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Question Paper Code: 57305

B.E. / B.TECH. DEGREE EXAMINATION, APRIL/MAY 2016

Sixth semester

Electrical and Electronics Engineering

EE 6002 – POWER SYSTEM TRANSIENT

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL Questions.

PART A – (10 X 2 = 20 marks)

1. What are the causes of transient?
2. Draw the TRV wave form across the circuit breaker following the interruption of fault current
3. Define current chopping.
4. Draw the resistance switching circuit.
5. Give the measurement detail of induced voltage on overhead lines due to lightning.
6. What is the significance of tower footing resistor.
7. Draw the diagram of meeting of positive current wave in opposite direction.
8. Draw the neat sketch of Bewley's lattice diagram.
9. Write an expression for amplitude of the over voltage with circuit diagram during load rejection.
10. Write a short note on EMTP.

PART B – (5 x 16 = 80 marks)

11. (a) Explain the double frequency transient in a power system with a circuit diagram, wave form and expression. (16)
Or
(b) Briefly explain the importance of study of transient in planning. (16)
12. (a) (i) Explain load switching with equivalent circuit and wave form. (8)
(ii) Explain in detail ferro resonance with circuit and wave form from diagram. (8)

Or

(b) Explain capacitance switching with circuit and waveform showing the effect of source regulation, one and multiple restrikes. (16)

13. (a) (i) Discuss in detail about the lightning flash parameter. (8)
(ii) Differentiate between direct and indirect lightning strokes. (8)

Or

(b) (i) What are the factors that contribute to good line design? Discuss in detail. (8)
(ii) How the ground wire protect the transmission line from lightning transient? Explain. (8)

14. (a) Describe the transient response of system with series and shunt distributed parameter. (16)

Or

(b) Derive the reflection and refraction coefficient of a travelling wave with diagrams. (16)
15. (a) Discuss in detail about the kilometric fault with necessary, expressions and voltage and recovery voltage wave forms. (16)

Or

(b) Explain the voltage transient on closing and reclosing of lines and switching surges on integrated system. (16)