Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II(New course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 2722910 **Date: 08/12/2015**

Subject Name: Power Converters-II

Time:2:30 pm to 5:00 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)**	Explain basic concept of soft switching. Describe ZCS type Buck converter with neat diagram and appropriate waveforms.	**07**
	(b)	Explain working operation of Single-Switch Forward Converter with neat diagram and appropriate wave.	**07**
Q.2	**(a)**	Explain Diode clamp type multilevel converter circuit.	**07**
	(b)	Write a short note on high frequency isolation transformer used in DC-DC converter.	**07**
		OR	
	(b)	Describe working operation of Fly back converter.	**07**
Q.3	**(a)**	Discuss the working principle of The Matrix Converter for power electronics circuits.	**07**
	(b)	Write a short note on PWM technique for matrix converter.	**07**
		OR	
Q.3	**(a)**	Discuss the basic concept of multi pulse converter. Explain working of 24 pulse converter with neat diagram.	**07**
	(b)	Explain how averaged model is generated for buck type dc-dc converter.	**07**
Q.4	**(a)**	Discuss parallel resonant circuit for load resonant inverter.	**07**
	(b)	Describe working of capacitor clamped multilevel inverter circuit,	**07**
		OR	
Q.4	**(a)**	What is need of small signal model? Explain small signal model of a converter circuit.	**07**
	(b)	Discuss various transformer connections for multi-pulse converter.	**07**
Q.5	**(a)**	Discuss about the power electronics switches used in Matrix converter.	**07**
	(b)	Explain PI controller with suitable example.	**07**
		OR	
Q.5	**(a)**	Write note on hysteresis control for the controller.	**07**
	(b)	Explain the average modeling of boost type DC-DC converter circuit.	**07**

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