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G H Raisoni College of Engineering and Management, Pune

(An Autonomous Institution)

F.Y B. Tech (Engineering)

FIRST Term (2020-21)

CAE-II (2020 Pattern)

Engineering Physics (UBSL101)

[Time: 1 Hour] **[Max. Marks-15]**

COURSE OUTCOME:

Upon successful completion of this course, student will be able to:

1. Identify the trajectories of electron in uniform Electric and Magnetic fields and operate related devices.
2. Describe the phenomenon of interference & implement it for finding related parameters.
3. Explain the working of Laser & use it for different applications.
4. Identify various optoelectronic devices and use them for various applications.
5. Apply the knowledge of Quantum Mechanics to solve related problems.

Instructions to the candidates:

1. (CO1/CO2) at the beginning of question/sub question indicates the course outcome related to the question.
2. All questions compulsory.
3. Neat diagrams must be drawn wherever necessary.
4. Figures to the right indicate full marks.
5. Assume suitable data, if necessary.

CO	*Sub Questions*		*Marks*
CO3	***a)***	Elaborate the different characteristics of LASER.	[2]
	b)	Draw the constructional diagram of Semiconductor diode Laser and explain it.	[3]
	c)	Explain the use of Laser in branch specific applications.	[3]
	d)	State the following terms i) temporal coherence ii) Spatial coherence iii) Einstein Coefficient	[3]
		OR	
	e)	State the following terms i) Population Inversion ii) metastable state iii) Stimulated Emission	[3]
CO4	***a)***	Draw energy level diagram for PN junction diode in forward biased mode label it properly.	[2]
	b)	Brief about OLED and its applications.	[2]

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