

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- VIII (New) EXAMINATION – WINTER 2019****Subject Code: 2180911****Date: 21/11/2019****Subject Name: Power Quality And Management****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.

		MARKS
Q.1	(a) Discuss the sources of voltage sag	03
	(b) Name and explain different types of power Quality issues that affect the power system depending upon the severity?	04
	(c) Discuss the responsibilities of suppliers and users for power quality.	07
Q.2	(a) How atmospheric conditions are responsible for transients in power system.	03
	(b) What is an ITC graph? Draw and discuss the ITIC graph in detail.	04
	(c) List cures for low frequency disturbances. Explain any two	07
OR		
Q.3	(c) Explain different power frequency disturbances.	07
	(a) What are the different sources of transient overvoltage?	03
	(b) What do you mean by order of harmonics? When even order harmonics will be present in the system? Explain its effect on induction motor.	04
(c) Define Transient. Discuss switching of loads & interruption of fault currents as cause of transients	07	
OR		
Q.3	(a) Differentiate Grounding & Bonding	03
	(b) Explain the signal reference ground methods	04
	(c) List and explain various harmonic mitigation techniques	07
Q.4	(a) State the importance of power factor in industry as per power quality study	03
	(b) Define (i) radiated emission (ii) Attenuation (iii) common mode noise (iv) transverse mode noise.	04
	(c) Define, displacement power factor and true power factor. List the methods of power factor improvement techniques and explain the static VAR compensator.	07
OR		
Q.4	(a) What is Electromagnetic Interference? Describe main sources of EMI	03
	(b) Describe the effect of EMI on power quality.	04
	(c) What is EMI? Explain the EMI mitigation techniques	07
Q.5	(a) Write short note on importance and application of True RMS meter	03
	(b) List and explain advantages and disadvantages of distributed generation.	04
	(c) Explain number of test locations & test durations for power quality.	07
OR		
Q.5	(a) Describe phenomena of islanding.	03
	(b) What are the various instruments used for power quality measurements.	04
	(c) List and explain various power quality issues affected by distributed generation	07
