

- (a) Withstand voltage
- (b) Disruptive discharge voltage
- (c) Flashover voltage
- (d) Impulse voltage
- h) Define thermal breakdown. (1)
- i) List out different testing methods on transformer. (1)
- j) Draw voltage doubler circuit. (1)
- k) Write properties of liquid di-electrical. (1)
- l) Define tracking in solid breakdown. (1)
- m) Write different application of high voltage. (1)
- n) Write advantages of high voltage. (1)

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- (a) Explain the Liquid Purification system with test cell. (07)
 - (b) Write note on paschen's law. (07)
- Q-3 Attempt all questions (14)**
- (a) Define the Townsend first & second ionization co-efficient. Also derive the equation for second ionization co-efficient $I = I_0 e^{\alpha d} / (1 - \gamma (e^{\alpha d} - 1))$. (07)
 - (b) What are "Treeing" & "Tracking"? Explain clearly the two processes in Solid dielectrics. (07)
- Q-4 Attempt all questions (14)**
- (a) Define the front and tail times of an impulse wave. What are the tolerances Allowed as per the specifications? (07)
 - (b) Write note on epoxy resins. (07)
- Q-5 Attempt all questions (14)**
- (a) Explain the Marx and Modified Marx Circuit for Impulse generator. (07)
 - (b) Explain the principle and constructions of an electrostatic voltmeter for high voltages. What are its merits and demerits for high voltage ac measurements? (07)
- Q-6 Attempt all questions (14)**
- (a) Describe with a neat sketch, the working of a Van de Graff generator. What are the factors that limit the maximum voltage obtained? (07)
 - (b) How a sphere gap can be used to measure the peak value of voltage? (07)
- Q-7 Attempt all questions (14)**
- (a) Explain Bubble and Stress oil volume theory. (07)
 - (b) Write note on resonant and cascade transformer. (07)
- Q-8 Attempt all questions (14)**
- (a) What is partial discharge? Explain partial discharge measurement. (07)
 - (b) Write short note on testing of insulator. (07)

