

Roll No.

24431

B. Tech. 7th Semester (Electrical Engg.)

Examination – December, 2016

EHV AC/DC

Paper : EE-432-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 five questions in all, selecting one question from each Section. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) What are various factors that influences breakdown in gases ?
- (b) What is the mechanism of lighting stroke ?
- (c) How are rectangular current pulses generated for testing purposes.
- (d) Explain the term "attenuation and distortion" of travelling waves propagating on overhead lines.
- (e) What are the effects of corona on the transmission lines ?

5 × 4 = 20

SECTION – A

2. (a) Define townsend's first and second ionization coefficient. How is the condition for breakdown obtained in a townsend discharge ? 10
- (b) What is Paschen's law ? How do you account for the minimum voltage for breakdown under a given 'pxd' condition ? 10
3. (a) Explain the different mechanism by which breakdown occurs in a solid dielectric in particle. 10
- (b) Describe stressed oil volume theory of breakdown in liquids. 10

SECTION – B

4. (a) Describe with a neat sketch, the working of a Van de graph generator. What are the factors that limit the maximum voltage obtained ? 10
- (b) Explain the generation of high frequency A. C. high voltage. 10
5. Explain the different methods of producing switching impulse in test laboratories. 20

SECTION – C

6. Describe the generating voltmeter used for measuring high ac voltages. How does it compare with a potential divider for measuring high dc voltages ? 20
7. (a) Explain spark gap for measurement of high dc, ac and impulse voltages. 10
- (b) Describe various methods of testing of cables. 10

SECTION – D

8. (a) Describe parameters and characteristics of lightning strokes. 10
- (b) Explain the different aspects of insulation design and insulation coordination adopted for EHV system. 10
9. Write a short note on : 20
- (a) Switching surges
- (b) Surge Arrestors