R09

Code No: D0709

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY 2012
POWER QUALITY
(ELECTRICAL POWER SYSTEMS)

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

Answer any five questions
All questions carry equal marks
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1.a) Explain the following terms with reference to the power quality:
(i) Undervoltage
(ii) Voltage Swell
(iii) Harmonics
(iv) Transient overvoltage

b) Write short notes on:
(i) EMC
(ii) Standardization
(iii) Voltage magnitude events

2. What are the causes for the following PQ problems?
(i) Harmonic Voltage Distortion
(ii) Phase angle jumps and 3 phase unbalance
(iii) Voltage & Current unbalance
(iv) High frequency voltage noise

3. Give some of the reasons for lack of interest in distributions system reliability.

4. During short interruption, explain briefly the influence on the following equipment:
(i) Induction Motors
(ii) Synchronous Motors

5. Take a distribution network and explain what happens when a fault is created in transmission network.

6. Draw the phasor diagram for sag of type C. Give the waveforms of magnitude and phase angle jump due to phase-phase fault. Also derive the voltages of magnitude and phase angle jump.

7. Using the principle of Pulse Width Modulation draw and explain about unbalanced motor voltages.

8. Briefly explain about installing of mitigation equipment and the role of each equipment.

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