Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year I Semester Supplementary Examinations November-2022
ENGINEERING PHYSICS
(Common to CE & AGE)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Explain the theory of interference of light due thin films.	L2	6M
	b	Develop an equation to determine the wavelength of the monochromatic light by forming Newton's rings.	L3	6M

OR

2	a	Derive the expression for wavelength of the light source by using diffraction grating.	L3	6M
	b	Explain the Fraunhofer diffraction due single slit.	L2	6M

UNIT-II

3	a	Define packing factor. Derive the packing factor of BCC	L3	6M
	b	Discuss the various types of crystal system with neat sketch.	L2	6M

OR

4	a	Draw the crystal planes for the following miller indices: i) 101 ii) 100 iii) 001	L2	6M
	b	Describe the Bragg's law of X-ray diffraction.	L2	6M

UNIT-III

5	a	Write the Sabine's formula for reverberation time. State the factors controlling the reverberation time.	L1	6M
	b	What is the importance of acoustics in engineering?	L1	6M

OR

6	a	Explain the piezoelectric generator to produce ultrasonic waves.	L2	6M
	b	List the properties of ultrasonic waves.	L1	6M

UNIT-IV

7	a	Classify different types of beams.	L2	6M
	b	Derive the relation between various elastic moduli.	L3	6M

OR

8	a	Develop an expression for the internal energy due to strain.	L3	6M
	b	What is Hook's law? Explain.	L1	6M

UNIT-V

9	a	Explain the BCS theory of superconductors.	L2	6M
	b	List the applications of superconductors.	L1	6M

OR

10	a	Describe the ball milling technique for synthesis nanomaterials.	L2	6M
	b	Outline the applications of nanomaterials.	L2	6M

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