H28

B.Tech. EXAMINATION, May 2019

(Eighth Semester)

(B. Scheme) (Main & Re-appear)

(EE, EEE)

EE442B

HIGH VOLTAGE ENGINEERING

Time : 3 *Hours*]   [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Each question carries equal marks.

Unit I

1. Explain penning effect with respect to gaseous discharge.

2. Describe briefly various mechanism of breakdown of solids.

Unit II

3. Explain clearly the basic principle of operation of an electro static generation. Describe with neat diagram the principle of operation, application and limitation of van de Graff generator.

4. Draw equivalent circuit of a 3-stage cascaded transformer and determine the expression for short circuit impedance of the transformer. Hence deduce an expression for the short circuit impedance of an n-stage cascaded transformer.

Unit III

5. Differentiate between the hot lightening stroke and cold lightening stroke.

6. Explain clearly how the rating of lightening arrester is selected. What is the best location of lightening arrester and why ?

Unit IV

7. (a) The leakage resistance of a counterpoise should be lower than its surge impedance. Why ?

   (b) What do you understand by protective angle ?

8. What is tower footing resistance ? What are the methods to reduce this resistance ? Why is it required to have this resistance as low as economically feasible ?