

Total No. of Questions : 10]

SEAT No. :

P3069

[5154]-635

[Total No. of Pages : 2

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 voltage imbalance. [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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