

M. E./M. Tech. (Second Semester)

EXAMINATION, June, 2012

(Grading/Non-Grading)

POWER QUALITY AND CONDITIONING

(MEPE - 205)

Time : Three Hours

Maximum Marks : $\begin{cases} GS : 70 \\ NGS : 100 \end{cases}$

Note : Attempt any five questions. All questions carry equal marks.

1. Why are we concerned about power quality ? What is the power quality evaluation procedure ? Describe general classes of power quality problems.
2. How voltage sag performance can be estimated ? How much sensitivity of equipments is permissible to voltage sags ? Also discuss the economic aspect of voltage sags.
3. What could be possible causes of transient overvoltages ? What devices can be employed for protection from these overvoltages ?
4. Explain harmonic distortion. Distinguish between voltage and current harmonics. How harmonics are different than transients ? Explain.

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5. How harmonics can be suppressed using active power filters ? How many topologies are available for it and discuss the method for their control ?
6. Define and explain about constant frequency and variable tolerance band control.
7. Discuss possible harmonic filters and explain any one topology in detail for single-phase as well as three-phase supply.
8. What do you understand by EMI ? How are they generated ? What is its tolerance limit ? How can they be eliminated ?

P. T. O.