PVP 14

Code: EE4T2

II B.Tech - II Semester – Regular/Supplementary Examinations – April 2017

ELECTRICAL MACHINES-II
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22

1.

a) Does eddy current loss of a Transformer depends on the applied voltage?
b) In what type of Transformer sandwich coils are used? What advantages are gained by the use of sandwich coils?
c) Where may auto-Transformer be used?
d) What advantage has the star-connection over the delta connection?
e) Why an induction motor is called a rotating Transformer?
f) Compare the self exited induction generator with externally exited induction generator.
g) What are the losses occurring in an induction motor and on what factor do they depends?
h) What is the need of starter for induction motor?
i) Why speed control by changing the applied voltage is simpler? Explain.

j) Explain why a single-phase induction motor is not self starting?

k) What could be the reasons if a split-phase motor runs too slow?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the working of a transformer at no-load condition. 8 M

b) A 500KVA transformer has an efficiency of 95% at full load and also at 60% of full load; both at VPF. 8 M

i) Separate out the losses of the Transformer.

ii) Determine the efficiency of the Transformer at ¾ full-load.

3. a) Explain the conditions in detail that must be fulfilled for the satisfactory parallel operation of two single phase transformer. 10 M

b) Two transformers connected in open delta supply a 400 kVA balanced load operating at 0.866 pf (lag). The load voltage is 440V. What is the kVA supplied by each transformer 8KW supplied by each transformer? 6 M

4. a) Derive an expression for the Torque of an induction motor and obtain the condition for maximum Torque. 8 M

b) Write a brief note on double cage induction motor. 8 M

5. a) Explain the rotor rheostat control of 3-phase slip ring induction motor. 8 M

b) Discuss the theory of star-delta starter. 8 M

6. Write a short notes on the following

a) Shaded pole induction motor. 8 M

b) Capacitor start and run 1-phase induction motor. 8 M