

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER - V • EXAMINATION – SUMMER-2014

Subject Code: 150802**Date: 17-06-2014****Subject Name: Electrical Machines****Time: 10:30 am to 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain swinburne's test in detail. **07**
(b) What is armature reaction? Explain in detail the phenomenon of armature reaction. **07**
- Q.2** (a) Differentiate Lap and Wave winding. **07**
(b) Explain scott connection. **07**
- OR**
- (b) Why transformers need to be connected in parallel? What are the conditions to be satisfied for parallel operation of transformers? **07**
- Q.3** (a) Explain blocked rotor and no load test on three phase induction motor. **07**
(b) What are the various methods for induction motor speed control? Explain any two methods in detail **07**
- OR**
- Q.3** (a) Why single phase induction motors are not self starting? Explain double field revolving theory. **07**
(b) Explain universal motor and shaded pole induction motor. **07**
- Q.4** (a) Explain the procedure to draw circle diagram. **07**
(b) With neat diagram describe operation of permanent magnet brushless DC motor. **07**
- OR**
- Q.4** (a) What is the principle of stepper motors? Explain its construction. **07**
(b) Explain the terms: (1) Coil Span (2) Pole pitch (3) Dummy coil **07**
- Q.5** (a) How V-curves for synchronous motors are obtained? What is its significance? **07**
(b) Explain power developed by synchronous motor. **07**
- OR**
- Q.5** (a) Draw the equivalent circuit of induction motor and explain in detail. **07**
(b) Describe the construction of three phase transformer. **07**
