

Reg. No:

--	--	--	--	--	--	--	--	--	--

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)**B.Tech I Year I Semester Regular & Supplementary Examinations May-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 formation of Newton's rings with necessary theory and write the conditions for bright and dark rings. L2 6M
- b Distinguish between Interference and diffraction. L4 6M

OR

- 2 a Differentiate Fraunhofer diffraction and Fresnel diffraction L2 6M
- b Derive the conditions for principle maxima, secondary maxima and minima in case of Fraunhofer diffraction due to double slit. L3 6M

UNIT-II

- 3 a Define the following i) coordination number ii) atomic packing factor iii) unit cell L1 6M
- b Develop an expression for interplanar spacing in terms of miller indices. L3 6M

OR

- 4 a What are miller indices? Outline the procedure to find the miller indices. L2 6M
- b Describe the powder method of X-ray diffraction. L2 6M

UNIT-III

- 5 a Define absorption coefficient of sound and derive an expression for it. L3 6M
- b List the basic requirements of an acoustically good hall. L1 6M

OR

- 6 a Outline the detection methods of ultrasonic waves. L2 6M
- b Summarize the applications of ultrasonic waves. L2 6M

UNIT-IV

- 7 a Define stress. Explain the different types of stresses. L2 6M
- b Describe the behavior of wire under increasing load. L2 6M

OR

- 8 a Deduce an expression for energy stored per unit volume in stretched wire. L4 6M
- b What is Young's modulus? Obtain the expression between Young's modulus and rigidity modulus. L4 6M

UNIT-V

- 9 a Explain Meissner's effect. L2 6M
- b Distinguish between Type-I and Type-II superconductors. L4 6M

OR

- 10 a Discuss the principles of nanomaterials. L2 6M
- b Explain the sol-gel technique to synthesize nanomaterials. L2 6M

*** END ***