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Question Paper Code : 50459

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017
Sixth Semester
Electrical and Electronics Engineering
EE6002 – POWER SYSTEM TRANSIENTS
(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. What are the effects of transients in power systems ?
2. Write down the importance of transient study in power system planning.
3. What is current chopping in A.C. system ?
4. Distinguish between lightning surges and switching surges.
5. What are the factors contributing to a good line design ?
6. List out the important characteristics of lightning.
7. Define standing wave ratio.
8. Define reflection and refraction coefficients.
9. How will you calculate the probability of strikes for an over head line ?
10. Define short line or kilometric fault.

PART – B (5×16=80 Marks)

11. a) Explain the switching transients of RL circuit with sine wave excitation. (16)
- (OR)
- b) i) Discuss the various types of power system transients. (8)
- ii) Briefly discuss about double frequency transients. (8)



12. a) With neat sketch explain the capacitance switching with multiple restrikes. (16)

(OR)

b) i) With neat diagrams explain the concept of load switching. (8)

ii) With suitable example explain the concept of ferro resonance. (8)

13. a) i) Discuss the mechanism of lightning discharge. (8)

ii) Explain the formation of thunder clouds with the aid of various theories. (8)

(OR)

b) Explain the lightning protection schemes for transmission lines. (16)

14. a) With neat diagrams discuss the behaviour of a travelling wave when it reaches the end of

i) Open circuited transmission line. (8)

ii) Short circuited transmission line. (8)

(OR)

b) Explore the steps involved in Bewley's lattice diagram construction with an example. (16)

15. a) i) Explain the applications of EMTP for transient computation. (8)

ii) Evaluate the reflection and transmission coefficient in an integrated power system. (8)

(OR)

b) i) Describe the causes of over voltages induced by various faults in a power system. (8)

ii) Explain the causes of transients on closing and reclosing of transmission lines. (8)