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Question Paper Code: 34302

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Fourth Semester

Electrical and Electronics Engineering

01UEE402 - AC MACHINES

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. List the application of synchronous induction motor.

2. List the various losses in an induction motor.

3. Why starter is necessary for the induction motor?

4. Define crawling.

5. Define distribution factor.

6. What is meant by armature reaction?

7. Define hunting.

8. A 50 *kW*, 400 *V*, three phase induction motor is operated at full load with a efficiency of 92%. If field current is adjusted to make its power factor 0.8 leading, estimate the armature current.

9. Why does single phase induction motor is not self starting?

10. What is universal motor?

PART - B (5 x 16 = 80 Marks)

11. (a) With a neat sketch explain the construction details of three phase induction motor. (16)

Or

(b) Draw the torque-slip characteristics of a three phase induction motor at different rotor resistances. (16)

12. (a) Describe with neat diagram, the principle and working of an Auto transformer starter in three phase induction motor. (16)

Or

(b) Explain any two speed control method of three phase induction motor. (16)

13. (a) List the methods for determining voltage regulation and explain any one in detail. (16)

Or

(b) (i) Derive the EMF equation of an alternator. (8)

(ii) Describe the method of synchronizing the three phase alternator to the infinite bus giving the relevant circuit diagram. (8)

14. (a) (i) Explain the working principle and operation of synchronous motor. (8)

(ii) Explain the various methods of suppressing hunting. (8)

Or

(b) (i) With neat sketch explain the V curve and inverted V curve. (10)

(ii) Explain current loci for constant power input and constant excitation. (6)

15. (a) (i) Explain linear induction motor. (8)

(ii) Explain the working principle of single phase induction motor. (8)

Or

(b) Write a short note on the following:

(i) Reluctance motor (8)

(ii) Hysteresis motor (8)

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