EEM41 Electrical Machines - II

757

REG. NO

OCTOBER 2021

Time: Three hours Maximum Marks: 75

Note:
1. Answer ALL the questions in PART-A (1 mark each)
2. Answer any ONE question from each unit in PART-B (3 marks each)
3. Answer any ONE question from each unit in PART-C (10 marks each)
4. The question paper contains TWO Pages

PART-A (1x10=10)

1. What is hunting is alternator?
2. Define slot angle.
3. What is effective armature resistance?
4. What is synchronization of alternators?
5. What is meant by crawling in induction motor?
6. What type of starter is suitable for three phase slip ring induction motor?
7. What is the use of damper winding in synchronous motor?
8. What will be the power factor when the synchronous motor is over excited?
9. Which special type of motor has rotor movements in discrete steps?
10. State any one application of AC servo motor.

PART-B (3x5=15)

UNIT-I

11. State the advantages of rotating field system in alternator.
12. Derive distribution factor in an alternator.

UNIT-II

13. What are the effects of armature reaction in alternator?
14. Draw the circuit diagram for open circuit test of 3 phase alternator.

UNIT-III

15. Compare squirrel cage induction motor and slip ring induction motor.
16. What is meant by cogging in 3 phase induction motor and how it is prevented.

UNIT-IV

17. Explain why synchronous motor is not self-starting.
18. Draw the diagram of capacitor start and capacitor run induction motor.

UNIT-V

19. Define step angle.
20. Write the applications of permanent magnet synchronous motor.

PART-C (10x5=50)

UNIT-I

21. Explain briefly the construction of salient pole rotor of an alternator.
22. Explain the methods of obtaining sine wave in salient pole alternator with neat sketches.

UNIT-II

23. Explain armature reaction in alternator for various power factor loads.
24. Explain briefly the synchronizing of two three phase alternators by bright lamp method.

UNIT-III

25. Explain speed control of cascading method of two induction motors.
26. Explain with neat diagram by working of rotor resistance starter.

UNIT-IV

27. Explain the construction and working principle of split phase induction motor.
28. Explain V curve and inserted V curve of synchronous motor.

UNIT-V

29. Explain the construction and working principle of variable reluctance stepper motor.
30. Explain the construction & working principle of DC servo motor.

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