Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY

J	BE -	SEMESTER-VIII	(NEW)	- EXAMIN	ATION –	SUMMI	ŁR	2017
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Subject Code: 2180308 Date: 02/05/2017

**Subject Name: Electronics system Design(Department Elective - III)** 

Time: 10:30 AM to 01:00 PM Total Marks: 70

## **Instructions:**

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- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- **Q.1** (a) Explain servomotor construction with their applications. 07 (b) State Faraday's Law of Electromagnetic Induction. Explain the process of 07 electromechanical energy conversion. **Q.2** Explain basic of hybrid type stepper motors. 07 (a) Explain Half step and Micro Stepping operation of a stepper motor. **(b) 07** OR**(b)** Discuss the parameters that are necessary for evaluating rectifier performance. **07** Q.3 (a) Draw and explain construction of power BJTs. 07 (b) Explain working of IGBTs with internal construction. Enlist application of 07 IGBTs. OR Q.3Explain V-I characteristics of Thyristors. 07 (a) Explain turn On and turn Off methods of Thyristors. **(b)** 07 0.4 Explain principal of operation of pulse width modulated inverters. 07 Write a short note on class E resonant inverter. 07 Explain basic principle of step Up and step Down converter. **07 Q.4** (a) Discuss detail working operation of Buck-Boost regulator. **(b)** 07
  - (a) Explain categories of signal grounds.(b) Discuss any example of common impedance coupling and their effect.
- OR
  Q.5 (a) Explain effect of shield on capacitive coupling with the help of schematic. 07
  - (b) Define / explain following terms
    - Electromagnetic compatibility
    - Mutual inductance
    - Freewheeling diodes

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