

October 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. What is double layer winding?
2. Define pitch factor.
3. What is leakage reactance in alternator?
4. What is synchronous impedance?
5. What is slip frequency?
6. What type of starter is suitable for three phase slip ring induction motor?
7. State the applications of synchronous motor.
8. State the application of AC servo motors.

PART – B

9. Explain the effect of distribution factor.
10. A three phase alternator has 16 poles, 50Hz. Calculate the synchronous speed of the alternator.
11. What are the effects of armature reaction on alternator?
12. State the applications of synchros?
13. Derive the relation between slip and slip frequency.
14. What is meant by cogging in three phase induction motor and how is it prevented?
15. Compare synchronous motor and three phase induction motor.
16. What is meant by alternator on infinite bus bar?

[Turn over.....]

PART – C

17. (a) Derive an expression for EMF of alternator.

(Or)

- (b) Explain the methods of obtaining sine wave in salient pole alternator.

18. (a) Explain the armature reaction in alternator for various power factor loads.

(Or)

- (b) Explain briefly the synchronising of two three phase alternators by bright lamp method.

19. (a) Explain with a neat diagram about working of rotor resistance starter.

(Or)

- (b) Explain the speed control of three phase induction motor by pole changing method.

20. (a) Explain the construction and working of universal motors.

(Or)

- (b) Explain how the power factor is improved by using synchronous motor.

21. (a) Explain the construction and working of linear induction motor.

(Or)

- (b) Explain the construction and working of permanent magnet DC motor.
