



B.E. DEGREE END SEMESTER EXAMINATIONS, Nov./Dec. 2011
Electrical and Electronics Engineering
Sixth Semester
EE381 High Voltage Engineering
(Regulation 2004)

Time : 3.00 Hours

Max. Marks : 100

Answer ALL Questions

PART-A (10x2=20 marks)

1. What are the major sources of overvoltages in a power system ?
2. What is the practical significance of volt-time characteristics.
3. Explain any one mechanism of vacuum breakdown.
4. Mention the factors that influence the breakdown in commercial liquids.
5. Define the shape of the lightning impulse voltage.
6. What is the principle of operation of resonant transformer?
7. Explain the D.C current measurement using Hall generators.
8. Compare capacitance potential dividers and capacitance voltage transformers.
9. Mention the dielectric tests to be conducted on a high voltage insulator.
10. What is the need for the generator calibration before testing each equipment?

PART –B (5x16=80 marks)

11. Mention the different methods of protecting the transmission lines against over voltages.
12. (a) Explain breakdown in solid dielectrics due to internal discharges.
(OR)
12. (b) Explain the breakdown in electro negative gases and derive the criterion for the same.
13. (a) Explain the multi stage impulse generators using Marx circuit. Explain how wave front and wave tail of the impulse can be altered.
(OR)
13. (b) Explain the different schemes of cascaded connection of transformer for producing high a.c voltages.

14. (a) Explain the working principle of generating voltmeter with its advantages and limitations.

(OR)

14. (b) Explain the sphere gap arrangement for measurement of high voltages along with the influencing factors.

15. (a) Explain the impulse voltage withstand test on a 100kVA, 11kV/433V ,three phase distribution transformer.

(OR)

15. (b) Explain A.C (wet and dry) withstand tests on a 33kV three phase air break isolator.