C14-EE-**502**

4637

BOARD DIPLOMA EXAMINATION, (C-14)

JUNE-2019

DEEE - FIFTH SEMESTER EXAMINATION

A.C. MACHINES - II

Time:3 Hours | Max.Marks:80

PART-A

3x10=30M

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

1) Draw the phasor diagram of synchronous motor on load at lagging power factor

2) Draw the V and inverted V curves of synchronous motor at no load & full load.

3) Write the applications of universal motor.

4) List the various methods of speed control of induction motor.

5) Define a) Slip b) Slip speed.

6) Draw the power flow diagram of an induction motor.

7) State different types of single phase induction motor.

8) Draw the circuit diagram of spilt phase induction motor.

9) List the applications of shaded pole induction motor.

10) Write the any three applications of stepper motor.

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PART-B

5x10=50M

Instructions: 1) Answer any five questions. Each Question carries 10 marks.
2) Answers should be comprehensive and criteria for valution is the content but not the length of answer.

11) Explain the generation of rotating magnetic field in a three phase system.

12) a) Explain why the synchronous motor is not self starting.

b) Explain the starting method of synchronous motor by means of damper winding.

13) A three phase 4 pole 50 Hz induction motor has a slip ring rotor with a resistance and standstill reactance of 0.04 and 0.3 ohms/respectively. Find the amount of resistance to be intersted in each rotor phase to obtain full load torque at starting. The slip at full load is 4%.

14) a) Derive the relation between rotor starting torque and maximum torque.

b) Explain Torque Slip curve of a 3-ϕ Induction motor.

15) Explain the operation of auto transformer starter with diagram.

16) A 415 V, 29.84 kW,50 Hz, delta connected motor gave the following test data:

No load test : 415 V,21 A,1250 W

Blocked rotor test : 100 V,45 A,2730 W

Construct the circle diagram and determine

a) The line current and p.f for rated output

b) The maximum torque. Assume stator & rotor copper losses equal at standstill.

17) Explain the working of shaded pole induction motor with neat diagram.

18) Explain the working principle of A.C series motor with neat diagram.

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