

**Paper Code: EEE-061**

**Roll No.**

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**B.Tech.**  
**(SEM VIII) EVEN SEMESTER EXAMINATION, 2015-16**  
**POWER QUALITY**

**[Time: 3 Hours]**

**[Max. Marks: 100]**

**Note-** Attempt All questions. All questions carry equal marks.

- Q1. Attempt any two parts of the following:- **[10x2=20]**
- (a) Define voltage transient. Discuss about various types of voltage transients occurring in power systems. What are their causes and effects?
  - (b) Discuss about the reasons of Voltage imbalance and power frequency variations in power system.
  - (c) What is the difference between sustained interruption and long duration?
- Q2. Attempt any two parts of the following:- **[10x2=20]**
- (a) How do arc furnaces and switching of motors affect the quality of power?
  - (b) What do you know about active series compensation?
  - (c) Write a note on UPS.
- Q3. Attempt any two parts of the following: - **[10x2=20]**
- (a) How does a capacitor switching transient get developed? What is done to prevent the adverse effect of the same?
  - (b) What do you understand by neutral voltage swing?
  - (c) What are the natural ways of development of over voltages in power system? Discuss about devices used for protecting against over voltages.
- Q4. Attempt any two parts of the following: - **[10x2=20]**
- (a) Why do the harmonics appear in power system? Give the standards related to harmonics.
  - (b) Write brief note on how the harmonics affect electric motors and distribution transformers.
  - (c) How are the harmonics measured and mitigated?
- Q5. Attempt any two parts of the following: - **[10x2=20]**
- (a) Describe Transient disturbance analyzer in detail.
  - (b) Discuss about Custom Power Devices. Give their configuration and applications.
  - (c) What is DSTATCOM? How does it help in voltage regulation?