



(Pages : 2)

2696

Reg. No. :

Name :

**Eighth Semester B.Tech. Degree Examination, April 2015
(2008 Scheme)**

08.806 Elective V (i) : SPECIAL ELECTRICAL MACHINES (E)

Time : 3 Hours

Max Marks : 100

PART – A



Answer **all** questions :

1. Explain the principle of operation of an AC Servomotor.
2. What are the methods for reducing the step angle in a stepper motor ?
3. Draw the torque-slip characteristics of a hysteresis motor.
4. Compare switched reluctance motor and a conventional reluctance motor.
5. Discuss the advantages and disadvantages of Brushless DC motors.
6. Mention two applications of hysteresis motor.
7. Compare the conventional induction motor with linear induction motor.
8. Calculate the stepping angle for a 3- ϕ , 24 pole, PM Stepper motor.
9. Why ac servomotors are preferred to dc servomotor ?
10. Discuss the major drawbacks of a switched reluctance motor. **(10 \times 4=40 Marks)**

PART – B

Answer **one full** question from **each** Module :

MODULE – I

11. a) Discuss the family of torque speed curves of an ac servomotor for various Values of control Voltage.
b) Compare armature and field controlled DC servomotor.

P.T.O.



12. a) Explain the constructional details and working principle of a permanent magnet stepper motor.
- b) Compare the performance of different types of stepper motor.

MODULE – II

13. a) Discuss how the rotor material is selected in Hysteresis motors.
- b) Develop the torque equation and hence show the variation of torque with slip in a hysteresis motor.
14. a) Derive the expression for torque developed in a switched reluctance motor.
- b) Develop the torque slip characteristics of a reluctance motor.

MODULE – III

15. a) Explain the working of a brushless dc motor. Discuss the applications of Brushless DC motor.
- b) Compare the different types of Brushless DC motors.
16. a) Describe the working of Linear Induction motor and mention the applications.
- b) Explain the end effects in a Linear induction motor. **(20×3=60 Marks)**