**Code: 9A02801** **R09**

B.Tech IV Year II Semester (R09) Regular & Supplementary Examinations April 2016

**PRINCIPLES OF POWER QUALITY**

(Electrical & Electronics Engineering)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

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1 (a) Draw and explain CBEMA and ITI curves in detail.
(b) Write short notes on:
(i) Short-duration voltage variations.
(ii) Voltage imbalance.
(iii) Waveform distortion.

2 (a) Write a short note on estimating the sag severity during full voltage starting.
(b) Explain about various solutions at the end user level protection.

3 (a) Explain various strategies for utilities to decrease the impact of lightning.
(b) What are the fundamental principles of over voltage protection of load equipment? Explain.

4 (a) Write the impact of voltage distortion on current distortion.
(b) What are the various harmonic sources from commercial loads? Explain.

5 (a) Explain the harmonic distortion evaluation procedure.
(b) Explain various devices for controlling harmonic distortion.

6 (a) Explain the working of various devices for voltage regulation.
(b) Explain the effect of line drop compensation on voltage profile.

7 (a) Describe the process of power quality bench marking.
(b) Describe various RMS voltage variation indices.

8 (a) Explain about various power quality measurement equipment.
(b) Explain the various power quality monitoring considerations.

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