WALCHAND COLLEGE OF ENGINEERING

(Government Aided Autonomous Institute)
Vishrambag, Sangli – 416415

First Year B.Tech. Re-Registered Group A & Group B
MSE, EVEN SEMESTER, AY 2023-24
Engineering Physics (6PH101)

MSE

N: _____

& Date: Tuesday, 27/02/2024 Time: 11.30 pm to 1.00 pm Max Marks: **30**

IMP: Verify that you have received question papers with correct course code, branch etc.

structio ns

a) All questions are compulsory.
b) Writing question number on answer book is compulsory otherwise answers may not be assessed.
c) Assume suitable data wherever necessary.
d) Figures to the right of question text indicate full marks.
e) Mobile phones, smart gadgets and programmable calculators are strictly prohibited.
f) Except PRN anything else writing on question paper is not allowed.
g) Exchange/Sharing of stationery, calculator etc. not allowed.

xt on the right of marks indicates course outcomes (Only for faculty use)		Marks	
A)	Define matter waves. Derive an expression for wavelength of matter waves.	**5**	CO2
B)	What is Compton effect? State the formula for Compton shift.	**3**	CO2
C)	State Heisenberg's uncertainty principle.	**3**	CO1
D)	Calculate de-Broglie's wavelength of proton moving with velocity equal to $\frac{1}{20}^{th}$ velocity of light. Mass of proton is 1.6×10^{-27} kg.	**2**	CO3
A)	Distinguish between diffraction and interference.	**4**	CO1
B)	Compare zone plate with convex lens.	**4**	CO1
C)	The image of point source of light of wavelength 5890A° at a distance 1 meter from zone plate is observed at 2 meter on other side. Calculate i) Focal length of zone plate ii) Power of zone plate iii) Diameter of zone plate.	**3**	CO3
A)	Explain in brief Magnetostriction effect.	**3**	CO1
B)	State any THREE properties of ultrasonic waves.	**3**	CO1

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