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Question Paper Code : 31221

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Seventh Semester

Electrical and Electronics Engineering

080280064 — POWER QUALITY ENGINEERING

(Common to B.E. (Part-Time) Sixth Semester)

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why are power quality issues becoming important in today's context?
2. Give an example of a non-linear load.
3. How do the induction motors affect the power quality?
4. List the devices used for monitoring the short interruptions.
5. Define voltage sag.
6. What is lightning transient?
7. List sources of harmonic distortion.
8. State triplen harmonics.
9. What is power quality monitoring?
10. List out few quality measurement equipments.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the various power quality issues with examples. (16)

Or

- (b) Explain the sources and effects of power quality problems. (16)

12. (a) (i) Compare short and long interruptions and write the sources of such interruptions. (8)
- (ii) Discuss how induction motors influence on interruptions of power quality. (8)

Or

- (b) (i) Name and explain the voltage of regulating devices. (8)
- (ii) Explain the reliability evaluation and cost of interruptions. (8)

13. (a) Discuss the influence on voltage sags on adjustable speed drives and stochastic assessment of voltage sags. (16)

Or

- (b) Discuss the various devices for over voltage protection and explain the capacitor switching and lighting transients. (16)

14. (a) (i) State and explain interharmonics. (8)
- (ii) Explain the harmonics impact on energy and demand metering. (8)

Or

- (b) What is system response characteristic? Name and explain primary variables affecting the system response characteristics. (16)

15. (a) Discuss planning, conducting and analyzing of power quality survey. (16)

Or

- (b) (i) Describe evolution of power quality monitoring. (8)
- (ii) Explain the role of active filter for harmonic reduction with necessary diagram. (8)