HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE (AUTONOMOUS) I B.TECH I SEMESTER END REGULAR EXAMINATIONS, FEB - 2023 ENGINEERING PHYSICS

Answer all the questions from each UNIT (5X14=70M)

Time: 3 hours

(CE Branch)

Max. Marks: 70

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
1.	a)	Describe the theory of interference in thin films by reflection and derive the conditions of bright and dark regions.	[10M]	1	2
	b)	Explain the colors formation in thin film due to interference.	[4M]	1	2
OR					
2.	a)	Explain the theory of Fraunhofer diffraction due to double slit and derive the conditions for maxima and minima.	[10M]	1	2
	b)	Mention the differences between interference and diffraction?	[4M]	1	1
UNIT-II					
3.	a)	Explain the principle, construction and working of Ruby laser with diagrams.	[10M]	2	2
	b)	Describe the characteristics of laser light.	[4M]	2	2
OR					
4.	a)	What is the polarization? Explain the types of polarization light.	[8M]	2	2
	b)	Explain the double refraction method for polarized light.	[6M]	2	2
UNIT-III					
5.	a)	Describe the structure and packing fractions of Simple cubic, Body centered cubic and Face centered cubic crystals.	[10M]	3	2
	b)	Define the space lattice and unit cell.	[4M]	3	1
OR					
6.	a)	State and explain Bragg's law of x-ray diffraction.	[7M]	3	2
	b)	Derive the expression for inter planner spacing in cubic crystal.	[7M]	3	2
UNIT-IV					
7.	a)	Describe the damped harmonic oscillator with necessary damping	[10M]	4	2
	b)	Mention the important characteristics of Simple harmonic motion with necessary expressions.	[4M]	4	1
OR					
8.	a)	Derive the expression for velocity of transverse wave along stretched string.	[8M]	4	2
	b)	Explain the concept of harmonics and overtones.	[6M]	4	2
UNIT-V					
9.	a)	Define the reverberation time and derive the Sabine's formula for reverberation time.	[10M]	5	2
	b)	Explain the basic requirements of an acoustically good hall.	[4M]	5	2
OR					
10.	a)	Explain the electronic, ionic and orientation polarizations in dielectric materials.	[10M]	5	2
	b)	Describe the hysteresis loop in ferromagnetic materials.	[4M]	5	2

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