	Se	at No.: Enrolment No	_	
		GUJARAT TECHNOLOGICAL UNIVERSITY M.E -II st SEMESTER-EXAMINATION - JULY- 2012		
	Su	ubject code: 1724505 Date: 12/07/20)12	
		bject Name: Power Quality		
		me: 10:30 am – 13:00 pm Total Marks:	70	
		structions:	. 0	
	4.1.1	1. Attempt all questions.		
		2. Make suitable assumptions wherever necessary.		
		3. Figures to the right indicate full marks.		
Q.1	(a)	Briefly discuss How harmonics will be produced by power electronics devices	07	
	(b)	Explain Transformer magnetization nonlinearities	07	
Q.2	(a)		07	
		a. resonant frequency of filter, Impedance Z offered by system, and Quality		
		factor		
		b. If same filter is used to filter out 5 th order harmonics, find filter capacitor if Lf		
		= 600 μ H, Impedance and Quality factor (System Freq = 50 Hz)		
		Ls Vo z		
		v _s + Z Z Z L Z L Z L Z Z Z Z Z Z Z Z Z Z Z		
		± 500 uH		
		C _f		
		0.01 ≷ R		
		<u></u>		
	(b)	Explain various effects of harmonics	07	
		OR		
	(b)	Explain series and parallel active filter	07	
Q.3	(a)	Explain Impact of reactive power management	07	
	(b)		07	
0.4	()	OR	^=	
Q.3	(a)	Discuss various causes of voltage flicker and their effects also suggest various means to reduce flickers	07	
	(b)	Explain Basic power flow and voltage drop in transmission line	07	
Q.4	(a)	Enlist Utility System Fault-Clearing Issues and Explain any Four	07	
QI	(b)	Explain Area of vulnerability	07	
	(,-)	OR		
Q.4	(a)	Briefly Explain Transmission and Distribution system sag performance evaluation	07	
Q.4	(b)	Explain UPS and SMEs Device	07	
Q.5	(a)	Enlist and Explain different type of current transformer used as a transducer in power	07	
	4	quality monitoring		
	(b)	Explain following terminology	07	
		 Sag Swell 		
		3. Flickers		
		4. Interruption		
		5. Impulsive Transient		
		6. Oscillatory Transient		
		7. Inter harmonics		
		OR		
Q.5	(a)	Explain different type of Potential transformer used as a transducer in power quality	07	
		monitoring	_	
	(b)	Briefly explain purpose of grounding and problem due to grounding	07	