

Roll No. ....

**24434**

**B. Tech. 7th Semester (EE)  
Examination – December, 2019**

**HIGH VOLTAGE ENGINEERING**

Paper : EE-442-F

Time : Three Hours ] [ Maximum Marks : 100

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

*Note :* Attempt any *five* questions, selecting *one* question from each Section. Question Number 1 is *compulsory*. All questions carry equal marks.

**SECTION – A**

- 2. (a) What is meant by Intrinsic strength of a solid dielectric ? Explain electric breakdown of solid dielectrics. 10
- (b) Discuss intrinsic and electrochemical breakdown. 10
- 3. Explain recent trends in high voltage transmission with suitable example. 20

**SECTION – B**

- 4. (a) Describe distribution of voltage gradient on sub conductors of bundle. 10
- (b) Describe the various mechanism of breakdown in solids. 10
- 5. (a) Derive the expression for maximum surface voltage gradients for  $N \geq 3$ . 10
- (b) Explain the Electrostatic fields of sphere gaps. 10

**SECTION – C**

- 6. (a) Write a short note on tower foot resistance. 10
- (b) Explain the attenuation of travelling wave due to corona loss. 10
- 7. (a) Discuss lightning arresters and their characteristics. 10
- (b) Explain corona. Derive expression for corona loss formula. 10

24434- (P-3)(Q-9)(19) ( 2 )

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**SECTION – D**

8. (a) Describe generation of high alternating test voltage. 10
- (b) Write in detail about standard wave shapes for testing. 10
- 9 Write technical notes :
- (a) Impulse generator 10
- (b) General layout of H.V. Laboratory 10

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