Code No: D4206, D4306, D5406 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II-SEMESTER EXAMINATIONS, APRIL/MAY 2012
POWER QUALITY
(COMMON TO POWER AND INDUSTRIAL DRIVES, POWER ELECTRONICS, POWER ELECTRONICS AND ELECTRIC DRIVES)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

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1.a) What are the major power quality issues? Explain in detail.
b) Define power quality. Explain the reasons for increased concern in power quality.

2. Explain the various types of power quality disturbances and impacts power quality.

3.a) Write the various IEEE and IEC power quality standards.
b) Explain the following event based disturbances:
i) Dip
ii) Swell
iii) Transients.

4. What are the different voltage sag mitigation techniques? Explain in details.

5.a) What are the different sources of transient of over voltages? Discuss the capacitor switching transient.
b) What are the important concerns for capacitor bank switching?

6.a) What is the need for protection against over voltages? What are the basic principles of over voltages protection of load equipments?
b) Explain in detail about various methods to mitigate voltage swells.

7.a) Explain briefly about various harmonic characterization on power systems.
b) Explain briefly about the phenomena of how current distortion affects the voltage distortion under the presence of harmonics.

8. Write short notes on power quality measurement system. What are the characteristics of power measurement equipments?

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