

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII • EXAMINATION – SUMMER 2013****Subject Code: 180304****Date: 09-05-2013****Subject Name: Electronic System Design****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) State Faraday's Law of Electromagnetic Induction. Explain the process of electromechanical energy conversion. **07**
(b) Explain static & dynamic characteristics of SCR. **07**

- Q.2** (a) Explain two transistor model of SCR in detail. **07**
(b) What is commutation? Explain class B commutation with necessary waveform in detail. **07**

OR

- (b) Explain the construction & working of a Servomotor. **07**

- Q.3** (a) Enlist & explain the problem encountered during the series & parallel connection of SCR. **07**
(b) Explain series & parallel resonant inverter in detail. **07**

OR

- Q.3** (a) Explain the difference between a DC motor & Stepper motor. Also explain the advantages and disadvantages of a stepper motor. **07**
(b) Explain Half Step, Full Step and Micro Stepping operation of a Stepper motor. **07**

- Q.4** (a) Write a short note on Solenoid & Solenoid Valves **07**
(b) Explain class-E resonant inverter in detail. **07**

OR

- Q.4** (a) Write a detailed note on various drive circuits used for Stepper Motors **07**
(b) Explain Electromagnetic Compatibility & Electromagnetic Interference in detail. Also explain the basic difference between the two. **07**

- Q.5** (a) Write a short note on Electromagnetic & Solid State Relay. **07**
(b) Enlist & Explain the different types of power Diode, explain the performance parameter of power diode in detail. **07**

OR

- Q.5** (a) Enlist & Explain the control strategy of converter. explain the step up converter in detail **07**
(b) Write a short notes on **07**
1. Power MOSFET
2. IGBT
