6634

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DEEE–FIFTH SEMESTER

A.C. MACHINES-II

Time:3 hours   Max. Marks: 80

PART – A   **3 X 10 = 30**

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

1.   List the methods to start the synchronous motor.

2.   Draw the V curves of a synchronous motor at no load, half full load and full load.

3.   State the factors which effect the speed control of induction motor.

4.   Draw the power flow diagram of a three phase induction motor.

5.   State the function of centrifugal switch in a single phase induction motor.

6.   List the classification of single phase commutator motors.

7.   Compare group drive and individual drive.

8.   State the need of load equalization.

9.   What is the plugging method of electric braking.

10.   State the difference types of electric braking.

[Cont..,

PART – B   **5 X 10 = 50**

***Instructions*:** 1. *Answer any **Five** questions*
2. *Each question carries **TEN** Marks.*
3. *Answer should be comprehensive and Criteria forValuation is the content but not the length of the answer.*

11. Explain the effect of excitation on armature current and power factor at constant load on synchronous motor with neat diagrams.

12. a) Explain the working principle of synchronous motor.

    b)Derive the condition to get a maximum torque developed in a 3-phase induction motor.

13. A 3-phase, 6pole, 400 V, 50Hz induction motor takes a line current of 40 A at 0.8 p.f. and runs at 950rpm. Find its efficiency and motor output if the frictional losses are 4kW and stator losses are 3k W.

14. a) Draw the neat sketch of Star – delta starter of a 3-phase induction motor.

    b) Explain the Construction Features of double cage induction motor

15. Explain the working of shaded pole induction motor with a neat diagram.

16. Explain the working principle of a variable reluctance stepper motor with neat diagram.

[Cont..,

www.manaresults.co.in

17. A motor operates continuously on the following cycle.

    Load rising from 0 to 40 kW for 6 seconds,

    Constant load of 120 kW for 6 seconds,

    Constant load of 80 kW for 10 seconds and

    Idle for 14 seconds

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

18. A 220 V DC shunt motor drives 800 N-m torque load when running at 1200 rpm. The armature and shunt field resistance are 0.2 ohms and 200 ohms respectively. The motor efficiency is 90%. Calculate the value of the dynamic braking resistor that will be capable of 400 N-m torque at 1025 rpm. The friction and windage losses are assumed to be constant.