C14-EE-**504**

4639

BOARD DIPLOMA EXAMINATION, (C-14)

JUNE-2019

DEEE - FIFTH SEMESTER EXAMINATION

INDUSTRIAL DRIVES

Time:3 Hours Total Marks: 80

PART - A

10x3=30M

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

1) Draw the block diagram of an electric drive.

2) Compare AC drives abd DC drives.

3) Classify the drives based on their operation.

4) List any three disadvantages of electric braking.

5) Draw the circuit diagrams of a DC Series motor in plugging at the following conditions.

(i) Running (ii) Braking.

6) List any three types of braking systems used for industrial drives.

7) List the properties required for a table fan drive.

8) Name the motors used for the following drives.

(i) Air circulators (ii) Pumps (iii) Toys.

9) List any six domestic applications of drives.

10) List any three applications of 3-Phase slip ring induction motor.

PART - B

5x10=50M

Instructions: 1) Answer any five questions Each question carries10marks
2) Answer should be comprehensive and the criteria for valuation is the content but not length of the Answer.

11) a) Compare Individual drive and Group drive.
b) Explain the use of flywheel in load equalization.

12) A motor operates continuously on the following duty cycle.
i) Load rising from zero to 50kW for 6 seconds
ii) Constant load of 120kW for 7 seconds
iii) Constant load of 80kW for 10 second
iv) Idle for 14 seconds

Draw the load cycle and suggest a suitable continuous rated motor.

13) a) State the methods employed for reduction of noise. 3M
b) List any four factors which should be considered while selecting a drive. 3M
c) List the types of enclosures. 4M

14) Explain Dynamic braking applied to DC shunt motor with neat sketches.

15) a) What is regenerative braking?
b) A 50 hp, 440V, DC shunt motor is braked by plugging. Calculate the value of resistance to be placed in series with the armature circuit to limit the initial braking current to twice the full load current. Assume armature resistance as 0.1 Ω, full load current as 100 A.

16) Explain plugging applied to 3-phase induction motor with neat sketches.

17) List the characteristics required for drives used at different stages of cement making process and suggest suitable motors.

18) a) Explain the working of the drive for textile mills.
b) List the characteristics required for drive used in drilling machines.

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