

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE- VI<sup>th</sup> SEMESTER – EXAMINATION – MAY- 2012****Subject code: 162405****Date: 19/05/2012****Subject Name: Power Processing Circuit - I****Time: 10:30 am – 01:00 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)** Enlist different types of AC - DC Power Supply. Explain any one type in brief. **07**

**(b)** Explain 1-phase Controlled rectifier with R-L Load with suitable diagrams, take  $\alpha = 45^\circ$ . **07**

**Q.2 (a)** Differentiate Linear regulated Power Supply - Switch Mode Power supply. **07**

**(b)** Discuss the effect of Current Commutation on line Inductance. **07**

**OR**

**(b)** Enlist different types of filter used for Linear regulated power supply. Explain any one in brief with necessary diagrams. **07**

**Q.3 (a)** Discuss voltage & current waveforms for 1 – phase Uncontrolled rectifier with R Load. **07**

**(b)** Draw the circuit of Buck converter & explain it with necessary waveforms. **07**

**OR**

**Q.3 (a)** Draw & Discuss voltage & current waveforms for 1 – phase Uncontrolled rectifier with RL Load. **07**

**(b)** Draw the circuit of Boost converter & explain it with necessary waveforms. **07**

**Q.4 (a)** Explain the circuit diagram of Flyback converter with necessary waveforms. **07**

**(b)** Discuss the working principle of Morgan's chopper with necessary diagrams. **07**

**OR**

**Q.4 (a)** Explain the circuit diagram of Push - Pull converter with necessary waveforms. **07**

**(b)** Discuss the working principle of John's chopper with necessary diagrams. **07**

**Q.5 (a)** What is resonant condition? Explain Zero Current Switching converter with necessary diagrams. **07**

**(b)** Explain the basic principal of step up chopper. **07**

**OR**

**Q.5 (a)** Describe Zero voltage switching converters with necessary diagrams. **07**

**(b)** Write a short note on **07**

1. Class D chopper
2. Class E chopper.

\*\*\*\*\*