Q.P. Code: 16HS603 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B. Tech I Year I Semester Supplementary Examinations Feb-2021

ENGINEERING PHYSICS

(Common to CE, EEE, ME & AGE)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	a	Summarize the formation of Newton's rings with necessary theory.	7M
	b	Explain the characteristics of a laser light.	5M
		OR	
2	a	Demonstrate the construction and working of He-Ne laser with neat diagram	7M
	b	Distinguish between step index and graded index fiber.	5M

UNIT-II

3	a	Show that FCC is most closed packed structure than SC and BCC.	8M
	b	Write the important features of Miller indices.	4M
		OR	
4	a	Describe the production of ultrasonic by using piezo electric method.	7M
	b	List the basic requirements of acoustically good hall.	5M

UNIT-III

5	a	What is de-Broglie's hypothesis? Derive the expression for de-Broglie's wavelength for an electron.	6M
	b	Write a short note on Heisenberg uncertainty principle.	6M
		OR	
6	a	Derive an expression for electrical conductivity in metals by using classical free electron theory.	5M
	b	Explain the origin of energy band in solids.	7M

UNIT-IV

7	a	Explain the drift current in semiconductors.	6M
	b	Distinguish between direct and indirect band gap of semiconductors.	6M
		OR	
8	a	Explain the hysteresis curve of ferro magnetic material.	6M
	b	Classify the magnetic materials based on spin magnetic moment.	6M

UNIT-V

9	a	What is superconductivity? Give the properties of superconductors.	6M
	b	Outline the BCS theory of superconductors.	6M
		OR	
10	a	Summarize the basic principle of nanomaterials.	6M
	b	Explain the synthesis of nanomaterials by using Ball milling technique.	6M

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