Shivaji College, University of Delhi

B.Sc (H) Physics

Solid State Physics (Theory)-2222012402

Date: 29/04/2024

Dr. Neeru Sharma

Total Marks- 12

9:00 AM — 10:00 AM > Monday

All questions are mandatory

1. A Solenoid wrapped around a bar of iron or other ferromagnetic material is called a(n)..... (1 Mark)

(a) electromagnet (b) magnet

(c) magnetic field (d) magnetic force

2. With increase in temperature the magnetic susceptibility of a ferromagnetic material will be.....(1 Mark)

(a) Increase (b) Decrease

(c) Remains constant (d) None of these

Each questions 3-6 are of 2.5 marks.

3. Distinguish between diamagnetic, paramagnetic and ferromagnetic materials with example.

4. Derive an expression for electronic polarizability in varying electric field.

5. What is hysteresis? Describe it occurrence on the basis of domain concept.

6. Distinguish between normal and anomalous dispersion

Total :- 46
Present - 32
Absent - 14

Dsharma

Date 1/04/2024

Assignment CSSP-IV sem

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2023-24

1) obtain the expression for interplaner spacing.

2) what is reciprocal lattice & describe its properties.

3) Prove $2\vec{K} \cdot \vec{G} + G^2 = 0$

4) what is effective Mass, deduce its formula.

5) Explain Drude-Lorentz free e^n theory & its failure

6) Prove Wiedmann-Frenz law

7) Prove the $\sigma \propto \frac{1}{T}$ for pure metal using concept of Drude-Lorentz Theory

8) Distinguish b/w semiconductor, metal & Insulator.

9) what is space lattice. P.F of fcc lattice

10) ~~K-P~~ Explain K-P Model?

Signing