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Question Paper Code : X 60483

B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC. 2020
Sixth Semester
Electrical and Electronics Engineering
EE 2027/EE 604/10133 EEE 16 – POWER SYSTEM TRANSIENTS
(Regulations 2008/2010)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What are the causes of transients in a power system ?
2. A power transformer draws a heavy magnetizing inrush current. Now this current is suddenly interrupted before it reaches natural zero by means of a circuit breaker. What would happen between the contacts of circuit breaker ? What do you call this phenomenon ?
3. What is resistance switching ?
4. Define current chopping.
5. What are the protective devices used to protect power system equipments against lightning ?
6. What are the properties of a good transmission line ?
7. What is the importance of Bewley's Lattice Diagram ?
8. Draw the equivalent circuit for an infinitesimal element of a line.
9. What is the effect of switching surges on an integrated system ?
10. What are the features of EMTP ?



PART – B

(5×16=80 Marks)

11. a) Briefly explain the importance of study of transients in planning.

(OR)

b) Explain any one of the source of transients. Also discuss in detail the effects of transients on power systems.

12. a) i) Explain the load switching in both normal and abnormal conditions with neat sketches. (8)

ii) Explain current chopping with appropriate equivalent circuit. (8)

(OR)

b) What is capacitance switching? Explain in briefly about capacitance switching with one and multiple restrikes. (16)

13. a) With necessary diagrams, describe the interaction between lighting and the power system.

(OR)

b) i) Write short note on tower footing resistance. (8)

ii) Briefly explain the mechanism of lightning discharges. (8)

14. a) Explain the steps involved in Bewley's Lattice diagram with an example. (16)

(OR)

b) Obtain the value of current in a transmission line considering its series and shunt lumped parameters. (16)

15. a) With an example explain the switching surges in an integrated power system.

(OR)

b) Explain how faults occurring on power system cause over voltages in transmission lines.
