

FACULTY OF ENGINEERING

B.E. 4/4 (E&EE) I - Semester (Main) Examination, December 2011

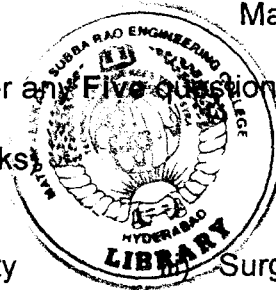
Subject : **Power Quality** (Elective-I)

Time : 3 Hours

Max. Marks: 75

Note: Answer all questions from Part-A. Answer any **Five** questions from Part-B.

Part - A (25 Marks)



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|-----|--|---|
| 1. | Explain the following terms :
i) Harmonics ii) Power quality Surge | 3 |
| 2. | What are the Remedies to improve power quality? | 3 |
| 3. | How is voltage sag duration measured? Explain. | 3 |
| 4. | Explain how load influences on voltage sags. | 3 |
| 5. | What is ASD systems and mention the applications of it? | 2 |
| 6. | What are the major effects of voltage sag on synchronous motors. | 2 |
| 7. | What is voltage harmonic and current harmonic? | 3 |
| 8. | What are the solutions to harmonics? | 2 |
| 9. | What are PQ measurement devices? | 3 |
| 10. | What is THD? | 1 |

Part - B (50 Marks)

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|-------|---|--------|
| 11.a) | Explain the following terms related PQ.
i) Spikes ii) voltage fluctuations iii) Transients
iv) Interruptions v) sag/swells | 5 |
| | b) Explain the procedure for creating PQ database and processing of PQ data. | 5 |
| 12.i) | What are the causes of voltage sags? | 5 |
| | ii) Draw the flow chart for analysis of voltage sag. | 5 |
| 13. | Explain the analysis of sag magnitude in
i) Non-Radial systems
ii) Meshed systems | 5
5 |
| 14. | Define voltage sag? Derive an expression for magnitude and phase angle jump versus distance. | 10 |
| 15. | In general give the procedure followed to identify any power quality problem and give me remedies. | 10 |
| 16. | Explain the effects of momentary voltage dips on operation of
i) Induction motor ii) synchronous motor | 10 |