Total number of printed pages: **Programme (D)/1st /DPH105/101**

2022

APPLIED PHYSICS-I

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer question No.1 and **any four** questions from rest.*

1.		Fill up the blanks.	2 x 10 =20
	a.	The dimensional formula of work is….	
	b.	The resultant of dot product of two vectors is…….	
	c.	The relationship between linear velocity and angular velocity is..	
	d.	The SI unit of work is…..	
	e.	The acceleration due to gravity at the centre of earth is ..	
	f	Poisson's ratio is the ratio of ……to……	
	g.	The relation between α, β and γ is……..	
	h.	Latent heat of vaporization of water is……cal/gm.	
	i.	Thermopile is used to detect……..	
	j.	The audible range of frequency for a normal human ear is……..	
2	a.	What is the difference between oscillatory and non-oscillatory motion?	5
	b.	What is difference between scalar and vector quantities?	5
	c.	Define energy, work and power.	10
3	a.	How the acceleration due to gravity varies with altitude? Derive the formula.	10
	b.	What is the banking of the road? Derive the formula for determining the angle of banking of the road.	10
4	a.	Write down Newton's 1st, 2nd and 3rd laws of motion.	10
	b.	Write down the difference between centripetal and centrifugal forces.	10
5.	a.	What is Hooke's law? Define Young's modulus, Bulk modulus and shear modulus with their mathematical expression.	10
	b.	Explain about linear expansion, superficial expansion and cubical expansion of solids.	10
6.	a.	Define: Specific heat capacity, thermal capacity, water equivalent, latent heat of fusion, latent heat of vaporization.	2 x 5 = 10