

1 Ans: Derivation of Claussius–Mosotti equation.

2 Ans: Electronic Polarisability $1.926 \times 10^{-28} \text{ Fm}^{-2}$

3 Ans: Polarisability 0 (Zero)

4 Ans: $4.3 \times 10^{-8} \text{ C/m}^2$

5 Ans: Magnetization $M=27 \text{ A/m}$; Magnetic flux density $B=1.26 \times 10^{-2} \text{ Wb/m}^2$

6 Ans: The material exhibits Ferromagnetism (For $M/M_s=0.9$ value), the materials are ferromagnetic materials, Ex. Iron, Nickel, Cobalt.

7. Ans: Diamagnetic materials and derivation of Langevin's Theory of Diamagnetism

8. Susceptibility 3×10^{-7} and Magnetic flux density $B= 1.26 \times 10^{-3} \text{ Wb/m}^2$