Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 80357

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

Sixth Semester

Electrical and Electronics Engineering

EE 6002 — POWER SYSTEM TRANSIENTS

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the need for study of transients in a power system.
2. Classify transients based on its frequency.
3. Define current chopping.
4. What is meant by resistance switching?
5. Define isokeraunic level or thunderstorm days?
6. What is ground wire?
7. What are the damages caused by the travelling waves?
8. Define crest and front of a travelling wave.
9. What is meant by kilometric fault?
10. Write the network calculation to model a transmission network of EMTP.

PART B — (5 × 16 = 80 marks)

11. (a) Examine the sources of transients? Also explain how transients affect the power systems.

Or

(b) Explain the concept of double frequency transients in power system.

12. (a) Write short notes on (i) Ferro resonance (ii) current chopping.

Or

(b) What is meant by current suppression? Explain the concept in an unloaded transformer with relevant wave forms.

13. (a) Explain the mechanism of lightning discharge and concept of tower footing resistance.

Or

(b) Sketch the characteristics of lightning strokes and also discuss the parameters of lightning flash.

14. (a) Explore the steps involved in Bewely's lattice diagram construction with an example.

Or

(b) Discuss transient response of systems with series and shunt lumped parameters and distributed lines.

15. (a) Describe in detail about the causes of over voltages due to various faults occurring in a Power System.

Or

(b) Examine the computation of Transients in power system using EMTP.