R-24

GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN

(Autonomous)

(Affiliated to Andhra University, Vishakhapatnam)

I B.Tech. II Semester Regular Examinations, June/July - 2025

ENGINEERING PHYSICS

(Common to CSE, IT)

1.	All questions carry equal marks
2.	Must answer all parts of the question at one place

Time: 3 Hours Max Marks: 70

UNIT-I

		<u>UNIT-I</u>	Μ
1	(a)	Explain interference in thin films in reflected light and build an expression for	(10)
	(1)	maxima condition and minima condition.	(\mathbf{A})
	(b)	State and explain Brewster's law.	(4)
2	()		(10)
2	(a)	Derive an expression for resultant intensity due to single slit diffraction.	(10)
	(b)	Summarize the phenomenon of double refraction in calcite crystal.	(4)
3	(a)	What is Carnot's cycle? Build an equation for the efficiency of Carnot's heat engine.	(10)
5	(\mathbf{u})	Analyze the relation between entropy and the second law of thermodynamics	(10) (4)
	(0)	(OR)	(1)
4	(a)	What is an adiabatic process? Derive an expression for the work done in an adiabatic process.	(10)
	(b)	Find the efficiency of Carnot's engine working between steam and ice points.	(4)
		<u>UNIT-III</u>	
5	(a)	Applying Gauss's law of electrostatics, develop an expression for the electric field due to uniformly charged sphere at a point (i) outside the sphere and (ii) inside the sphere.	(10)
	(b)	Explain Lenz's law and mention its significance.	(4)
		(OR)	
6			
	(a)	Derive an equation for the electromagnetic wave equation in free space using Maxwell's equations	(10)
	(a) (b)	Derive an equation for the electromagnetic wave equation in free space using Maxwell's equations. State (i) Biot-Savart's law and (ii) Ampere's law.	(10)
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