

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.

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|-----|--|----|
| Q.1 | (a) Explain Responsibilities of the Suppliers and Users of Electrical Power. | 03 |
| | (b) Define following terms with suitable example
1.Non Linear loads 2.Inrush Current 3.Power Factor 4.Transient | 04 |
| | (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 |
