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Question Paper Code : 21405

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2013.

Sixth Semester

Electrical and Electronics Engineering

EE 2353/EE 63/10133 EE 603 – HIGH VOLTAGE ENGINEERING

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the different kinds of over voltages.
2. What is stepped leader stroke?
3. What is meant by corona discharges?
4. What are electronegative gases?
5. Mention the specifications of the standard impulse voltage.
6. Give any two methods of switching surge generation in laboratory.
7. Define CVT.
8. Give the advantages of electrostatic voltmeter.
9. What are the different tests conducted on insulators?
10. What are type and routine tests?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the mechanism of lightning strokes. (10)
(ii) Give the mathematical models for lightning discharges and explain them. (6)

Or

- (b) (i) Explain causes of power frequency over voltages in power system. (8)
(ii) Give a brief note on protection of transmission lines using protection devices. (8)

12. (a) State the criteria for sparking potential and hence obtain the relation between sparking potential and (pd) values (Paschen's Law). Discuss on the nature of variations of sparking potential with (pd) values. (16)

Or

- (b) Explain the breakdown mechanism involved in commercial liquid dielectrics. (16)
13. (a) (i) Explain the operation of basic impulse generator. (8)
(ii) Explain the cascaded transformer method of HVAC generation. (8)

Or

- (b) Explain the operation of vande graff generator from the electrostatic principle. (16)
14. (a) (i) Explain the operation of the hall effect generator for measuring high DC currents. (8)
(ii) Discuss the factors influencing the spark over voltage on Sphere gaps. (8)

Or

- (b) Tabulate the various methods of High AC and DC voltage and current measurements. (16)
15. (a) Explain the various tests conducted in high voltage insulators. (16)

Or

- (b) Explain the tests conducted on high voltage cables. (16)
