

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013****Subject code: 1724505****Date: 05-06-2013****Subject Name: Power Quality****Time: 10.30 am – 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 for the following related with Power quality. **07**
(i) Voltage imbalance (ii) Under voltage (iii) Over voltage (iv) Frequency variation
(v) DC offset, (vi) Inter harmonics, (vii) Voltage flicker
(b) Explain reason for grounding & problem associated with grounding. **07**
- Q.2** (a) What are the parameters all to be considered while choosing the mitigation techniques and solution to reduce flicker. **07**
(b) Discuss about the computer Business Equipment Manufactures Associations (CBEMA). **07**
- OR**
- (b) List the device used for the voltage regulation & explain any two briefly. **07**
- Q.3** (a) Explain the principle of protection and solutions at the end user level. **07**
(b) Explain the principle of protection and solutions at the Source level. **07**
- OR**
- Q.3** (a) What are the different voltage sag mitigation techniques? Explain in details. **07**
(b) Explain the following causes of sags. **07**
(i) Voltage sag due to motor sag
(ii) Voltage sag due to single line to ground fault.
- Q.4** (a) Explain the harmonic effects on power system equipments briefly. **07**
(b) Explain for the following: **07**
(i) Harmonic sources from industrial loads.
(ii) Harmonic sources from residential loads.
- OR**
- Q.4** (a) How will you find the harmonic sources from point of common coupling? Give the identification procedure on the basis of voltage indices. **07**
(b) Explain the power system response characteristics under the presence of harmonics. **07**
- Q.5** (a) What are the parameters to be Consider while choosing transducer & explain them briefly? **07**
(b) Explain the steps involved in power quality monitoring. What are the information from monitoring site surveys. **07**
- OR**
- Q.5** (a) Explain in detail about Flicker meter. **07**
(b) Explain the harmonic analyzer and disturbance analyzer. **07**
