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Register No.:

April 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B

(2) Answer division (a) or division (b) of each question in PART - C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. Mention the types of alternator.
2. Define slot angle.
3. What is synchronous reactance?
4. Mention the methods used for synchronisation.
5. What type of starter is suitable for 3ϕ slip ring induction motor?
6. What is meant by crawling in induction motor?
7. Single phase induction motor is not self starting. Why?
8. What is meant by step angle in stepper motor?

PART – B

9. Calculate the pitch factor for a winding whose coil span is 150°.
10. Compare salient pole and non-salient pole rotor.
11. What are the reasons for change in terminal voltage in alternators?
12. What are the conditions to be fulfilled for parallel operation of alternators?
13. Compare squirrel cage induction motor and slip ring induction motor.
14. What is the use of circle diagram?
15. How to make the single phase induction motor self start?
16. Mention the few applications of stepper motor.

[Turn over.....

PART – C

17. (a) Explain the stator and rotor constructional details of salient pole alternator.

(Or)

(b) Why cooling is necessary for alternator? Explain any two methods of cooling of alternator.

18. (a) Explain briefly the synchronising of two 3ϕ alternators by dark lamp method.

(Or)

(b) Explain how to determine the regulation of alternator by synchronous impedance method.

19. (a) Explain the slip-torque characteristics of a 3ϕ induction motor.

(Or)

(b) Explain the working of DOL starter with diagram.

20. (a) Explain the construction and working principle of split phase induction motor.

(Or)

(b) Explain 'V' curve and inverted 'V' curve of synchronous motor.

21. (a) Explain the construction, performance and applications of permanent magnet synchronous motor.

(Or)

(b) Explain the construction and working of variable reluctance stepper motor.
