

6E6072

Roll No. _____

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B.Tech. VI Semester (Main/Back) Examination, April/May - 2017

Elect. Engg.

6EE2A High Voltage Engineering

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 26

Instructions to Candidates:

Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal marks**. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Unit - I

1. a) Define Townsend's first and second ionization coefficients. Explain Townsend's criteria for a spark. (8)
- b) Explain clearly suspended particle mechanism of liquid break down. (8)

OR

1. a) What are treeing and Tracking? Explain clearly the two processes in solid dielectrics. (8)
- b) Discuss the application of gases in Power System. (8)

Unit - II

2. a) Explain the steps of generation of high D.C. Voltage in detail. (8)
- b) Discuss about the Mark's multistage impulse generator. (8)

OR

2. a) Explain the different schemes for cascade connection of transformer for producing very high voltage. (8)
- b) Write short note on Klydonograph. (8)

Unit - III

3. a) Discuss about high voltage schering bridge. What are its applications. (10)
b) What is partial discharge? Compare between wide band and narrow band partial discharge. (6)

OR

3. a) Explain the method by which resistivity of a dielectric can be measured. (8)
b) Write short notes on (8)
i) Dielectric constant ii) Loss factor

Unit - IV

4. a) Explain the simpson's theory of charge accumulation in thunder clouds. Describe the mechanism of lightning strokes. (10)
b) Explain refraction of travelling wave at T junction. (6)

OR

4. a) What are the mechanisms by which lightning strokes develop and induce over voltage on over head power lines. (10)
b) Explain the terms attenuation and distortion of travelling waves propagating on overhead lines. (6)

Unit - V

5. a) Explain insulation coordination problem. Describe the basic impulse insulation levels. (8)
b) Describe the volt time curves construction and purpose by drawing neat diagram and mentioning all specifications of curve in diagram. (8)

OR

5. Explain Various types of lightning arrestors in detail. (16)

