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: 2	½ Hours] [Max. Marks : 70
Instruct	ions 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.
<b>Q1)</b> a)	Explain various grounding practices as per IEEE standard. [5]
b)	Explain economic impact of voltage sags. [5]
,	OR
<b>Q2)</b> 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)	<ul> <li>Explain following terms related with waveform distortion:</li> <li>i) Harmonics</li> <li>ii) Interharmonics</li> <li>iii) Sub-harmonics</li> <li>iv) Characteristic harmonics</li> <li>v) Triplen harmonics.</li> </ul>	[9]
	b)	What are the various harmonics indices used? Explain.	[9]
		OR	
Q6)	a)	What are the various sources of harmonics and their effects on operation of various equipment's?	the [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 harmo analysis.	nic [ <b>8</b> ]
	b)	Explain computer tools used in harmonic analysis.	[8]
Q9)	a)	Explain need of power quality monitoring. What is reactive and proact approach?	tive [8]
	b)	What are the requirements of power quality monitor to monitor varie power quality parameters?	ous [ <b>8</b> ]
		OR	
Q10	<b>)</b> a)	Explain various objectives of power quality monitoring equipment's monitor various power quality parameters?	s to [8]
	b)	Explain various techniques of data collection and its analysis.	[8]

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