**Printed pages: 1**                                            **Sub Code: EEE-061**
**Paper Id:120216**               **Roll No.**

# B TECH
## (SEM VIII) THEORY EXAMINATION 2018-19
## POWER QUALITY

**Time: 3 Hours**                                              **Total Marks: 100**
**Note: 1.**     Attempt all Sections. If require any missing data; then choose suitably.

### SECTION A

1. **Attempt all questions in brief.**                         **2 x10 = 20**
   a) What do you understand by term power quality?
   b) Explain impulsive transient.
   c) What do you mean by thumping?
   d) What do you mean by light arrester?
   e) What do you mean by Flicker?
   f) Explain the function of isolation transformer.
   g) What do you mean by active power and reactive power?
   h) Explain power factor.
   i) What should be the test locations for power quality testing?
   j) What do you mean by power quality test durations?

### SECTION B

2. **Attempt any three of the following:**                   **10 x 3 = 30**
   a) What are the cause of short duration voltage variation? Explain each cause in detail.
   b) What are the sources of voltage sag and interruptions? Explain in detail.
   c) Explain transient overvoltage due to capacitor switching and magnification of capacitor switching transients.
   d) Explain harmonics phase sequence in detail.
   e) Explain the working of harmonic Analyzer and Transient disturbance analyzer.

### SECTION C

3. **Attempt any one part of the following:**                  **10 x 1 = 10**
   (a) Explain (i)Voltage imbalance (ii) waveform distortion
   (b) Classify transients and explain each of them in detail.
4. **Attempt any one part of the following:**                  **10 x 1 = 10**
   (a) How the voltage sag performance can be estimated? Explain.
   (b) Explain the methods to provide the solutions at the End-User Level.
5. **Attempt any one part of the following:**                  **10 x 1 = 10**
   (a) Explain Ferro resonance in detail. What are the common indicators of Ferro resonance?
   (b) Explain the principle of overvoltage protection with the help of diagram.
6. **Attempt any one part of the following:**                  **10 x 1 = 10**
   (a) Explain total harmonic distortion and total demand distortion.
   (b) Explain different source of harmonics from industrial loads.
7. **Attempt any one part of the following:**                  **10 x 1 = 10**
   (a) Explain power Quality measurement in detail.
   (b) Explain the working of DSTATCOM. Why it is used ?