PRN No.	Total No. of Questions:
RBT24CB011	

F.B.122411E

JSPM's

Rajarshi Shahu College of Engineering, Tathawade, Pune- 411033

(An autonomous institute affiliated to Savitribai Phule Pune University)

Examination: Mid Semester (MSE)

Semester: I **Academic Year: 2024-25**

Programme: Comp, Civil, E&TC,Electrical.

Examination Class: F.Y. B. Tech.

Course Code: ES 1206 T Course Name and Pattern: Physics for Engineers (2023)

Duration: 1.15 hours. **Max. Marks: 30 Marks**

Instructions to the Candidates

1. Solve section All three sections A, B, C
2. Choose and answer **one** option from each question.
3. Assume suitable and necessary data wherever required.
4. Use of log table, scientific calculator, steam table is allowed.

Section A

Q. No.	Question	Bloom's Level	Marks	COs
1	Define MACH number and MACH angle?	BL1	3	CO1
	OR			
1	Write characteristics of shock wave.(any three)	BL1	3	CO1
2	State and Derive Lamberts Cosine law.	BL1	3	CO1
	OR			
2	Define 1) Reverberation time 2) Echo	BL2	3	CO1
3	Distinguish between Single mode and multi-mode fibers	BL2	3	CO2
	OR			
3	Define the terms 1) Critical angle 2) Numerical aperture	BL2	3	CO2
4	Define 1) population inversion 2)stimulated emission of radiation	BL2	3	CO2
	OR			
4	What is self-luminous object and non-Self luminous object? Explain in short.	BL1	3	CO2

Section B

Q. No.	Question	Bloom's Level	Marks	COs
5	Explain Principal Construction and Working of He-Ne Gas Laser also state its merits	BL3	5	CO2
	OR			
5	What is spring? Explain different types of spring	BL2	5	CO2

6	The distance between a pointed source of light and a screen, which was 60 cm is increased to 180 cm. Calculate the percentage change in intensity on the screen	BL3	5	CO2
	OR			
6	Explain application of laser in LIDAR also Calculate the angle of acceptance of a given optical fiber such that Light rays can travel through the fiber. Data given: $n_1 = 1.563$, $n_2 = 1.498$.	BL3	5	CO2

Section C

Q. No.	Question	Bloom's Level	Marks	COs
7	Explain forced electrical oscillations and obtain differential equation expressing forced electrical oscillation. Also Calculate the reverberation time of hall having volume 5000 m^3 and Surface area of sound absorbing material is 3500 m^2. Given average coefficient of absorption 0.078 OWU	BL3	8	CO3
	OR			
7	Explain Principal Construction and Working of Solid state state Ruby Laser also state its De-Merits	BL3	8	CO3