

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2017****Subject Code: 2170910****Date: 02/11/2017****Subject Name: Power Quality and Management (Departmental Elective - II)****Time: 10:30 AM TO 01:00 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) Explain Responsibilities of the Suppliers and Users of Electrical Power. **03**
(b) Define following terms with suitable example **04**
1.Non Linear loads 2.Inrush Current 3.Power Factor 4.Transient
(c) Explain Causes of Voltage and current harmonics. **07**
- Q.2** (a) What is ferro resonant transformer? **03**
(b) How Mitigation Voltage Sags? **04**
(c) Explain power factor improvement using static VAR compensators **07**
- OR**
- (c) Explain voltage tolerance criteria with suitable example **07**
- Q.3** (a) Explain Types of transients. **03**
(b) What is Voltage Notch And Voltage swing **04**
(c) Explain the causes of transients. **07**
- OR**
- Q.3** (a) What Is SMPS? **03**
(b) What is Individual and Total Distortion? **04**
(c) Explain Causes of Harmonics. **07**
- Q.4** (a) What is need of filtering in harmonics studies? **03**
(b) Give names of Harmonics Signature. Explain Adjustable Speed Drives(ADSS) **04**
(c) Discuss the Effect of harmonics on different loads **07**
- OR**
- Q.4** (a) What is the effect of harmonics on Capacitor Banks **03**
(b) What Is grounding? Explain the electric code grounding requirement **04**
(c) Explain Methods by which Harmonics can be Eliminated. **07**
- Q.5** (a) Explain the single reference ground methods. **03**
(b) What is Transient Disturbance Analyzer and True RMS Meter **04**
(c) What is EMI? Explain the EMI Mitigation techniques **07**
- OR**
- Q.5** (a) Explain Active power and Reactive power **03**
(b) Explain interference with relaying in distributed generation **04**
(c) Explain Different EMI terminology. **07**
