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Reg. No. :

Question Paper Code : 90493

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Sixth Semester

Electrical and Electronics Engineering

EE 8006 — POWER QUALITY

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Voltage imbalance.

2. What are the main components of power quality?

3. Classify different types of voltage sags.

4. How voltage swell differs from transients?

5. What are the causes for oscillatory voltage transients?

6. Why even harmonics are normally absent in the power converters?

7. Distinguish between passive and active filter.

8. Define Point of Common Coupling.

9. What are the benefits of Power Quality Monitoring?

10. Give the merits of Digital Power Quality Analyzers.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the impact of poor power quality on utility and consumer.

Or

(b) Discuss about CBEMA curve. Explain the events described in the curve.

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12. (a) Briefly explain any two voltage sag mitigation techniques with necessary circuit diagram and waveforms.

Or

(b) Discuss the effects of voltage sag and interruption on various electrical equipment.

13. (a) Discuss in detail the behavior of capacitor switching transients and lightning transients.

Or

(b) Explain the sources of transient over voltage in high, medium and low frequency ranges.

14. (a) Explain the operation of passive shunt and series compensators.

Or

(b) Discuss the construction and working principle of passive filters for harmonic mitigation.

15. (a) Bring out the significance of Power Quality monitoring. Write the important power quality monitoring objectives.

Or

(b) Explain the various equipment used for Power Quality monitoring and measurement.

PART C — (1 × 15 = 15 marks)

16. (a) Explain how commercial and industrial loads are responsible for Harmonic Distortion.

Or

(b) Explain the various types of Power Quality disturbances.

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