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BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL - 2019
DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING
A.C.MACHINES - II
SIXTH SEMESTER EXAMINATION

Time: 3 Hours   **Total Marks: 80**

PART - A   (10 x 3 = 30 Marks)

Note 1:Answer all questions and each question carries 3 marks

   2:Answers should be brief and straight to the point and shall not exceed 5 simple sentences

1. Why over excited Synchronous motor is called a Synchronous condenser.

2. State any three disadvantages of Synchronous motor.

3. State why the Synchronous motor is not self-starting machine.

4. Draw the Vector diagram of an Induction motor on load.

5. The rotor speed of a 6-pole, 50 Hz induction motor is 960 rpm, calculate the percentage slip.

6. An 8-pole, 750 rpm alternator supplies power to a 8-pole, 3-phase Induction motor. Find the full – load speed when the slip is 4%.

7. State the applications of shaded pole motors.

8. Draw the circuit diagram of a 1- ϕ Capacitor start Capacitor run induction motor.

9. Write the applications of shaded-pole motors.

10. State merits and demerits of Universal motors.

PART - B   (5 x 10 = 50 Marks)

Note 1:Answer any five questions and each question carries 10 marks

   2:The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer

11. Explain V and inverted -V curves.

12. Explain the generation of rotating magnetic field in a 3 – Φ system.

13. Describe the no load test and blocked rotor test on an induction motor.

14. Explain the following speed control methods of 3-ϕ Induction Motor .
    i) By changing the supply frequency
    ii) By Cascade connection

15. Explain the operation of Rotor resistance starter with diagram.

16. a) Explain with the help of power flow diagram, how electrical input is converted into mechanical power output in an Induction motor.
    b) The rotor resistance and standstill reactance per phase at a 3-phase slip-ring induction motor are 0.02Ω and 0.1Ω respectively. What should be the value of the external resistance per phase to be inserted in the rotor circuit to give maximum torque at starting?

17. a) Explain why a single phase induction motor is not self – starting motor.

    b) Explain the method for reversal of rotation of single phase induction motor

18. Explain the construction and working principle of Universal motor with neat diagram.