Diploma 3rd Semester Examination
June-2014
Subject – Basic of Electrical Machines
Subject Code: EEL - 039

Time Allowed: 03 hours. Maximum Marks: 100

Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Question No. 1 is Compulsory and attempt two questions from each section. All questions carry equal marks.

1(a) Define the term efficiency for transformer. Why the efficiency of transformer is higher than other rotating electrical machines?
(b) Give their applications of various type of DC Motor.
(c) Why 3-φ induction motor is most widely used in industries.
(d) Differentiate between salient and non salient type rotor of synchronous machines. (4x5)

SECTION-A

2(a) what are the various types of losses in transformer? How these losses can be minimized? (8)
(b) Write a short note on the followings
   i) Potential Transformer
   ii) Construction of a Transformer.

3(a) Explain the working principle of DC motor. (10)
(b) Explain the characteristics of a various types DC motor. (10)

4(a) what are the type of induction motor rotor & differentiate them. (10)
(b) A 3-Φ induction motor having 6 pole & is supplied from a 50 Hz system. Calculate Synchronous speed, actual speed and frequency of induced emf in the rotor when running at 4% slip. (10)

SECTION-B

5(a) Differentiate between synchronous and induction motor. (10)
(b) Write a short on synchronous condenser. (10)

6(a) Explain the construction and working of stepper motor. Also write down the applications. (10)
(b) Explain the construction and working of split phase induction motor. (10)

7(a) Write a short note on the following
   i) Electric arc furnace.
   ii) Dielectric heating.
   (b) Explain Induction heating & its characteristics also. List the applications of Induction heating. (8)