Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII(NEW) EXAMINATION – SUMMER 2019

Subject Code: 2170906 Date: 10/05/2019

Subject Name: Advanced Power Electronics

Time: 02:30 PM TO 05:00 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 switching voltage regulator with linear voltage regulator.	**03**
	(b)	Explain half bridge converter.	**04**
	(c)	Discuss operation of Buck converter in continuous and discontinuous mode.	**07**
Q.2	**(a)**	Explain boost switching regulators.	**03**
	(b)	Explain fly back converter.	**04**
	(c)	Discuss operation of Push pull converter type switched mode dc power supply along with necessary waveforms.	**07**
		OR	
	(c)	Explain zero current switching resonant converters.	**07**
Q.3	**(a)**	Explain different types of HVDC link.	**03**
	(b)	Give comparison of HVAC and HVDC transmission.	**04**
	(c)	Discuss the equipments required for HVDC systems.	**07**
		OR	
Q.3	**(a)**	What is the need of resonant converter? Give Classification of resonant converters	**03**
	(b)	Give comparison between ZCS and ZVS.	**04**
	(c)	Explain zero voltage switching resonant converter.	**07**
Q.4	**(a)**	What is the importance of reactive power compensation?	**03**
	(b)	Give comparison of SVC and STATCOM.	**04**
	(c)	Explain the working principle of FC-TCR.	**07**
		OR	
Q.4	**(a)**	State the advantages of FACTS devices.	**03**
	(b)	State advantages and limitation of SSSC.	**04**
	(c)	Explain the working principle of TSC-TCR.	**07**
Q.5	**(a)**	What is the difference between isolated and non-isolated dc power supply.	**03**
	(b)	Discuss the principle of series compensation and state various methods for series compensation.	**04**
	(c)	Explain operating principal of STATCOM.	**07**
		OR	
Q.5	**(a)**	What is the application of Multipulse Converters?	**03**
	(b)	Explain operation of diode clamped multilevel inverter.	**04**
	(c)	Draw the transformer connections for 18 pulse converter. Explain Y-Z2 transformer connection used for multipulse converter.	**07**

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