



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

SECTION - A

1. a) Draw and explain speed-Torque characteristics of constant torque load, variable torque load and constant power load. 7
b) Explain in details various types of loads in drives. 7

OR

2. a) Explain steady state stability of drives. 8
b) Explain determination of power rating of electric motors for different applications. 6

3. Describe the Chopper controlled d.c. drives with neat schematics. 13

OR

4. What do you mean by four quadrant operation of d.c. motor? Explain in details. 13

5. Describe the process of slip power recovery scheme in case of Induction motor. 13

OR

6. a) Explain effective rotor resistance control of an induction motor. 7
b) Explain variable frequency control method of an induction motor. 6

SECTION - B

7. Describe the working of CSI controlled induction motor drive. 14

OR

8. a) Describe the working of static Kramer drive with neat sketch. 7
b) Explain static rotor resistance control of an induction motor. 7

9. Explain battery fed powered drives in detail. 13

OR

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

11. Explain constant V/f control of three phase Induction motor in detail. 13

OR

12. a) Compare advantages and disadvantages of ac voltage controller fed three phase induction motor drive and inverter fed drives. 7
b) Explain controlled slip operation of three phase induction motor. 6
