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]**

P.T.O.

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]**