

**Anna University – Regulation 2013**

**Part – B Important Questions – 7th Semester BE/BTECH**

**EE6005 Power Quality**

**UNIT I**

1. Describe the CBEMA and ITI curve in details and explain various events in the curve
2. Discuss the following characteristics of power quality issue (a) Short duration variations (b) Long duration variations (c) transients
3. Name and explain different types of power quality issues that affect the power systems depending upon the severity?
4. Discuss Power quality evaluation procedure
5. Discuss the source and effects of different categories of long duration voltage variations that affect the power quality
6. With a waveform sketch, explain the terms (a) Voltage sag (b) Voltage interruption (c) Voltage swells (d) Sag with harmonics

**Unit II**

1. What are the different voltage sag mitigation techniques? Explain in details
2. Explain performance voltage sag due to starting of large induction motor in distribution level
3. Analyse the different methods for estimating voltage sag severity due to the disturbance in the power system
4. What is the need for estimating sag performance Explain the different methods of estimating voltage sag performance
5. Analysis and calculation of power quality due various faulted condition

**Unit III**

1. Describe different methods of protection of transformers and cables against voltage transients.
2. What are the different sources of transient over voltages? Discuss the capacitor switching transient
3. Illustrate the phenomena of impulsive transients and oscillatory transients.
4. Analyze the source of transient over voltages in power systems.
5. Discuss about PSCAD and EMTP in detail

**Unit IV**

1. Explain the waveform distortion due to different types of nonlinear loads

2. Explain (a) Harmonic indices (b) Inter harmonics in detail
3. Discuss the effects of harmonic distortion on transformers and motors.
4. Explain how commercial and industrial loads are responsible for harmonic distortion.
5. Discuss the effects of harmonics on electrical power components

### **Unit V**

1. Bring the significance of power quality maintaining? Demonstrate the objectives of power quality maintaining?
2. Design and explain about power quality disturbance analyzer and harmonic analyzer
3. Write short notes on power quality measurement system. What are the characteristics of power quality measurement equipment's?
4. Analyze the role of expert systems in power quality monitoring.
5. Explain in detail with necessary diagram the working principle and functioning of power quality analyzers

\*\*\*\*\* All The best \*\*\*\*\*

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