Seat No.:	Enrolment No.

Subject Code:2730707

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER III (NEW) - EXAMINATION - SUMMER - 2017

Date:02/05/2017

Subject Name: Power Quality Issues and Their mitigation techniques in Power System				
Time: 02:30 pm to 05:00 pm Instructions: Total		2:30 pm to 05:00 pm Total Marks:	Marks: 70	
	2. 3.	Make suitable assumptions wherever necessary.		
Q.1	(a)	Explain the sinusoidal current control strategy for Three phase Three Wire Shunt Active Filter with necessary Block Diagram.	07	
	(b)	What is Power quality? Explain.	07	
Q.2	(a)	What are the harmonics issues involved in power electronics converters?	07	
	(b)	What is DVR? Explain with neat diagram its working principle. OR	07	
	(b)	What is D-STACOM? Explain with neat diagram its working principle.	07	
Q.3	(a) (b)	What is Distributed Generation (D.G.)? Explain any one type of D.G. in detail. What are the power quality standards? Discuss responsibilities of supplier and user of electrical power with respect to power quality. OR	07 07	
Q.3	(a) (b)	Discuss the effect of harmonics on AC Motors Drives. Explain different challenges against distributed generation.	07 07	
Q.4	(a) (b)	Discuss various aspects to be considered in the design of passive filters. Write the difference between Active and passive power filters. OR	07 07	
Q.4	(a) (b)	Discuss the Harmonic phase rotation and phase angle relationship. Discuss the Harmonic issues for phase controlled thyristors.	07 07	
Q.5	(a) (b)	Discuss significance of power factor correction with power quality point of view. Discuss the effect of harmonics on cables and transformers. OR	07 07	
Q.5	(a)	Define and technically describe following terms with suitable example: (1) Non Linear loads (2) Inrush current (3) Power factor (displacement) (4) Voltage sag (5) Transient	07	
	(b)	(i) Discuss the effect of harmonics on capacitors (ii) what is flicker.	07	
