

**D 11972**

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Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE  
EXAMINATION, NOVEMBER 2016**

**EE/PTEE 09 706 L13—HIGH VOLTAGE ENGINEERING**

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all the questions.*

1. What is composite dielectric ?
2. Define surge voltage.
3. List the different types of CTs and PTs.
4. What is surge arrester ?
5. How the transmission line voltages are classified ? List their merits and demerits.

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

6. Explain the break-down in uniform fields.
7. What is "intrinsic strength" of solid dielectric ? Explain the break-down occur due to electrons in solid dielectric.
8. Explain impulse current wave form generation.
9. Write brief notes on factors effecting measurements of high voltages.
10. Write in detail the use of potential divider for measurement of impulse voltage.
11. With neat sketch explain the use of Schering bridge for the measurement of dielectric loss.

(4 × 5 = 20 marks)

**Part C**

*Answer all the questions.*

12. Explain the various break-down mechanism in the liquid dielectric.

*Or*

13. Explain the break down theories in gas dielectric with suitable theories.

**Turn over**

14. Give Marx circuit arrangement for multi-stage impulse generator.

*Or*

15. Explain the briefly the following circuits for the production of high dc voltages.

(i) Voltage multiplier circuit and (ii) Voltage doubler circuit.

16. What are the different types of resistive shunts used for impulse current measurements ? Discuss their characteristics and limitations.

*Or*

17. Give schematic arrangement of a impulse potential divider. Explain measurement procedure and arrangements used to minimize the error.

18. Explain the transformer ratio arm bridge for audio frequency range measurement.

*Or*

19. Explain briefly the various methods employed for the protection of overhead transmission line against lightning over voltages.

(4 × 10 = 40 marks)