

Code: 9A02801

**R09**

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

**PRINCIPLES OF POWER QUALITY**

(Electrical &amp; 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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