

Total No. of Questions : 10]

SEAT No. :

P3593

[Total No. of Pages : 2

[4959]-1065**B.E. (Electrical)****POWER QUALITY****(2012 Course) (Semester - I) (Elective - I)****Time : 2½ 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 side indicate full marks.
- 4) Use of calculator is allowed.
- 5) Assume suitable data, if necessary.

- Q1)** a) Explain various grounding practices as per IEEE standard. **[5]**
 b) Explain economic impact of voltage sags. **[5]**

OR

- Q2)** a) Why are we concerned more about power quality now days? **[5]**
 b) Explain various voltage flicker parameters obtained from flicker measurements. **[5]**

- Q3)** a) Explain voltage sag characteristics such as magnitude, duration, phase angle jump and missing voltage. **[5]**
 b) Explain various computer tools used for transient's analysis. **[5]**

OR

- Q4)** a) What are the various sources of transients over voltages? **[5]**
 b) Explain following terms related with voltage flicker (i) Short term (Pst) and (ii) Long term (Plt) voltage flicker. **[5]**

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- Q5) a)** Explain following terms related with waveform distortion: [9]
 i) Harmonics
 ii) Interharmonics
 iii) Sub-harmonics
 iv) Characteristic harmonics
 v) Triplen harmonics.

- b) What are the various harmonics indices used? Explain. [9]

OR

- Q6) a)** What are the various sources of harmonics and their effects on the operation of various equipment's? [9]
 b) Explain impact of harmonics on active, reactive and apparent power. [9]

- Q7) a)** What is harmonic filtering? Explain active and passive filters. [8]
 b) Explain step by step procedure for harmonics analysis. [8]

OR

- Q8) a)** Explain the concept of point of common coupling and its use in harmonic analysis. [8]
 b) Explain computer tools used in harmonic analysis. [8]

- Q9) a)** Explain need of power quality monitoring. What is reactive and proactive approach? [8]
 b) What are the requirements of power quality monitor to monitor various power quality parameters? [8]

OR

- Q10) a)** Explain various objectives of power quality monitoring equipment's to monitor various power quality parameters? [8]
 b) Explain various techniques of data collection and its analysis. [8]

