

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- Vth SEMESTER-EXAMINATION – MAY/JUNE - 2012****Subject code: 152405****Date: 07/06/2012****Subject Name: Power Electronics Applications****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.

- Q.1** (a) Draw & explain Basic Building Block of Power Electronics System. **07**
(b) Write a short note on UPS – Uninterruptable Power Supply. **07**

- Q.2** (a) Draw & Explain V-I Characteristic of Power MOSFET. **07**
(b) Explain fly-back converter with necessary diagrams. **07**

OR

- (b) Explain forward converter with necessary diagrams. **07**

- Q.3** (a) Explain two-transistor analogy of a thyristor with necessary diagrams. **07**
(b) State different types of heating process. Explain Induction Heating in Brief. **07**

OR

- Q.3** (a) Define 1) Holding Current **07**
2) Latching Current
(b) Enlist different application of Di-electric Heating. **07**

- Q.4** (a) Draw single phase full converter DC Motor drive with necessary waveforms. **07**
(b) Write a short note – HVDC Transmission. **07**

OR

- Q.4** (a) Explain single phase induction motor drive. **07**
(b) Enlist different Non-Conventional energy sources utilized in power electronics. Discuss any one in brief. **07**

- Q.5** (a) Draw & explain single phase Bridge converter with R-L Load with $\alpha = 30^\circ$. **07**
(b) Discuss Electronic Fan Regulator with suitable diagrams. **07**

OR

- Q.5** (a) Draw & explain Full bridge inverter with R-L load. **07**
(b) Discuss in brief: DC Electric Traction System. **07**
