

Total No. of Questions : 10]

SEAT No. :

P3909

[5561]-579

[Total No. of Pages : 2

B.E.(Electrical)

POWER QUALITY

(2015 Course) (Semester - I) (Elective - I) (403143B)

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 indicates full marks.*
- 4) *Use of calculator is allowed.*
- 5) *Assume Suitable data if necessary.*

Q1) a) Classify Power Quality events related to voltage and current. **[5]**

b) How voltage sag is characterized? What are the causes of voltage sag? **[5]**

OR

Q2) a) Explain Voltage tolerance curve for investigation of equipment sensitivity to voltage sag. **[5]**

b) Define and List the short duration RMS voltage variations. **[5]**

Q3) a) What is the effect of voltage sag on Motors? **[5]**

b) Explain factors governing severity of voltage flicker. **[5]**

OR

Q4) a) What are the sources of transient over voltages? What are the effects of over voltage on equipment? **[5]**

b) What is voltage sag mitigation technique used at equipment level? **[5]**

Q5) a) Classify harmonics based on various criteria. **[8]**

b) What indices are used for harmonic measurement? Explain. **[8]**

OR

Q6) a) What is harmonics? What are the causes of harmonics? **[8]**

b) Explain effects of harmonics on Electrical equipment and cables. **[8]**

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Q7) a) What is the need for identifying the source of harmonics? What is the role of capacitor in harmonic study? **[8]**

b) How harmonics are mitigated ? Explain. **[8]**

OR

Q8) a) Explain series resonance problem related to harmonics. How it can be avoided? **[8]**

b) How tuned filters are used to mitigate harmonics? **[8]**

Q9) a) What are the objectives for Power quality monitoring? How it varies for old and new industrial set up? **[10]**

b) Explain selection of Power Quality equipment for power quality monitoring. **[8]**

OR

Q10)a) Explain the provisions for Power Quality monitoring made in IEEE Std 1159? **[10]**

b) What computer tools are used for effective Power quality analysis? Explain. **[8]**

