

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (OLD) EXAMINATION – WINTER 2018****Subject Code:162405****Date: 07/12/2018****Subject Name: Power Processing Circuits - I****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)** Differentiate Linear regulated Power Supply - Switch Mode Power supply. **07**

**(b)** Explain 1-phase Controlled rectifier with R-L Load with suitable diagrams. **07**

**Q.2 (a)** Draw line side and load side voltage and current waveforms of 3-Phase uncontrolled rectifiers with purely resistive load and explain. **07**

**(b)** Give the comparison of ZVS and ZCS. **07**

**OR**

**(b)** Describe the modeling of a controlled rectifier. **07**

**Q.3 (a)** Discuss Class B type chopper. **07**

**(b)** Describe various control strategies for chopper circuit. **07**

**OR**

**Q.3 (a)** Draw the circuit of Boost converter & explain it with necessary waveforms. **07**

**(b)** Explain Morgan's chopper with necessary circuit diagram and waveforms. **07**

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

**(b)** Describe operation of a Sepic converter. State its advantages. **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)** Explain the basic concept of resonant switch converter circuit. **07**

**(b)** Discuss any one FOUR terminal IC based voltage regulator. **07**

**OR**

**Q.5 (a)** Write short note on: - Class C type chopper. **07**

**(b)** Define following terms with necessary diagrams **07**

(1) Firing Angle

(2) Overlap angle

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