Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)
Diploma in Engineering, Semester-I, January 2026
Engineering Physics (25DBS11001)
(Common to All)

Time: 3 Hrs | Full Marks:70 Marks

Answer ALL questions
(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

	Q.1. Answer ***ANY FIVE*** questions	CO #	Blooms Level
a.	What do you mean by Unit?	CO1	K1
b.	Define the triangle law of vector addition and write the resultant magnitude.	CO2	K2
c.	Two forces of 5N and 20N are acting at angle 120 degree between them. Find the resultant force in magnitude and direction.	CO3	K2
d.	Write down all the equations of motion along a straight line?	CO4	K2
e.	A man walks 3 km east and then 4 km north. What is his total distance and displacement?	CO2	K2
f.	Draw the diagram of projectile motion with all indications.	CO5	K1

PART – B **(15 x 4 = 60 Marks)**

	Answer **ANY TWO (a, b OR c, d)** from all the questions below	Marks	CO #	Blooms Level
2. a.	Define physical quantities. Explain fundamental and derive units with examples.	8	CO1	K1
b.	Derive dimensional formula of work, power and momentum.	7	CO1	K1
	(OR)			
c.	State principle of homogeneity. Check $V^2 - U^2 = 2as$ dimensionally correct.	8	CO1	K2
d.	Explain uses and limitations of dimensional analysis.	7	CO1	K2
3.a.	Define the Projectile motion and derive the equation of trajectory.	7	CO2	K1
b.	What do you mean by maximum height of projectile? Find the expression for it.	8	CO2	K1
	(OR)			
c.	Derive the expression for time of flight.	7	CO2	K1
d.	A Projectile is fired with a velocity of 20 m/s at an angle 45 degree to the horizontal then calculates time of flight.	8	CO2	K2
4.a.	Define work. Explain positive work, negative work and zero work with examples.	8	CO3	K1
b.	A force of 50N acts on a body and produces a displacement of 10 min the direction of the force, then calculate the work done.	7	CO3	K2
	(OR)			
c.	State Newton's law of gravitation.	8	CO3	K1
d.	Distinguish between mass and weight.	7	CO3	K1
5.a.	State the parallelogram law of vector addition. Find out the expression for resultant vector.	8	CO4	K1
b.	Define dot product and cross product of vectors. Mention their properties	7	CO4	K2
	(OR)			
c.	Define scalar and vector quantities. Explain types of vectors.	8	CO5	K1
d.	Define specific heat and latent heat.	7	CO5	K1

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