GIET UNIVERSITY, GUNUPUR – 765022

B. Tech – 1st Semester (2023-2024): CYCLE TEST - II

Subject Code–23BBSBS10002 Engineering Physics

Time: 1.30 hrs | Maximum: 30 Marks

PART – A (2 x 5 = 10 Marks)

		CO #	Blooms Level
Q.1. Answer ALL questions			
a.	Define pyroelectric, piezoelectric and ferroelectric material.	3	2
b.	What is the acronym for Laser? Write properties of Laser.	4	2
c.	The critical temperature for mercury with an isotopic mass of 179.5u is 4.215 K. Calculate the critical temperature when isotopic mass changes to 199.4u	4	1
d.	Explain about different parts of optical fibre.	3	2
e.	What is crystal defect? Explain Schottky and Frenkel defect.		

PART – B (10 x 2 = 20 Marks)

		Marks	CO#	Bloom Level
Answer ALL Questions				
2.a.	Determine the reciprocal lattice of FCC lattice.	5	3	1
b.	Differentiate between Type-I and Type- II superconductor. Write any two application of superconductor.	5	3	2
	(OR)			
c.	Derive Bragg's law of X-ray diffraction in crystals.	5	3	1
d.	Write the properties of reciprocal lattice. A cubic crystal plane (122) with lattice parameters 9Å produces 2nd order diffraction with X-ray of wave length 2.5Å. Find the glancing angle.	5	3	2
3.a.	Discuss the working principle of a He-Ne Gas laser. Write application of He-Ne Gas Laser	5	4	2
b.	Differentiate among different types of magnetic materials with examples.	5	3	2
	(OR)			
c.	Write characteristics of Photoelectric effect. Ultraviolet radiation of wave length 3600Å incident on a potassium metal surface. If the photo electric work function of potassium is 2.2 eV, Calculate (i) energy of each photon and (ii) stopping potential.	5	2	2
d	Sketch block diagram of Fibre Optics Communication Link (FOCL).	5	2	2