

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No

MEPS-203**M.E./M.Tech., II Semester**

Examination, June 2017

Power Quality And Conditioning

Time : Three Hours

Maximum Marks : 70

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

1. a) What is meant by Power Quality? Explain the reasons for increased concern in power quality.
b) Explain the various types of power quality disturbances and impacts on power quality.
2. a) Explain the fundamentals of harmonic generation and waveform distortion.
b) What are the various causes and effects of harmonics in power systems? Explain.
3. a) State and explain in brief the classical solution methodologies for the elimination of harmonics and their drawbacks.
b) Describe the operation of current source active filter for the suppression of harmonics.
4. a) Discuss the various standards of supply harmonics and radio interference in converter controlled network.
b) What is Electromagnetic Interference (EMI)? Enumerate various types of EMI standards.

MEPS-203

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[2]

5. a) Draw and explain the improved power quality converter topologies.
b) What are the causes of electromagnetic interference and how it can be minimized.
6. a) Explain the objective and requirement of power quality monitoring with suitable example.
b) Distinguish between constant and variable tolerance band control.
7. a) Describe the operation of PWM converter as a voltage source active filter.
b) Differentiate between voltage source active filter and current source active filter.
8. Write short notes on any two of the following:
 - a) Active wave shaping of input line current
 - b) Harmonic elimination using different transformer connections
 - c) Power quality indices
 - d) Power conditioning equipment

MEPS-203