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Code No.: 7126 M

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**M.E. I Year (EEE) I-Semester (Make Up) Examinations, March-2016**  
**(Power Systems & Power Electronics)**

**Power Quality Engineering**

Time: 3 hours

Max. Marks: 70

*Note: Answer ALL questions in Part-A and any FIVE questions from Part-B*

**Part-A (10 X 2=20 Marks)**

1. Write the equation for calculation of voltage sag in a non-radial system.
2. Mention some PQ measuring instruments.
3. Define Harmonics and voltage flicker.
4. Draw magnitude – duration plot for faults originating in transmission and distribution systems.
5. Identify the causes of transients.
6. Define THD.
7. Specify the importance of grounding.
8. Mention the causes for phase angle Jumps.
9. List the harmonic sources from the industrial loads.
10. Define an intelligent system with respect to power quality data assessment.

**Part – B (5 X 10=50 Marks)**

11. Explain the importance of power quality study? According to IEEE standards, classify various power quality problems.
12. Explain the various methods of calculation of voltage sag.
13. Explain the effect of voltage sag on adjustable speed drive of a DC motor.
14. Define inter harmonics. Explain some mitigation methods of controlling harmonic distortion.
15. Identify the different grounding techniques and explain them in detail.
16. Explain the process involved in assessment of PQ data.
17. Discuss about fast assessment methods of voltage in distribution system.

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