

Total No. of Questions : 8]

SEAT No. :

P3792

[5561]-193

[Total No. of Pages : 2

B.E. (Electrical)

HIGH VOLTAGE ENGINEERING

(2012 Course) (Semester-II) (Elective-III) (403149A)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Answers Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data if necessary.*

- Q1)** a) State & explain various factors affecting the breakdown in gases. [4]
- b) State & explain with diagram causes of power frequency over voltages & switching surges. [8]
- c) Explain suspended particle theory of liquid breakdown & the factors affecting the breakdown. [8]

OR

- Q2)** a) Explain breakdown due to treeing in solids. [8]
- b) State & explain factors affecting the statistical time lag & formative time lag. [8]
- c) Explain Reynolds & Mason's Theory. [4]

- Q3)** a) Draw a neat sketch of Marx Circuit arrangement for multistage impulse generators. How is the basic arrangement modified to accommodate the wave time control resistances? [10]
- b) With a neat diagram explain working of Tesla Coil. State its advantages and applications. [8]

OR

P.T.O.

- Q4)** a) Explain the generation of High Impulse Current with a suitable diagram. Also describe its main parts. [10]
- b) Draw a neat diagram of 3 stage cascade transformer and explain its working. Also state its advantages and disadvantages. [8]

- Q5)** a) Describe any one method of partial discharge measurement with sketch. [8]
- b) How sphere gap is used for measurement of high voltage? Explain factors which affect on measurement. [8]

OR

- Q6)** a) With neat diagram explain measurement of dielectric constant & loss factor. [8]
- b) Describe current transformer with Electro-optical signal converter for EHV system. [8]

- Q7)** a) Explain various test conducted on cables. [8]
- b) Give classification of H.V. Laboratories along with size & ratings. [8]

OR

- Q8)** a) Discuss following tests carried out on porcelain insulator: [8]
- i) 50% Dry impulse flashover test
- ii) Impulse withstand test
- b) Explain design, grounding & layout of H.V. Labs. [8]

