



C14-EE-504

4639

BOARD DIPLOMA EXAMINATION, (C-14)
OCT/NOV—2018
DEEE—FIFTH SEMESTER EXAMINATION

INDUSTRIAL DRIVES

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Write any three advantages of electric drive.
2. Define multimotor drive.
3. List various types of motor enclosure.
4. State various systems of braking of electric motors.
5. What are the disadvantages of electrical braking system?
6. What is compressed air braking (pneumatic) system for electric motors?
7. Write any six domestic applications of drive.

- * 8. Mention suitable motors for the following drives : 1×3=3
- (a) Washing machine
- (b) Electric clock
- (c) Mixie
9. Write any six industrial applications of drives. $\frac{1}{2} \times 6 = 3$
10. Write any three characteristics for the motor suitable for lifts and hoists.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.
 (2) Each question carries **ten** marks.
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw the block diagram of an electric drive and state the function of each block in that diagram.
12. (a) Compare AC drives with DC drives.
 (b) Draw the typical load curves for (i) continuous duty at constant load and (ii) continuous duty with variable load of a motor. 5+5
13. (a) What is the advantage of using flywheel in some industrial drives?
 (b) Explain about different types of bearing. 5+5
- * 14. Explain how DC series motor is stopped by (a) plugging and (b) rheostatic braking. 5+5
15. What is regenerative braking? Explain regenerative braking applied to AC three-phase induction motor.

- * 16. A 220 V shunt motor drives a 725 N-m torque load when running at 1180 r.p.m. The armature resistance is 0.0075 Ω and shunt field resistance is 60 Ω . The motor efficiency is 90%. Calculate the value of the dynamic braking resistance that is capable of 400 N-m torque at 1000 r.p.m. The friction and windage losses are assumed to be constant at both speeds.
17. (a) Explain the working principle of domestic refrigerator (fridge).
(b) Mention suitable motors for the following drives :
(i) Paper mills
(ii) Punches and presses
(iii) Lifts and hoists
(iv) Computer printer
(v) CNC machine 5+5
18. (a) Explain the working of steel mill with suitable motor.
(b) Explain the working of rolling mill with suitable motor. 5+5
