No. of Printed Pages : 3

BIEE-028

02275

ADVANCED LEVEL CERTIFICATE COURSE IN ELECTRICAL ENGINEERING/DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING (DELVI/ACELVI)

Term-End Examination
June, 2012

BIEE-028 : ELECTRICAL MACHINE THEORY-II

Time : 2 Hours *Maximum Marks : 70*

Note : *Attempt **any** 4 questions out of 2 to 8. Q.1 is **compulsory**. Use of Scientific Calculator is **allowed**.*

1. State ***True / False*** **2x7=14**

(a) Synchronous machine is a doubly excited ac machine. (T/F)

(b) Induction motor cannot run at synchronous speed. (T/F)

(c) Single phase induction motor are self starting. (T/F)

(d) The direction of shaded pole motor can be reversed. (T/F)

(e) Tangent drawn to the open circuit characteristic of synchronous machine is Air Gap line. (T/F)

(f) Steam turbine has normally high rotating speed. (T/F)

(g) A coil consist of two turn. (T/F)

2. (a) State power flow diagram of/an induction motor. 7

(b) Draw Torque Slip characteristics of Induction Motor. 7

3. A delta connected, 6 pole, 50Hz, 3 phase induction motor has a rotar resistance of 0.15 Ω / phase and exerts maximum torque at 880 rpm. Calculate the percentage maximum torque that would be exerted : 14

(a) at stand still

(b) at 940 rpm.

4. (a) Explain why a three phase induction motor is self starting by three phase synchronous motor is not self starting. 7

(b) Find the distribution factor in a 4-pole, 3 phase, 36 slots alternator. 7

5. Explain principle of single phase induction motor, split phase induction motor, Capacitor start and Capacitor run motor with construction characteristics. 14

6. Name the methods of speed control of 3-phase induction motors. Explain any two methods in detail. 14

7. Explain the term coil span factor and distribution factor in connection with alternator armature winding and deduce the emf equation of an alternator in corporating the effects of these factors. **14**

8. Attempt ***any four*** of the following : **3.5x4=14**

(a) Linear Induction Motor

(b) Stepper motor

(c) Servo Motor

(d) Transient and subtransient reactances

(e) Pitch factor and Distribution factor

(f) Armature reaction in synchronous generators.