

Total No. of Questions : 10]

SEAT No. :

**P2045**

**[4859] - 1029**

[Total No. of Pages : 2

**B.E. (Electrical) (Semester - I)**  
**POWER QUALITY (End Semester)**  
**(2012 Pattern) (Elective - I (b))**

*Time : 2.5 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicates full marks.*
- 4) *Use of Calculator is allowed.*
- 5) *Assume Suitable data if necessary.*

- Q1) a)** Why Power Quality has become important in today's context? **[5]**
- b) Explain voltage sag characteristics - point on wave initiation, missing voltage. **[5]**

OR

- Q2) a)** Discussion in brief any one over voltage mitigation technique. **[5]**
- b) Discuss how power quality is affected due to grounding problems. **[5]**

- Q3) a)** List various voltage sag mitigation techniques and explain any one. **[5]**
- b) What is flicker? List various sources of flicker. **[5]**

OR

- Q4) a)** Write short note on power quality problem characteristics as per IEEE Standard 1159. **[5]**
- b) Write short note on computer tools used for transient analysis. **[5]**

- Q5) a)** What is harmonics? Explain voltage and current harmonic distortion. **[9]**
- b) Explain in brief the impact of harmonics on active, reactive and apparent power. **[9]**

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OR

- Q6)** a) Write detail note on triplen harmonics. [9]  
b) Discuss in detail various sources of harmonics. [9]

- Q7)** a) Explain the concept of point of common coupling and its use in harmonic study. [8]  
b) Explain in brief devices for controlling harmonic distortion. [8]

OR

- Q8)** a) Explain in detail different principles of controlling harmonics. [8]  
b) Discuss harmonic study procedure. [8]

- Q9)** a) List and explain use of various equipment's required for power quality monitoring. [10]  
b) Write note on choosing PQ monitoring location. [6]

OR

- Q10)**a) Discuss different objectives/consideration for power quality monitoring.[10]  
b) Write note on choosing PQ monitoring duration. [6]

