

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-V • EXAMINATION – SUMMER • 2015**

**Subject Code: 152403****Date: 11/05/2015****Subject Name: Applied Power Electronics****Time: 02.30pm-05.00pm****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) Define Simulation. Compare the circuit oriented simulator and equation solver methods. **07**
- (b) Define Electrical Motor Drive. Draw and Explain block diagram of electric motor drive system. **07**
- Q.2** (a) Draw and explain solution of simultaneous equation using OPAMP. **07**
- (b) Write Technical Note on: PWM Technique. **07**
- OR**
- (b) Define PLL. Explain working and application of PLL using necessary block diagram. **07**
- Q.3** (a) Write Technical Note on: Switched Capacitor Filter Circuit. **07**
- (b) Define Rectifier. Explain basic power diagram, working, advantage, disadvantage and application of it. **07**
- OR**
- Q.3** (a) Write Technical Note on: State Variable Filter Circuit. **07**
- (b) What is cycloconverter ? Explain Basic block diagram, advantage, disadvantage, and application of it. **07**
- Q.4** (a) Explain concept and working of HVDC Transmission. **07**
- (b) Explain different charging method of battery and explain one charging circuit of battery with necessary diagram. **07**
- OR**
- Q.4** (a) Explain interconnection of renewable energy sources and energy storage system to the utility grid. **07**
- (b) Define UPS. Explain the classification of it and also explain working of UPS with necessary block diagram. **07**
- Q.5** (a) Define Induction Heating. Explain equipment of induction heating using block diagram. **07**
- (b) Explain induction cooking with necessary block diagram. **07**
- OR**
- Q.5** (a) Define Die-electric Heating. Explain equipment of die-electric heating using block diagram. **07**
- (b) Explain Fan Regulator using necessary circuit diagram and waveform. **07**

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