

Roll No .....

**MEPE-205**

**M.E./M.Tech., II Semester**

Examination, December 2016

**Power Quality And Conditioning**

**Time : Three Hours**

**Maximum Marks : 70**

- Note : i) Attempt any five questions.  
ii) All questions carry equal marks.

1. a) Explain the characteristics of power quality events in short duration variations and long duration.  
b) Explain the various types of power quality disturbances and its impact on power quality.
2. a) Explain the concept of harmonic phenomena under the presence of harmonic producing loads.  
b) What are the various causes of harmonics in power system?
3. a) What are the devices for controlling harmonic distortion? Explain the operation of any one of them.  
b) Describe the concept and working of active filter.
4. a) Explain improved single phase power quality converter using its system configuration and control scheme.  
b) What are the problems caused by a passive filter in the system?

5. a) What are the causes of electromagnetic interference and how these are eliminated?  
b) What is meant by constant tolerance band control and variable tolerance band control?
6. a) What do you understand by active wave shaping of input line current?  
b) Describe constant frequency control technique for active waveshaping of input line current.
7. a) What is electromagnetic interference? Enumerate various EMI standards.  
b) Discuss the concepts of voltage source active filter and current source active filter.
8. Write short notes on any two of the following :
  - a) Three-phase improved power quality converter.
  - b) Power quality indices
  - c) Design of harmonic filter
  - d) Discontinuous current control

\*\*\*\*\*