

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2022****Subject Code:3172423****Date:14/06/2022****Subject Name:Power Quality****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.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Define the Power Quality.	03
(b) Explain the difference between linear and nonlinear load.	04
(c) Explain the causes of transients in power frequency.	07
Q.2 (a) Define the voltage sag.	03
(b) Explain the difference between linear and nonlinear load's effect.	04
(c) Explain effect of harmonics.	07
OR	
(c) Explain instrument set up guidelines for power quality measurement.	07
Q.3 (a) Define the odd and even harmonics.	03
(b) Explain common power frequency disturbances.	04
(c) Explain the transient wave forms.	07
OR	
Q.3 (a) Define reactive power.	03
(b) Explain the causes of harmonics.	04
(c) Explain the individual & total harmonics distortion.	07
Q.4 (a) Explain electromagnetic interference terminology.	03
(b) Explain the method for power factor improvement.	04
(c) Explain the guidelines for harmonic voltage limitation.	07
OR	
Q.4 (a) Define grounding.	03
(b) Explain earth resistance tests.	04
(c) Explain the guidelines for harmonic current limitation.	07
Q.5 (a) Define ground electrodes.	03
(b) Explain EMI Mitigation.	04
(c) Explain static VAR compensators.	07
OR	
Q.5 (a) Define power quality issues.	03
(b) Explain Cable shielding to minimize EMI.	04
(c) Explain signal reference ground methods.	07
