

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII • EXAMINATION – WINTER • 2014

Subject Code: 180304**Date: 25-11-2014****Subject Name: Electronics System Design****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

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

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|------------|------------|---|-----------|
| Q.1 | (a) | Explain static & dynamic characteristics of SCR. | 07 |
| | (b) | Write a short note on two transistor model of SCR in detail. | 07 |
| Q.2 | (a) | Explain the different turn-on method of SCR in detail. | 07 |
| | (b) | Explain series and parallel inverter in detail. | 07 |
| OR | | | |
| | (b) | State the definition and importance of EMC. Explain different E field and H field coupling briefly. | 07 |
| Q.3 | (a) | Explain the working principle of PM step motor in detail. | 07 |
| | (b) | Write a short note on Power MOSFET. | 07 |
| OR | | | |
| Q.3 | (a) | Explain the working principle of VR step motor. | 07 |
| | (b) | Write a short note on IGBT. | 07 |
| Q.4 | (a) | Explain UPS as AC power supply. | 07 |
| | (b) | Explain Gate drive circuit of thyristors. | 07 |
| OR | | | |
| Q.4 | (a) | Draw & explain series & parallel connection of power diode. | 07 |
| | (b) | Explain the construction & working of a Servomotor. | 07 |
| Q.5 | (a) | Write a short note on Solenoid & Solenoid Valves | 07 |
| | (b) | What is step up chopper? Draw and explain the flux, current and voltage waveform for it. | 07 |
| OR | | | |
| Q.5 | (a) | Explain the step down chopper in detail. Derive the equation for its duty cycle. | 07 |
| | (b) | Draw & explain basic structure & operation of thyristors. | 07 |
