

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 120651

Roll No.

B.TECH.

Theory Examination (Semester-VI) 2015-16

HIGH VOLTAGE ENGINEERING

Time : 3 Hours

Max. Marks : 100

Note : Attempt ALL sections.

Section-A

UPTU NOTES

1. Answer ALL parts of the following: (2×10 = 20)

- (a) Draw current growth characteristic of a gas subjected to uniform electric fields.
- (b) What is capacitance voltage transformer in high voltage measurements?
- (c) Define surge impedance of long transmission line.

- (d) How vacuum breakdown is different from normal breakdown of a gas?
- (e) Define 50% flashover voltage in reference to high voltage testing.
- (f) What are the anode and cathode Streamers?
- (g) What is resonant transformer?
- (h) What do you understand by 'tand' measurement.
- (i) Write down two criterion for breakdown in electronegative gases.
- (j) Write the principle and working of Hall generators for the measurements of high currents.

Section-B

2. Attempt any five parts of the following: (10×5 = 50)

- (a) How are the ripple and regulation minimized? Explain the working of Cockcroft-Walton circuit preferred for voltage multiplier circuits.

- (b) Explain the application of resonant transformer in EHVAC generation with neat diagrams?
- (c) Describe the circuit arrangement for producing impulse current waveforms in laboratories.
- (d) Describe generating voltmeter used for measuring high d.c. voltages.
- (e) Explain the necessity of earthing and shielding arrangements in impulse measurements and in high voltage laboratories.
- (f) Give a comparison of statistical and conventional methods of insulation coordination.

Section-C

Attempt any Two Part of the following: (15×2 = 30)

- 3. (a) Explain insulation co-ordination adopted for EHV systems.
- (b) Write brief notes on:
 - (i) Rod gaps used as protective devices
 - (ii) Ground wires for protection of overhead lines.

(3)

P.T.O.

4. Explain the different power frequency tests done on insulators?
Mention the procedure for testing.
5. Describe the various high voltage test done on lightning arrestors.

