Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (EE) (Sem.–6)

# HIGH VOLTAGE ENGINEERING

Subject Code : BTEE-604A-18

M.Code. : 79318

Date of Examination : 19-07-22

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. Write briefly :**

(a) Give the various abnormalities in a high voltage system.

(b) What is ionization process?

(c) Name the sources of switching surges.

(d) Give the application of cathode ray oscillographs.

(e) What are the advantages of series resonant circuit?

(f) What is dielectric constant and loss factor?

(g) What are the electronegative gases?

(h) What are the factors which affect breakdown of solid dielectrics?

(i) What are the advantages of generating voltmeters?

(j) What is creeping distance?

## SECTION-B

2. Briefly describe a method of recording the occurrence of lighting in an overhead transmission line.

3. (a) List out the problems caused by corona discharge.

   (b) Discuss the characteristics of liquid dielectrics.

4. Explain the tripping and control of impulse generators with Trigatron gap arrangements.

5. Enumerate the various controlling methods of over voltages due to switching and power frequency and discuss briefly.

6. Explain the principle of generation of high frequency ac high voltage briefly.

## SECTION-C

7. What is CVT? Explain how CVT can be used for high voltage ac measurement.

8. A steady state current of $5.5\times10^{-8}$ A was noted during experiment in 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 $5.5 \times 10^{-9}$ A. Calculate the Townsend's primary ionization coefficient.

9. Explain with neat diagram the generation of high DC voltages using Van-de-graff generator. State the factor which limit the ultimate voltage developed.



**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student**.