

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-V EXAMINATION – WINTER 2015

Subject Code: 152404**Date:05/12/2015****Subject Name: Electro Mechanical Energy Conversion-II****Time: 10:30am to 1:00pm****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 the properties of magnetic materials. **07**
 (b) Explain Scott connection with necessary circuit diagram and vector diagram. **07**
- Q.2** (a) Explain blocked rotor test of three-phase induction motor. **07**
 (b) Explain in detail the construction of 3 phase transformer. Also mention its applications. **07**
- OR**
- (b) Explain construction and working principle of universal motor. **07**
- Q.3** (a) Explain the double field revolving theory of single –phase induction motor. **07**
 (b) Explain self starting of reluctance motor. Also mention its applications. **07**
- OR**
- Q.3** (a) Explain the construction and working of shaded pole induction motor. **07**
 (b) Explain the construction and working of hysteresis motor. **07**
- Q.4** (a) Explain speed control of synchronous motor. also mention its applications. **07**
 (b) Give the principle of synchronous motor and draw equivalent circuit of synchronous Motor. **07**
- OR**
- Q.4** (a) What is parallel operation of transformer? Why it is necessary? Also mention conditions for satisfactory operation of transformer in parallel. **07**
 (b) Discuss the effect of excitation on armature current and power factor in synchronous motor. **07**
- Q.5** (a) Explain the construction and working of PMBLDC motor. **07**
 (b) Explain in brief construction and working of switched reluctance motor. **07**
- OR**
- Q.5** (a) Compare linear induction machines and linear synchronous machines. **07**
 (b) Explain the importance of power electronics for advanced electrical machines. **07**