M.E. First Semester (Electrical Engg. (Electrical Power System))

Advanced Electric Drives : EP 2104

P. Pages : 1

Time : Three Hours

AU - 3423

Max. Marks : 80

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) Explain steady state stability of drives. **7**

b) Determine the half hour rating of 30 kW motor having a time constant of 1.5 hours. Assume that motor cools down completely between each load period and that the iron losses which remain constant are 90% of copper losses at full load. **7**

OR

2. a) Explain various types of loads in drives. **7**

b) Describe Transient stability of drives. **7**

3. Explain speed control of dc shunt motor using three phase fully controlled rectifiers. **13**

OR

4. a) Explain principle of operation of chopper feed dc drives. **7**

b) Explain stability of variable dc drives. **6**

5. a) Explain variable frequency control method of Induction motor. **7**

b) Explain effective rotor resistance control of Induction motor. **6**

OR

6. Describe the process of slip power recovery scheme in case of induction motor. **13**

SECTION – B

7. a) Describe with neat sketch the self controlled synchronous motor drives. **7**

b) Explain the working of static Kramer drive with neat sketch. **7**

OR

8. Describe the working of CSI controlled induction motor drive. **14**

9. Explain analysis and stability of permanent magnet synchronous motor drives. **13**

OR

10. Explain analysis and stability of 3 phase induction motor drives. **13**

11. Explain constant V/F control of 3 phase induction motor with suitable block diagram. **13**

OR

12. Explain PWM inverter drives in detail. **13**

****