GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Basic Sciences

Bachelor of Science Honours in Physics
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem I - C1UD101T - Mathematical Physics I

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Define Taylor and Binomial series.	K2	(2)
2)	Define scalar product of two vectors. Show that scalar product of two vectors in invariant under rotation.	K1	(3)
3)	Explain scalar triple product with interpretation in terms of area.	K2	(4)
4)	Giving the diff. equation by eliminating arbitrary constants and its order of this eqn. $y2 = A\,x2 + B\,x + C$	K2	(6)
5)	Solve the diff.eqn. $\cos(x + y)\,dy = dx$	K3	(6)
6)	Solve the diff. eqn. $(x + 1)dy/dx - y = ex\,(x + 1)2$.	K3	(9)
7)	Simplify the method for finding the complementary function of diff. eqn.	K4	(8)
8)	Examine these two eqns. (i) $d2y/dx2 - 8\,dy/dx + 15y = 0$, (ii) $d2y/dx2 - 6\,dy/dx + 9y = 0$	K4	(12)

OR

	Analyze the case when t increases indefinitely in the following eqn. $L\,di/dt + Ri = E0 \sin wt$. Where L , R and E0 are constant.	K4	(12)