. a) Write the applications of synchronous motor? 7
   b) State and explain the roles of a damper winding in a synchronous motor. 7

8. a) Explain the speed-torque characteristics of a d.c. motors. 7
   b) Explain the speed torque characteristics of a three phase induction motor. 7

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