

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VIII ELECTRICAL : WINTER- 2022
SUBJECT : HIGH VOLTAGE ENGINEERING

Day : Friday

Time : 02:30 PM-05:30 PM

Date : 25-11-2022

W-13348-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data, if necessary.
- 4) Draw neat and labeled diagrams **WHEREVER** necessary.

- Q.1** a) How breakdown in electronegative gases takes place? (05)
b) Explain Paschen's law. (05)

OR

- Q.1** a) Explain Townsend's criterion for breakdown. (05)
b) How ionization process in gases takes place. (05)

- Q.2** a) Explain suspended particle mechanism. (05)
b) Explain cultivation and bubble theory. (05)

OR

- Q.2** a) What are different applications of oil in power apparatus? (05)
b) Explain stressed oil volume theory. (05)

- Q.3** a) Explain electromechanical breakdown. (05)
b) Write a note on Treeing and Tracking. (05)

OR

- Q.3** a) How breakdown due to internal discharges takes place. (05)
b) Explain thermal breakdown in solid dielectrics. (05)

- Q.4** a) How to generate high impulse current? (05)
b) Explain circuits for producing impulse waves. (05)

OR

- Q.4** a) Explain voltage multiplier circuit with neat diagram. (05)
b) Explain van de Graff generator. (05)

- Q.5** a) Explain spark gap for high voltage measurement. (05)
b) Explain Hall generators for dc measurement. (05)

OR

- Q.5** a) Explain cathode-Ray-Oscillograph for voltage and current measurement. (05)
b) Explain capacitance voltage transformers. (05)

- Q.6** a) Explain grounding of impulse testing laboratories. (05)
b) Explain size and dimension of equipment's in HV laboratories. (05)

OR

- Q.6** a) Explain use of earth return in HV laboratories. (05)
b) Explain activities and studies in UHV laboratories. (05)