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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-III (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*
CO1	***a)***	State and give formula for (i) Coulomb force in case of electron and proton (ii) Lorentz force in case of charge '*q*'	[2]
	b)	Prove that, for small value of angle, the pitch of the helix followed by an electron is independent of the angle.	[2]
CO2	***a)***	State Interference and give any four conditions to obtain steady interference pattern.	[3]
CO3	***a)***	Draw the working and constructional diagram of He-Ne Laser.	[3]
	b)	State the following terms i) Population Inversion ii) metastable state	[2]
CO4	***a)***	Brief about LED and its applications.	[3]

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