Karimpur pannadevi college

5th Semester Internal assessment, 2021 (blended mode)

Sub:Physics Paper:H-CC-12 Full mark:20

- **Answer any ten questions from the following below-.** 2X10=20

1. How many types of crystals are there according to the binding forces?
2. Difine Bravais lattices.
3. Difine primitive basis vectors.
4. What are lattice constants or lattice parameters?
5. What is the coordination number of s.c, b.c.c, f.c.c and diamond structure?
6. Why diamond structure is less dense than any of the three Bravais lattices?
7. The first order (100) reflection angle is 18^{o} for a cubic crystal using X-rays of wavelength 1.54 Angstrom. Determine the distance between the (100) planes and the (111) planes of the crystal.
8. Draw the donor level in energy diagram of n-type semiconductor.
9. What is phonon?
10. The molar specific heat of a solid at constant volume is 2.77 J/K/mole at 36.8 K. Determine the Debye temperature of the solid.
11. Define Bragg's law.
12. What is Miller indices?
13. Why X-rays used in Bragg diffraction?
14. Write two advantages of reciprocal lattice.