Register No.: [ ]

487

April 2023

Time – Three hours
(Maximum Marks: 100)

N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.
2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.

PART – A

1. Define pole pitch and coil span.
2. Calculate the pitch factor for a winding whose coil span is 150°.
3. What are the conditions to be satisfied for parallel operation of alternators?
4. Draw the schematic diagram for synchronization of alternators using synchronoscope method.
5. Write the necessity for starters in 3Ø induction motors.
6. What is crawling? How is it reduced?
7. What are the merits and demerits of shaded pole motor?
8. How a three phase motor is operated using a single phase supply?
9. What is meant by static balancing?
10. List the classification of cage motor.

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PART – B

11. (a) Explain the stator and rotor construction details of a cylindrical alternator.

(Or)

(b) (I) Explain the types of armature winding used in alternators. (7)
(II) State the differences between salient pole rotor and cylindrical rotor. (7)

12. (a) (I) Explain the load characteristics of an alternator for different power factors. (7)
(II) Explain the reasons for change in the terminal voltage of alternators. (7)

(Or)

(b) How regulation of alternator is determined by conducting direct load test? Explain.

13. (a) Explain the principle of operation of 3 phase induction motors.

(Or)

(b) Draw and explain the phasor diagram of a 3 phase induction motor.

14. (a) Explain the construction, working and speed torque characteristics of a repulsion start induction motor.

(Or)

(b) Explain the principle of operation of synchronous motor.

15. (a) What are the points to be attended during annual maintenance of induction motors.

(Or)

(b) Explain the causes for the troubles that occurs in an induction motor.
