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Total No. of Pages : 02

Total No. of Questions : 18

**B.Tech. (EE) PT (Sem.-9)
HIGH VOLTAGE ENGINEERING**

Subject Code : BTEE-802

M.Code : 75643

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**Answer briefly :**

1. Write any four advantages of bundling of conductors.
2. Define the corona.
3. How is transformer insulation divide?
4. Define the intrinsic strength of solid dielectric.
5. Write any four feature of epoxy resin insulation.
6. Write any four name of insulating liquid used in high voltage equipments.
7. Define the Paschert's law of gases.
8. Write the special features of high voltage rectifier valve.
9. Define the front and tail times of an impulse wave.
10. Write the name of different DC links.



SECTION-B

11. Explain various theories related to breakdown in solids and liquid insulators.
12. Derive expression for $(pd)_{min}$ and V_{bmin} of pashen's law. Assume $A = 12$, $B = 365$, and $\gamma = 0.02$ for air. Determine $(pd)_{min}$ and V_{bmin} .
13. How is a lossy dielectric represented in the form of a circuit model, explain it in detail?
14. What is a trigatron? Explain its functions and operations.
15. Explain how a sphere gap can be used to measure the peak value of voltages? What are parameters and factors that influence such voltage measurements?

SECTION-C

16. Explain the principle and construction of an electrostatic voltmeter for HV measurements. What are its merits and demerits for high voltage AC measurements?
17. Discuss the effect of the following parameters on the break down strength of liquid :
 - a) Hydrastatic pressure
 - b) Solid impurities
 - c) Moisture content in the oil
18. Write short notes on the following :
 - a) Radio interferences due to corona.
 - b) Cavitation and bubble theory for liquid breakdown.

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.