

TIME:3Hrs

MARKS:80

NOTE

1. Question No 1 is Compulsory.
2. Solve any three out of the remaining.
3. Figure to the right side indicates marks.
4. Assume the suitable data and mention the same if required

Q.1

- Q.1 A What are electro-negative gases? Why is the breakdown strength higher in these gases compared to that in other gases? 05
- Q.1 B State various types of ionization processes w.r.t breakdown in gaseous dielectric medium. 05
- Q.1 C Discuss the various factors which affect breakdown of solids. 05
- Q.1 D State various methods to generate high voltage AC. 05

Q.2

- Q.2 A State and explain the Paschen's Law. 10
- Q.2 B Define Townsend's first and second ionization constant. How the condition for breakdown is obtained in Townsend discharge 10

Q.3

- Q.3 A Explain in brief purification process of commercial liquid dielectrics. 10
- Q.3 B Explain Electro-mechanical and Thermal breakdown in solid dielectric medium. 10

Q.4

- Q.4 A With neat diagram, explain the Cock-kroft Walton voltage multiplier circuit for generation of High voltage DC. 10
- Q.4 B Explain various rectifier circuits for generation of High Voltage DC.. 10

Q.5

- Q.5 A Explain with neat diagram, Resonant Transformer for generation of high voltage AC. 10
- Q.5 B Explain how sphere gap measurement can be used to measure the peak value of the voltage for the effect of voltage measurement, 10

Q.6

- Q.6 A Describe various tests that are carried on insulators as per IS Codes. 10
- Q.6 B Write a short note on: HV Laboratory Layout, Grounding and shielding. 10

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