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Question Paper Code : 80360

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Seventh Semester

Electrical and Electronics Engineering

EE 6005 – POWER QUALITY

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How can be the power quality problems detected?
2. What are the components of waveform distortion?
3. What are the causes of sag?
4. What are the main functions of DVR?
5. What is Ferro resonance?
6. Give any two analysis examples available in PSCAD/EMTP.
7. Differentiate between linear loads and non-linear loads.
8. Mention the harmonic sources from industrial loads.
9. List the advantages of power quality monitoring.
10. What is Spectrum analyzer?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain about the short duration and long duration voltage variation. (8)
- (ii) Discuss the standards of power quality. (8)

Or

- (b) Explain briefly about the characterization of power quality issues. (16)

12. (a) How does the load influence on voltage sag on adjustable speed drives? (16)

Or

(b) Explain the role of compensators in mitigation of voltage sags. (16)

13. (a) Discuss the sources of overvoltage due to following phenomena.

(i) Capacitor switching. (8)

(ii) Ferro resonance. (8)

Or

(b) Describe the following mitigation techniques of over voltages with diagrams.

(i) Shielding. (8)

(ii) Cable protection. (8)

14. (a) Discuss the characteristics of harmonics generated by different types of industrial and commercial load. (16)

Or

(b) Explain the IEEE and IEC standards on harmonics distortion. (16)

15. (a) Discuss the power quality monitoring considerations in detail. (16)

Or

(b) Explain the Flicker meter and flicker measurement techniques in detail. (16)