Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2162409 **Date:11/05/2016**

Subject Name: Power Electronic 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)**	Write A detailed Note On: - AC Voltage Regulator.	**07**
	(b)	Describe working of active front end rectifier. Discuss effect of source inductance on input current waveform.	**07**
Q.2	**(a)**	Explain Square wave & Quasi Square wave Inverter in Details.	**07**
	(b)	What is THD? Explain in detail the concept of Dead band and its importance.	**07**
		OR	
	(b)	Compare 1-phase and 3-phase voltage controllers in tabular form.	**07**
Q.3	**(a)**	Write a technical note on: - different methods of Inverter control.	**07**
	(b)	Write a short note on SVPWM.	**07**
		OR	
Q.3	**(a)**	Compare voltage mode and current mode internal control techniques w.r.t. Inverter.	**07**
	(b)	What is PWM? Explain unipolar SPWM technique. Also compare it with bipolar SPWM technique.	**07**
Q.4	**(a)**	Define the term harmonic. State demerits of it & discuss selective harmonic elimination scheme in brief.	**07**
	(b)	Explain L-type ZCS resonant converter with circuit diagram and waveforms.	**07**
		OR	
Q.4	**(a)**	Define parallel resonance. Explain the concept of parallel resonant inverter circuit with required diagrams.	**07**
	(b)	Explain the McMurray-Bedford half-bridge inverter with circuit diagram and Waveforms.	**07**
Q.5	**(a)**	Draw & explain basic series inverter circuit employing load commutation. State limitation of this series inverter.	**07**
	(b)	Explain five-level flying capacitor multilevel inverter with circuit diagram and waveforms.	**07**
		OR	
Q.5	**(a)**	Explain applications of multilevel inverter as active & reactive power Compensation.	**07**
	(b)	Explain 3 level diode clamped multilevel inverter (DCMLI) with necessary diagrams. Also write merits & demerits of it.	**07**

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