Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(OLD) • EXAMINATION – WINTER 2016

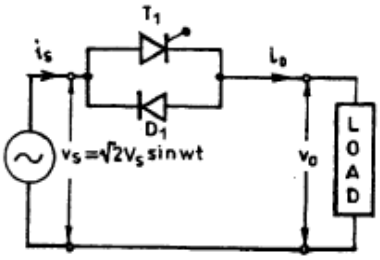
Subject Code: 172403 **Date: 23/11/2016**

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.**
4. **Notations/ symbols used have usual meanings.**

Q.1	**(a)**	Explain following terms w.r.t.an inverter:- Performance parameters, applications, limitations.	**07**
	(b)	Why battery is required? Enlist various methods for battery charging and explain any one in detail.	**07**
Q.2	**(a)**	Describe the operation of a parallel resonant pulse inverter in detail.	**07**
	(b)	 Fig 1 Analyze the working of circuit shown in Fig1.	**07**
		OR	
	(b)	With waveforms, explain the operation of a 1-Ø to 1-Ø cyclo-converter.	**07**
Q.3	**(a)**	Discuss Trapezoidal PWM technique for inverter control.	**07**
	(b)	Explain diode clamped multi-level inverter in brief.	**07**
		OR	
Q.3	**(a)**	Describe input side voltage control technique for inverter using un-controlled rectifier and chopper.	**07**
	(b)	Explain cascaded H – bridge multi-level inverter in brief	**07**
Q.4	**(a)**	Discuss the Phase angle control. w.r.t AC controller.	**07**
	(b)	Write short note on :- Active front-end rectifier.	**07**
		OR	
Q.4	**(a)**	With waveforms, explain the operation of a 3-Ø cyclo-converter.	**07**
	(b)	Write short note on :- Single phase static switch.	**07**
Q.5	**(a)**	Explain the basic principle of operation of an off-line UPS.	**07**
	(b)	Give circuit analysis of CSI with resistive load.	**07**
		OR	
Q.5	**(a)**	Discuss utility of A-H rating of a battery.	**07**
	(b)	Discuss Triplen harmonic injection technique for inverter control.	**07**

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