B.E. Fourth Semester (Mechanical Engineering) (CGS)

10835 : Basic Electrical Drives & Control : 4 ME 01 / 4 PE 01

P. Pages : 2 | AU - 2568

Time : Three Hours | Max. Marks : 80

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Notes :
1. All question carry equal marks.
2. Answer **three** question from Section A and **three** question from Section B.
3. Due credit will be given to neatness and adequate dimensions.
4. Assume suitable data wherever necessary.
5. Illustrate your answer necessary with the help of neat sketches.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) Explain the concept of Electrical Drive with block diagram and state advantages. **7**

b) Explain the working of SCR with the help of characteristics. **6**

OR

2. a) Explain heating and cooling characteristics of electric motors. **6**

b) Explain mechatronics with suitable example. **7**

3. a) Explain the Electrical braking system for D.C. series motor in detail. **7**

b) Explain the construction and working of stepper motor. **6**

OR

4. a) Explain the working of Brushless DC motor. **7**

b) Draw and explain modified speed-Torque characteristics of D.C. series motor. **6**

5. a) Explain the construction and working of 3-phase Induction motor. **7**

b) Explain the working of capacitor start capacitor run single phase induction motor. **7**

OR

6. a) Explain the methods for starting of 3 phase induction motor. **7**

b) Explain the working of universal motor in detail. **7**

SECTION – B

7. a) Explain the V/F speed control method for 3 phase induction motor. **7**

b) Explain the working of chopper. **6**

OR

8.	a)	Explain slip power Recovery scheme for three phase induction motor.	**6**
	b)	Explain the armature voltage control method for D.C motor.	**7**
9.	a)	Explain the working of optical proximity sensors.	**7**
	b)	Describe the working of pressure transducers.	**7**

OR

10.	a)	Explain the working principle of A.C. Tachogenerator.	**7**
	b)	Explain the working of Hall effect sensor.	**7**
11.	a)	Explain the various processes involved and drives employed in cement mills.	**7**
	b)	Explain the principle of Induction heating?	**6**

OR

12.	a)	Explain electric drive in paper mill.	**7**
	b)	Explain the important features of traction drives.	**6**

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