Total No. of Questions : 4]

SEAT No. :

PA-10

[Total No. of Pages : 2

[5931]-16
S.E. (Electrical)
MATERIAL SCIENCE
(2019 Pattern) (Semester - I) (203142)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Attempt Q. No. 1 or Q. No. 2 and Q. No. 3 or Q. No. 4.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data if necessary.***
4) ***Neat diagrams must be drawn wherever necessary.***

Q1) a) What do you mean by polarization in dielectric material. Hence differentiate between ionic and orientation polarization. **[5]**

b) Explain: **[5]**

i) Pyro Electric Material

ii) Piezoelectric material

c) Give concept of negative tan delta. **[5]**

OR

Q2) a) What is the different mechanism of polarization? Explain. **[5]**

b) Define the following parameters of dielectric material. **[5]**

i) Electric field strength

ii) Electric flux density

iii) Susceptibility

iv) Polarizability

v) Permittivity

c) What is the difference between dielectric material and insulating material. **[5]**

P.T.O.

Q3) a) Define following terms with reference to dielectric material and insulating material. **[6]**

i) Breakdown strength

ii) Breakdown voltage

b) With neat diagram, explain method of measurement of dielectric strength of solid insulating material. Name the solid insulating material, which are tested in laboratory. **[9]**

OR

Q4) a) Define following terms with reference to dielectricmaterial. **[6]**

i) Primary ionization

ii) Secondary ionization

b) Explain objectives and equipment required for finding dielectric strength of insulating materials. **[9]**