Total No. of Questions : 10]

SEAT No. :

P3069

[Total No. of Pages : 2

[5154]-635
B.E. (Electrical)
POWER QUALITY
(2012 Course) (Semester - I) (Elective - I) (403143 B) (End Sem.)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.***
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) Define Power Quality in general sense. What are the objectives of grounding? **[5]**

b) State & describe various power quality issues related to voltage. **[5]**

OR

Q2) a) Define and explain

i) Short duration voltage fluctuations

ii) Long duration voltage fluctuations **[5]**

b) Explain power quality issues like overvoltage, undervoltage, voltage sag and voltageimbalance. **[5]**

Q3) a) Define voltage flicker and explain one method for voltage flicker mitigation. **[5]**

b) Explain in brief the impact of voltage sag on various equipment. **[5]**

OR

Q4) a) Explain various voltage flicker parameters obtained from flicker measurements. **[5]**

b) Explain in brief various voltage sag characteristics. **[5]**

P.T.O.

Q5) a) What are the causes and explain effects of harmonics on power system equipment. **[8]**

b) Write detail note on triplen harmonics. **[8]**

OR

Q6) a) Explain different harmonic indices. **[8]**

b) What is displacement and true power factor, explain its significance in Power Quality. **[8]**

Q7) a) Discuss in detail various principles of controlling harmonics. **[8]**

b) Explain passive filter design procedure for harmonic reduction. **[8]**

OR

Q8) a) Write note on devices for controlling harmonic distortion. **[8]**

b) Explain the concept of point of common coupling and its use in harmonic study. **[8]**

Q9) a) Explain use of various equipment required for power quality monitoring. **[10]**

b) Write note on choosing PQ monitoring duration. **[8]**

OR

Q10)a) Explain the need of power quality monitoring? What are different approaches? **[10]**

b) Explain the role of oscilloscopes, data loggers in power quality measurements. **[8]**

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