C14-EE-504

4636

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH / APRIL - 2019

DEEE - V 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) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1 List any six types of Enclosures.

2 Write any three differences between AC Drives and DC Drives.

3 A motor has to perform the following duty cycle : 100 HP for 10 minutes, no load for 5 minutes, 60 HP for 8 minutes, no load for 4 minutes. Which is repeatedly identified ?

4 State any six advantages of Electric Braking.

5 Why regenerative braking cannot be applied to DC series motors ?

6 What are the requirements of good electrical braking ?

7 What is the function of a compressor in Refrigeration system ?

8 Select the suitable drive for the following :
(i) Air conditioner
(ii) Washing machines and
(iii) Pumps

9 List any six machines used for wood working machines.

10 Select the suitable motor for the following :
(i) Lathes, (ii) Kiln Drives and (iii) Lifts.

PART - B 10×5=50

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

11 At full load of 10 HP, temperature rise of a motor is 25°C after one hour and 40°C after two hours. Determine :

(a) The final temperature rise at full load,

(b) Heating time constant of motor and

(c) Half time hour rating, if iron losses which remain constant are 30% of copper losses at full load.

12 (i) Differentiate between the group drive and Individual drive.

(ii) Draw the output v/s time curve for different load operation conditions.

13 Explain what is meant by load equalization and how is it accomplished.

14 A 220V, 40 KW DC series motor running at rated speed of 1500 rpm is to be braked by plugging. The armature resistance is $0.1\,\Omega$, the rated efficiency of the motor is 90% and series field resistance is $0.3\,\Omega$. Determine (i) the resistance to be connected in series with the armature to limit the initial braking current to 1.5 times of rated current.

15 Explain the procedure of Regenerative Braking of DC shunt motor and Induction motor.

16 Explain the procedure of the magnetic braking with neat diagram.

17 (i) Explain the working of a vacuum cleaner with suitable motor.

(ii) Write briefly about the selection and nature of drive for Ship Propulsion.

18 Explain briefly about continuous hot rolling mills and reversing cold rolled mills.
