

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. Vth Semester–Examination – Nov-Dec- 2011****Subject code: 152405****Subject Name: Power Electronics Applications****Date: 03/12/2011****Time: 02:30 pm – 05:30 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 full-wave bridge controlled rectifier with necessary waveforms for R-L load. **07**
(b) Enlist the various domestic application of Power Electronics. Explain any one with neat diagram. **07**
- Q.2** (a) Discuss merits and demerits of drives. Also explain any one application in detail. **07**
(b) Write short note on IGBT – construction, working, characteristics. **07**
- OR**
- (b) State the construction and working of Power Transistor **07**
- Q.3** (a) Write a short note on Buck regulator. **07**
(b) What is HVDC? Explain with suitable block diagram. **07**
- OR**
- Q.3** (a) With necessary waveforms discuss cyclo-converter. **07**
(b) Enumerate the various commutation technique used for Thyristor. **07**
- Q.4** (a) State and discuss the principle of die-electric heating. **07**
(b) Explain Battery Operated Vehicle. **07**
- OR**
- Q.4** (a) Enlist various types of welding. Explain any two in details. **07**
(b) Explain the principle of induction heating. **07**
- Q.5** (a) Classify UPS. Discuss any one type with block diagram. **07**
(b) Differentiate: Static circuit breaker – Mechanical circuit breaker. **07**
- OR**
- Q.5** (a) Draw block diagram of SMPS. Explain each block in detail. **07**
(b) Discuss following terms with electric traction. **07**
1)Notching 2)Accelerating 3)Free running
4)Braking 5)Retarding
