

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER • 2014****Subject Code: 152403****Date: 19-06-2014****Subject Name: Applied Power Electronics****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.
4. Notations used have usual meaning.

- Q.1** (a) What is Power Processing? Explain with neat block diagram. **07**
(b) Draw and explain following signal processing circuits. **07**
(i) Precision rectifier
(ii) Peak detector
- Q.2** (a) Write a short note on battery charging methods. **07**
(b) Describe basic principle of induction heating. Discuss its applications. **07**
OR
(b) Explain working of basic DC to DC converter circuit with its application. **07**
- Q.3** (a) Explain digital to analog converter with suitable example. **07**
(b) Discuss state variable filter circuit. Where it is used? **07**
OR
- Q.3** (a) Explain controlled rectifier as basic power modulator with merits and demerits. Where it is used? **07**
(b) Explain the concept of HVDC transmission with neat diagram. **07**
- Q.4** (a) What is an active filter circuit? Discuss low pass active filter with its frequency response. **07**
(b) Explain working of un-interrupted power supply (UPS) with block diagram. **07**
OR
- Q.4** (a) Explain working principle of DC drive with neat block diagram. **07**
(b) Discuss electroplating as an industrial application. **07**
- Q.5** (a) With suitable example, explain how solution of simultaneous equation can be obtained? **07**
(b) What is PLL? Explain working principle of PLL with neat diagram. **07**
OR
- Q.5** (a) Write a brief note on high frequency fluorescent lighting. **07**
(b) Explain voltage to frequency converter circuit. **07**
