Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– I (New course)• REMEDIAL EXAMINATION – SUMMER 2015

Subject Code: 2714505 **Date:16/05/2015**

Subject Name: Power Conditioning

Time: 10:30 am to 1:00 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)**	Compare static condenser with synchronous condenser. Explain the static condenser in details with diagram.	**07**
	(b)	Discuss various power conditioners in details and state their limitations.	**07**
Q.2	**(a)**	Explain the operation of fly back converter with the required diagram and waveform.	**07**
	(b)	Compare voltage mode control and current mode control of SMPS.	**07**
		OR	
	(b)	Compare series and shunt active filters.	**07**
Q.3	**(a)**	With block diagram and control algorithm, explain shunt active filters used for sinusoidal current control.	**07**
	(b)	Explain the PFC converters utilizing DCM operation.	**07**
		OR	
Q.3	**(a)**	Describe PWM converter topology for three phase four wire shunt active filter with necessary block diagram.	**07**
	(b)	Describe Selective Harmonics Elimination Modulation Technique.	**07**
Q.4	**(a)**	Draw and Explain the block diagram of design of SMPS.	**07**
	(b)	Differentiate on-line and off-line Uninterrupted Power Supply (UPS).	**07**
		OR	
Q.4	**(a)**	State the advantages and disadvantages of coreless type induction heating. Also explain the working of coreless type induction heating.	**07**
	(b)	Write a short note on Harmonic Standards.	**07**
Q.5	**(a)**	Discuss harmonic distortion limit as per IEEE-519:1992.	**07**
	(b)	Explain the operation of power supply for steel camera.	**07**
		OR	
Q.5	**(a)**	Explain the basic operation of DSP control of active power filter.	**07**
	(b)	Write a short note on surge suppressors.	**07**

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