CBCS SCHEME

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15EE73

Seventh Semester B.E. Degree Examination, June/July 2023
High Voltage Engineering

Time: 3 hrs. Max. Marks: 80

Note: ***Answer FIVE full questions, choosing ONE full question from each module.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. Explain Townsend's current growth equation. **(08 Marks)**
b. Explain streamer theory of breakdown in gases. **(08 Marks)**

OR

2 a. Explain classification of liquid dielectrics. **(08 Marks)**
b. Explain intrinsic and electro mechanical breakdown in solid dielectrics. **(08 Marks)**

Module-2

3 a. Explain with neat diagram Van de Graaff generator. **(08 Marks)**
b. Explain generation of standard impulse wave shapes. **(08 Marks)**

OR

4 a. Explain Tripping and control of impulse generators. **(08 Marks)**
b. A 12 – stage impulse generator has 0.126μF capacitors. The wave front and wave tail resistances connected are 800Ω and 5000Ω respectively. If load capacitor is 1000pF. Find the front and tail times of the impulse wave produced. **(08 Marks)**

Module-3

5 a. Explain measurement of high AC voltages using series impedance voltmeters. **(08 Marks)**
b. Explain construction and working of electro static voltmeters. **(08 Marks)**

OR

6 a. Explain measurement of HVAC using sphere gap method. **(08 Marks)**
b. Explain Cathode Ray oscilloscope/Oscillographs for impulse measurements. **(08 Marks)**

Module-4

7 a. Explain mechanism of lighting strokes. **(08 Marks)**
b. Explain the characteristics of switching surges. **(08 Marks)**

OR

8 a. Explain the principle of insulation coordination on HV and EHV power system. **(08 Marks)**
b. Write notes on surge arrester. **(08 Marks)**

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Module-5

9 a. Explain high voltage Schering bridge for power frequency measurement. **(08 Marks)**
b. Explain partial discharge phenomenon. **(08 Marks)**

OR

10 a. Explain straight discharge detection circuit. **(08 Marks)**
b. Explain various methods of testing of insulators. **(08 Marks)**

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