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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE/Electrical & Electronics) (2011 Onwards) (Sem.-7,8)

HIGH VOLTAGE ENGINEERING

Subject Code : BTEE-802

Paper ID : 71931

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Q1. Write briefly :**

- a) What are the factors influencing the spark over voltage of sphere gaps?
- b) Draw the equivalent circuit of a resistor unit used in HV measurement.
- c) Write the Paschen's law.
- d) What is importance of bundle conductor?
- e) What are two main reasons for long term break down in composite dielectrics?
- f) What do you mean by compensation?
- g) Define treeing and tracking.
- h) Write the insulating material used for circuit breakers.
- i) Write the various abnormalities in a High voltage system.
- j) What are impulse current shunts?

SECTION-B

2. Explain the working principle and operation of Generating voltmeters.
3. Explain the importance of insulation coordination briefly.
4. Describe the ageing and breakdown in composite dielectrics due to partial discharge.
5. Draw and explain the simple voltage multiplier circuit for generating HVDC.
6. Explain R-I.-characteristics of HVDC-system.

SECTION-C

7. Explain in detail the breakdown mechanism in non-uniform fields and phenomenon of Corona.
8.
 - a) Explain Cavitation and Bubble theory in liquid breakdown.
 - b) What are the components of multi impulse generator, explain?
9.
 - a) Explain suspended particle theory.
 - b) From the fundamental principle, derive Townsend's criteria for the breakdown of gaseous dielectric medium.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.