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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE) PT (Sem.-9)
HIGH VOLTAGE ENGINEERING
Subject Code : BTEE-802
Paper ID : [75643]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. **Answer briefly :**

- (a) How will you overcome the disadvantages in the dc transmission?
- (b) What is commutation voltage of valves?
- (c) Name the sources of switching surges.
- (d) What is Townsend's condition for Breakdown?
- (e) What are the advantages of series resonant circuit?
- (f) Give the various abnormalities in a High Voltage system.
- (g) What are the electronegative gases?
- (h) What are the factors which affect breakdown of gaseous dielectrics?
- (i) What are the advantages of generating voltmeters?
- (j) What is creeping distance?

SECTION-B

2. Explain Streamer mechanism of breakdown in gaseous dielectrics.
3. Explain the principle of generation of high frequency ac high voltage briefly.
4. Explain the operation of a series capacitance voltmeter to measure high ac voltage.
5. Name the various controlling methods of over voltages due to switching and power frequency and discuss briefly.
6. Explain in detail the various techniques for the measurement of High DC voltages.

SECTION-C

7. Explain in detail all the tests done on transformers.
8. A steady state current of 5.5×10^{-8} A was noted during experimental a certain gas at 8 kV at a distance of 0.4 cm between plane electrodes. Keeping the field constant and reducing the distance to 0.1 cm resulted in a current of 5.5×10^{-9} A. Calculate the Townsend's primary ionization coefficient.
9. Write short notes on the following :
 - (a) Types of DC links
 - (b) Convertor station equipments
 - (c) Factor affecting the corona loss.
 - (d) Shunt compensation in EHV lines.