Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Electrical & Electronics) (2013 & Onwards) (Sem.–7,8)

HIGH VOLTAGE ENGINEERING

Subject Code : BTEE-802

M.Code : 75827

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

1. **Write briefly :**

   a. Write the purpose of using damper and spacers in high voltage transmission lines.

   b. Define Basic impulse insulation level in the domain of insulation coordination.

   c. State Townsend's criteria for gaseous breakdown.

   d. Why HVDC transmission is beneficial for long transmission lines?

   e. Define High voltage impulse.

   f. What kind of materials are used for high voltage cable insulation?

   g. Write application of potential divider.

   h. Mention two applications of synthetic liquid dielectric.

   i. Write purpose of using Schering bridge in high voltage laboratory,

   j. Define Partial discharge.

SECTION-B

2. Explain a typical scheme of connection of cascaded transformer for production of very high ac voltage.

3. Compare EHVAC and HVDC transmission systems.

4. Illustrate the characteristic and limits of audible noise generated due to corona in extra high voltage transmission lines.

5. Explain the principle and construction of an electrostatic voltmeter for very high voltages. What are its merits and demerits for high voltage ac measurement?

6. With necessary circuit diagram, explain how sphere gap can be used for protection in high voltage experiments?

SECTION-C

7. Draw a layout showing the major converter station equipment in a HVDC system. Also, narrate the function of those equipment.

8. Determine the ripple voltage and regulation of a 10 stage Cockcrofit-Walton type dc voltage multiplier circuit having a stage capacitance of 0.01 μF, supply voltage 100 kV at a frequency of 400 Hz and a load current of 10 mA.

9. Explain one method of controlled tripping of impulse generator. Why controlled tripping is necessary?

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.