Total No. of Questions : 8] [Total No. of Printed Pages : 2

 Roll No. .....

EX–7101

B. E. (Seventh Semester)

EXAMINATION, Dec., 2011

(Electrical & Electronics Engg. Branch)

HIGH VOLTAGE ENGINEERING

(Elective – I)

(EX – 7101)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Discuss the advantages and limitations of high voltage transmission over low voltage transmission. 10
   (b) Give important applications of high voltages. 5
   (c) What are the various systems of power transmission ? 5

2. (a) What are the limitations of Townsend's theory when adopted to explain formation of discharge at high pressures ? 10
   (b) Explain sharply and weakly non-uniform fields and the effect of polarity on breakdown voltage in each case. 10

3. (a) Discuss the methods of minimizing corona power loss on transmission lines. 10

   (b) State various processes which lead to formation of bubbles in liquid dielectrics and explain clearly cavity breakdown mechanism in liquid dielectrics. 10

4. (a) What is the standard impulse wave as per I.S. recommendation ? Give the tolerances recommended. 8
   (b) Explain the operation of a multistage Marx impulse generator circuit. Give the procedure and describe the equipments. 12

5. Explain the following : 20
   (a) Cockroft Walton voltage multiplier circuit
   (b) Series resonant circuit and its advantages
   (c) Impulse current generator

6. (a) What are the problems associated with measurement of very high impulse voltages ? Explain how these can be taken care of during measurements. 8
   (b) Explain with neat diagram the principle of operation of an electrostatic voltmeter. Discuss its advantages and limitations for high voltage measurements. 12

7. (a) Describe various tests to be carried out on circuit breakers. 10
   (b) Explain the procedure for testing string insulator. 10

8. Write short notes on any *three* of the following : 20
   (a) Cavity breakdown
   (b) Tesla coil
   (c) Generating voltmeter
   (d) Surge current measurement
   (e) Testing of bushings

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