

Total No. of Questions : 10]

SEAT No. :

P2291

[Total No. of Pages : 2

[5254]-625

B.E. (Electrical)

POWER QUALITY

(Elective – I) (Semester – I) (2012 Pattern)

Time : 2:30 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 indicates full marks.
- 4) Use of calculator is allowed.
- 5) Assume suitable data if necessary.

- Q1)** a) Why power quality has become important in today's context? [5]  
b) Write note on how power quality is affected due to grounding problems. [5]

OR

- Q2)** a) Define power quality terms transients, voltage fluctuation and waveform distortion. [5]  
b) State voltage sag mitigation techniques and explain any one in details. [5]
- Q3)** a) Write various sources of transient over voltages and explain any one in detail [5]  
b) What is Flicker? Explain sources of flicker. [5]

OR

- Q4)** a) Explain various grounding practices as per IEEE standards. [5]  
b) Explain Area of vulnerability. [5]

P.T.O.

- Q5)** a) Discuss in details various sources of harmonics. [8]  
b) Explain following terms [8]  
i) Interharmonics ii) subharmonics  
iii) Triplen harmonics iv) Harmonic phase sequence

OR

- Q6)** a) Explain Effects of Harmonics on various power system equipments. [8]  
b) Explain Harmonic indices in detail. [8]
- Q7)** a) What is point of common coupling and its use in harmonic study? [8]  
b) Explain Harmonic distortion study procedure in details. [8]

OR

- Q8)** a) Explain various principles of controlling harmonic distortion. [8]  
b) Explain passive filter design procedure for harmonics reduction. [8]
- Q9)** a) State equipment used for power quality monitoring and explain any three equipment in detail. [10]  
b) Write note on choosing PQ monitoring duration. [8]

OR

- Q10)** Write short notes on the following [18]  
a) True RMS meters  
b) Transient disturbance analyser  
c) Harmonic analyser

