

6E3110

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[Total No. of Pages : 2]

6E3110**B.Tech. VIth Semester (Main/Back) Examination, June - 2010****Electrical Engineering****6EE2 High Voltage Engineering****Time : 3 Hours****Maximum Marks : 80****Min. Passing Marks : 24****Instructions to Candidates:**

Attempt overall 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 may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

Unit - I

1. a) Discuss the breakdown in electromagnetic gases taking suitable example. (8)
b) Describe the applications of gases in power system area. (8)

OR

- a) Discuss the suspended solid particle mechanism breakdown taking suitable example. (8)
b) Discuss the treeing and tracking breakdown in solids in detail. (8)

Unit - II

2. a) Describe the basic voltage multiplier circuit for high dc voltage generation. (8)
b) Discuss about the cascaded transformers for high ac voltage generation. (8)

OR

- a) Discuss the Mark's multi-stage impulse generator method for impulse voltage generation. (8)
b) Discuss the construction and operation of sphere gap method with regards to measurement of high voltage. (8)

Unit - III

3. Discuss the high voltage Schering bridge for the following :-
a) Measurement of capacitance.
b) Measurement of dielectric loss. (16)

OR

- a) Discuss about the partial discharge equivalent circuit. (8)
- b) Discuss about the partial discharge detection circuit. (8)

Unit - IV

4. Explain and discuss the following with regards to over voltage :-
- a) Causes of over voltage.
 - b) Over voltage due to lighting. (16)

OR

Explain and discuss the following with regards to travelling waves :-

- a) Travelling waves on transmission line-open end line.
- b) Attenuation of travelling waves. (16)

Unit - V

5. Explain and discuss the following with regards to over voltage protection :-
- a) Construction & operation of protection angle and protective zone.
 - b) Construction & operation of surge absorber and arcing horn. (16)

OR

Explain and discuss the following with regards to insulation co-ordination :-

- a) Volt-time curves.
- b) Coordination of insulation levels. (16)
