

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (Old) EXAMINATION – WINTER 2019****Subject Code: 172403****Date: 28/11/2019****Subject Name: Power Processing Circuits - II****Time: 10:30 AM TO 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) List and explain the performance parameters of inverter. **07**  
(b) Explain principle of operation of inverter. Classify them and give applications **07**
- Q.2** (a) Explain the working of full bridge inverter with neat diagram and waveforms. **07**  
(b) What is Multi Level Inverter? Explain their need briefly. Give applications. **07**
- OR**
- (b) Explain the working of Flying Capacitor Multi Level Inverter (FC-MLI) **07**
- Q.3** (a) Explain  $120^\circ$  conduction mode operation of inverter. **07**  
(b) Explain the difference between square wave and quasi square wave operation of inverter. **07**
- OR**
- Q.3** (a) Explain  $180^\circ$  conduction mode operation of inverter. **07**  
(b) What do you mean by resonant converters? Explain ZVS resonant inverter. **07**
- Q.4** (a) Explain input side control techniques of inverter. **07**  
(b) List different types of PWM techniques for control of inverter. Explain any one. **07**
- OR**
- Q.4** (a) Explain output side control techniques of inverter. **07**  
(b) Explain the concept of Triplen Harmonic Injection with its advantages. **07**
- Q.5** (a) Classify AC voltage controllers. List and explain its performance parameters. **07**  
(b) State the advantages and applications of Active Front End Rectifiers. **07**
- OR**
- Q.5** (a) Explain Integral Cycle Control of AC-Ac controllers. **07**  
(b) List different types of batteries. Explain in brief their methods of charging. **07**

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