LR23

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Course Code: U23PH1

LORDS INSTITUTE OF ENGINEERING AND TECHNOLOGY
(UGC AUTONOMOUS)

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B.E I- SEMESTER END EXAMINATION (Regular) –Feb-2024

Engineering Physics
(Common to CSE, CSD, Civil & Mech)

Time:* 3 *Hours **Date: 26-02-2024** ***Max. Mar***

Bloom's Taxonomy Levels (***BTL***)

1. Remember	2. Understand	3. Apply	4. Analyze	5. Evaluate	6. Create

Note: Question No. 1 is compulsory
Answer any 4 questions from Q.No.2 – Q.No.7

1.	a.	Draw (111) plane.		*CO*	
	b.	Name the characteristics of LASERs.	[2]	CO1	B
	c.	Find the wavelength of an electron when accelerated by a potential of 1600V.	[2]	CO2	BT
	d.	What are the critical conditions of a superconductor?	[2]	CO3	BTL
	e.	Write any two applications of Ferroelectrics.	[2]	CO4	BTL1
	f.	Calculate the wavelength of the GaAs semiconductor laser whose energy gap is 1.44 eV.	[2]	CO5	BTL1
2.	a.	Derive an expression for inter planar spacing for cubic crystal systems.	[2]	CO2	BTL2
	b.	Define point defect. Elaborate point defects with neat diagrams.	[6]	CO1	BTL3
3.	a.	Derive an expression for the relation between Einstein's coefficients.	[6]	CO1	BTL2
	b.	Discuss the priciple of an optical fibre. Write any four applications of optical fibers.	[6]	CO2	BTL3
4.	a.	Derive an expression for the Schrodinger's time independent wave equation.	[6]	CO2	BTL2
	b.	Explain the formation of p-n junction diode along with its I-V characteristics.	[6]	CO3	BTI
5.	a.	Explain the formation of domains. Discuss the Hysteresis curve.	[6]	CO3	BT
	b.	Distinguish Type-I and Type-II superconductors.	[6]	CO4	BT
6.	a.	Obtain an expression for electronic polarizability in terms of radius of atom.	[6]	CO4	B
	b.	Discuss any one Sol-Gel or CVD of the bottom-up methods to prepare nanomaterials.	[6]	CO5	E
7.	a.	With neat diagram, explain the construction and working of He-Ne laser.	[6]	CO5	
	b.	Distinguish between Spontaneous and Stimulated emissions.	[6]	CO2	

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