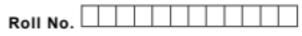


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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Electronics & Electrical)/(EE) (2012 Onwards) B.Tech. (Electrical & Electronics)/ (Electrical Engineering) (Sem.-7) HIGH VOLTAGE ENGINEERING Subject Code : BTEE-802 M.Code : 71931

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

Write briefly :

- Define the insulation co-ordination.
- 2. Define the critical HVDC voltage for corona.
- 3. Explain the causes of RI generation in transmission line.
- 4. Write any four disadvantage of HVDC transmission.
- 5. Define the streamer theory of breakdown.
- 6. Write any four name of insulating liquid used in high voltage equipments.
- 7. Explain the term electron attachment in gases.
- 8. What do you understand by intrinsic strength of a solid dielectric?
- 9. Define the front and tail times of an impulse wave.
- 10. What is trigatron gap?

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SECTION-B

- Explain why certain corona is inherent in new EHVAC lines and HVDC lines? Why
 corona-loss lines are not practically possible?
- 12. Explain any two theories that explain breakdown in commercial liquid dielectrics.
- 13. Indicate the solid insulation application in a) cable b) power capacitor.
- Explain the phenomenon treeing and tracking in solid insulating materials under electrical stress. How does it lead to breakdown?
- 15. Discuss any methods of measuring high dc voltages and also discuss its limitations.

SECTION-C

- Why is a Cock-Craft Walton circuit preferred for voltage multiplier circuits? Explain its working with a schematic diagram.
- a. Define Townsend's first and second ionization coefficients. How is the condition for breakdown obtained in a Townsend discharge?
 - b. What will be the breakdown strength of air be for small gaps (1 mm) and large gaps (20 cm) under uniform field conditions and standard atmospheric conditions?
- 18 Write short notes on the following :
 - a. Series and shunt compensation in EHV lines.
 - b. Measurement of impulse voltage.

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.

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