Total No. of Questions : 4]

SEAT No. :

PC387

[Total No. of Pages : 2

[6359]-507
S.E. (Electrical Engineering) (Insem)
MATERIAL SCIENCE
(2019 Pattern) (Semester -III) (203142)

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

Instructions to the candidates:

1) ***Attempt Q.No.1 or Q.No.2, 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) Define following with their units: **[6]**

i) Polarization
ii) Polarizability
iii) Susceptibility

b) Derive Clausious Mossotti equation & state its assumptions. **[5]**

c) Illustrate with diagram electrostriction & piezoelectric effect with its applications. **[4]**

OR

Q2) a) Explain following terms with units: **[6]**

i) Loss tangent
ii) Ferro electricity
iii) Pyro electricity

b) Compare : polar & non polar materials. **[4]**

c) What is tan delta? Explain dielectric loss & derive equation for dielectric loss. **[5]**

P.T.O.

Q3) a) Describe measurement of flux density with Gauss meter. What is the principle of operation of Gauss meter? **[7]**

b) With neat circuit diagram & phasor diagram, explain measurement of dielectric loss angle (tan δ) by Schering Bridge as per IS 13585-1994**[8]**

OR

Q4) a) Explain the method of finding dielectric strength of air using sphere gap voltmeter with a neat diagram as per IS. **[7]**

b) Define Primary Ionization Coefficient and Secondary Ionization Coefficient. **[4]**

c) Define Dielectric Loss and loss tangent **[4]**

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