

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER III (NEW)– • EXAMINATION – SUMMER 2015

Subject Code: 2132404**Date: 27/05/2015****Subject Name: Principles of Power Electronics****Time: 02.30pm-05.00pm****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 Power Electronics System and Its Building Blocks and Components. **07**
(b) Give difference between Linear Electronics and Power Electronics. **07**
- Q.2** (a) Explain V-I characteristics of semi conductor diodes. **07**
(b) What are the types of power diodes? Explain all. **07**
- OR**
- (b) Explain switching characteristics of diodes. **07**
- Q.3** (a) Explain construction of BJT. **07**
(b) Draw and Explain Input and Output characteristics of PNP transistor in CB configuration. **07**
- OR**
- Q.3** (a) Explain switching characteristics of BJT. **07**
(b) Differentiate between signal and power BJT. **07**
- Q.4** (a) Explain Gate Drive Circuit of power MOSFET. **07**
(b) Explain soft and Hard switching of Power BJT. **07**
- OR**
- Q.4** (a) What is the V-I characteristics of Thyristors?. **07**
(b) Explain Turn – On method of Thyristors. **07**
- Q.5** (a) What are the advantages and disadvantages of GTOs? **07**
(b) What are the advantages and disadvantages of SITHs? **07**
- OR**
- Q.5** (a) Explain Principle, construction and operation of Field Effect Transistor (FET). **07**
(b) Explain construction and working principles of Power MOSFET. **07**
