Seat No.: _____ Enrolment No._____

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**

****