Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2170910 **Date: 29/04/2017**

Subject Name: Power Quality and Management(Departmental Elective - II)

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)**	What is power quality? Discuss all the power quality issues in brief.	**07**
	(b)	Define and describe following terms : (1) Non-linear loads (2) Inrush current (3) Power factor(displacement) (4) Voltage swell (5) Flicker	**07**
Q.2	**(a)**	Describe voltage sags with examples.	**07**
	(b)	Explain shielded isolation transformers for low frequency disturbances.	**07**
		OR	
	(b)	State methods of power factor improvement. Describe static VAR compensator.	**07**
Q.3	**(a)**	Explain individual and total harmonic distortion in detail.	**07**
	(b)	Discuss the effects of harmonics on AC motor performance.	**07**
		OR	
Q.3	**(a)**	What is transient? Explain the causes of transients in power system.	**07**
	(b)	Explain one example of transient model and their response.	**07**
Q.4	**(a)**	Explain grounding and bonding schemes in power system in detail.	**07**
	(b)	Explain the fatal effect which may result due to loss of grounding.	**07**
		OR	
Q.4	**(a)**	What is Electromagnetic Interference? Describe main sources of EMI.	**07**
	(b)	Explain EMI mitigation methods.	**07**
Q.5	**(a)**	List power quality measurement devices? Discuss Harmonic Analyzer in detail.	**07**
	(b)	Explain number of test locations & test duration for power quality measurement.	**07**
		OR	
Q.5	**(a)**	What is distributed generation? Elaborate its effect on the power quality issues.	**07**
	(b)	Describe causes of voltage and current harmonics.	**07**

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