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

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B. Tech I Year II Semester Supplementary Examinations Dec 2019

ENGINEERING PHYSICS

(ECE, CSE & CSIT)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	**a**	Describe the important characteristic of laser beam?	**4M**
	b	Explain the construction and working principle of He-Ne laser with suitable energy level diagram.	**8M**
		OR	
2	**a**	What is the acceptance angle of an optical fibre and derive an expression for it.	**8M**
	b	An optical fibre has a core refractive index of 1.44 and cladding refractive index of 1.40. Find its acceptance angle and numerical aperture.	**4M**
		UNIT-II	
3	**a**	What are Miller indices? Mention the procedure to find Miller indices.	**9M**
	b	Draw miller indices of planes (1 0 0), (1 0 1) and (0 1 1)	**3M**
		OR	
4	**a**	Define Reverberation and Reverberation time?	**4M**
	b	What are the basic requirements of acoustically good hall?	**8M**
		UNIT-III	
5	**a**	Derive Schrödinger's time dependent wave equation.	**8M**
	b	Explain the physical significance of wave function.	**4M**
		OR	
6	**a**	Explain the origin of energy bands in solids.	**4M**
	b	Classify the solids into conductor, semiconductor and insulators based on band theory.	**8M**
		UNIT-IV	
7	**a**	What are intrinsic and extrinsic semiconductors?	**4M**
	b	Derive the expression for intrinsic carrier concentration.	**8M**
		OR	
8	**a**	Explain B-H curve of ferromagnetic material.	**7M**
	b	Distinguish hard and soft magnetic materials.	**5M**
		UNIT-V	
9	**a**	Explain Meissner effect?	**4M**
	b	Distinguish Type-I and Type-II superconductors.	**8M**
		OR	
10	**a**	What is nanomaterial? Write the classification of nanomaterials.	**4M**
	b	Explain the basic principle of nanomaterials.	**8M**

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