Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–II • EXAMINATION – SUMMER • 2014

Subject Code: X21101 **Date: 20-06-2014**

Subject Name: Electrical Engineering

Time: 10:30 am - 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 the DC servomotor construction and working. **[7]**
Q.1 (B) Explain construction and working of VR motor. **[7]**

Q.2 (A) Explain specifications of stepper motor and its applications in detail. **[7]**
Q.2 (B) Derive the equation of torque for the Induction Motor. **[7]**

OR

Q.2 (B) Enlist various measurement methods for slip and explain any one in detail. **[7]**

Q.3 (A) Explain the no load and load characteristics of DC Generator. **[7]**
Q.3 (B) Classify the DC generator and explain construction of it. **[7]**

OR

Q.3 (A) Explain speed torque characteristics of all types of DC Motors. **[7]**
Q.3 (B) What are the methods of starting of DC Motor? Explain any one in detail. **[7]**

Q.4 (A) Explain the construction and working principle of 1-ph Transformer. **[7]**
Q.4 (B) Classify the transformer with respect to construction. Explain any one in detail. **[7]**

OR

Q.4 (A) Explain OC & SC Test on the 1-ph Transformer. **[7]**
Q.4 (B) Derive the condition for the maximum efficiency of the Transformer. **[7]**

Q.5 (A) Explain the Capacitor start capacitor run 1-ph induction motor in detail. **[7]**
Q.5 (B) How is Universal motor constructed? **[7]**

OR

Q.5 (A) Explain the Voltage regulation of synchronous machines. **[7]**
Q.5 (B) Explain the phasor diagram for the synchronous motor with constant power and excitation. **[7]**

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