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

Question Paper Code : 93414

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Eighth Semester

Electrical and Electronics Engineering

EE 1003/EE 1005 — POWER SYSTEMS TRANSIENTS

(Regulation 2004/2007)

(Common to B.E. (Part–Time) Seventh Semester, Regulation 2005)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is known as Voltage Surge?

2. Name any two effects of transients in. Power System.

3. Define Ferroresonance.

4. Draw the circuit to illustrate multiple restriking transients.

5. What do you mean by lighting?

6. Give the factors contributing to good line design.

7. Why are step waves considered to be dangerous to the apparatus?

8. Define SWR.

9. What is load rejection?

10. How does a surge occur during switching?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the sources of transients? Explain. (8)

(ii) List the different types of power system transients. Explain them in detail. (8)

Or

(b) What is meant by study of transients in Planning? Describe its importance. (16)

12. (a) What is capacitance switching? Explain in brief the effect of source regulation and capacitance switching with a restrike. (16)

Or

(b) Explain the switching in both normal and abnormal conditions with neat sketches. (16)

13. (a) (i) Derive the mathematical model for lightning. (10)

(ii) What are the factors that contribute to good line design? Explain. (6)

Or

(b) (i) With a neat sketch explain the mechanism of lighting stroke. (8)

(ii) Explain counter-poise method of protection. (8)

14. (a) Explain in detail with a neat diagram the transient response of systems with series and shunt lumped parameters and distributed lines. (16)

Or

(b) Explain the concept of bewley's lattice diagram and discuss about the reflection and refraction of traveling waves in detail. (16)

15. (a) Define kilometric fault. in an integrated power system. With a neat diagram, describe its mechanism in detail. (16)

Or

(b) Explain the transients response of systems with series and shunt lumped Parameters in distributed line. (16)
