

Subject Code: 16BH1T10

R16

PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)
I B.Tech I Semester Supplementary Examinations, July - 2024

APPLIED PHYSICS
(Common to ECE, CSE and IT)

Time: 3 hours

Max. Marks: 60

Question Paper Consists of **Part-A** and **Part-B**
Answer **ALL** questions from **Part-A**,
Answer any **FOUR** Questions from **Part-B**

PART-A					
[6x2=12M]					
Q.No.		Question	BTL	CO	Marks
1	a)	Explain the principle of Superposition of waves.	K2	CO1	[2M]
	b)	Define diffraction Grating.	K1	CO2	[2M]
	c)	Explain Quarter wave plate and half wave plate.	K2	CO3	[2M]
	d)	Explain the Principle of Optical Fiber.	K2	CO4	[2M]
	e)	Write Physical Significance of Wave function.	K1	CO5	[2M]
	f)	What is Intrinsic Semiconductors.	K1	CO6	[2M]
PART-B					
[4x12=48M]					
2	a)	Derive the Expression for diameters of dark and bright Newton's rings	K2	CO1	[8M]
	b)	In a Newton's rings experiment, the diameter of the 15 th ring is 0.59cm and That of 5 th ring is 0.336cm. if the radius of curvature of lens is 100cm, find the wavelength of light.	K3	CO1	[4M]
3	a)	Describe the formation of Fraunhofer diffraction pattern due to single slit.	K2	CO2	[6M]
	b)	Discuss the Rayleigh's Criterion for resolving power.	K2	CO2	[6M]
4	a)	Describe the construction and working of Ruby Laser.	K2	CO3	[6M]
	b)	Explain the characteristics of Laser.	K2	CO3	[6M]
5	a)	State and Explain Stoke's theorem.	K1	CO4	[6M]
	b)	Derive expressions for Acceptance angle of an optical fiber.	K2	CO4	[6M]
6	a)	Derive Time Independent Schrodinger wave equation.	K2	CO5	[6M]
	b)	What are the salient features of Quantum free electron theory.	K1	CO5	[6M]
7	a)	Define Hall Effect? Derive an expression for Hall coefficient?	K1	CO6	[8M]
	b)	Write a note on Bloch theorem.	K1	CO6	[4M]