

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 151703****Date: 16-01-2013****Subject Name: Electronics in Industries****Time: 02:30 pm to 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.

- Q.1 (a)** Explain characteristics and structure of MOS Diode in detail with neat diagram **07**
- (b)** Explain full wave controlled bridge rectifier in detail with necessary diagrams and waveforms **07**
- Q.2 (a)** With neat sketch explain structure, symbol and v-I characteristics of Silicon Controlled Switch. **07**
- (b)** Enlist various turn on methods of thyristor. Explain dv/dt turn on in detail. **07**
- OR**
- (b)** Explain class C commutation technique for turning off a thyristor. **07**
- Q.3 (a)** Explain characteristics and structure of UJT in detail with neat sketch. **07**
- (b)** Explain characteristics of MOSFET with basic operation and internal structure. **07**
- OR**
- Q.3 (a)** Explain LASCR in detail with its application. **07**
- (b)** Explain UJT firing circuit used to turn on thyristor in detail. **07**
- Q.4 (a)** Explain half wave controlled rectifier with R-L load in detail. **07**
- (b)** Explain six phase full wave controlled rectifier with its waveforms in detail. **07**
- OR**
- Q.4 (a)** Explain characteristics of TRIAC in detail with neat diagram. **07**
- (b)** Explain in detail snubber circuit and its use in thyristor protection. **07**
- Q.5 (a)** Explain IGBT structure and switching characteristics in detail. **07**
- (b)** Explain PUT. Also explain application of PUT firing circuit for thyristor. **07**
- OR**
- Q.5 (a)** Explain fast recovery diode in detail. How it differs from general purpose diode? **07**
- (b)** Explain the operation of two thyristor center tapped controlled rectifier with its input and output waveforms. **07**
