

<b>St. Peter’s Engineering College (Autonomous)</b> <b>Dullapally (P), Medchal, Hyderabad – 500100.</b> <b>II - Mid Term Examination – JUNE 2024</b>					Dept.	:	S&H	
					Academic Year 2023-24			
Subject Code	:	AS22-00BS11	Subject	:	Applied Physics			
Class/Section	:	B. Tech. (A)	Year	:	I	Semester	:	II
Duration	:	120 Min	Max. Marks	:	30	Date:	:	

BLOOMS LEVEL					
Remember	L1	Understand	L2	Apply	L3
Analyze	L4	Evaluate	L5	Create	L6

\*\*\*\*\*

**PART – A (10x1M = 10M)****Note: Answer all Questions. Each Question carries equal marks.**

Q. No	Question (s)	Marks	BL	CO
<b>UNIT - IV</b>				
<b>1</b>	a) What is nanoparticle?	1M	L1	C122.4
	b) What is quantum confinement in nanotechnology?	1M	L2	C122.4
	c) What are the applications of nanomaterials?	1M	L1	C122.4
	d) Mention the examples of two- dimensional Nano particles.	1M	L2	C122.4
	<b>UNIT – V</b>			
	e) Write properties of LASER beam.	1M	L1	C122.5
	f) Explain the spontaneous emission.	1M	L2	C122.5
	g) What are the main components in optical fiber communication system?	1M	L1	C122.5
	h) What do you mean by the single mode optical fiber?	1M	L2	C122.5
	<b>UNIT – III</b>			
	i) What is the ferroic material?	1M	L2	C122.3
	j) Define Type-I superconductor.	1M	L2	C122.3

**PART – B (20M)**

Q. No	Question (s)	Marks	BL	CO
<b>UNIT - IV</b>				
<b>2</b>	a) Differentiate between physical vapor and chemical vapor deposition technique of nanofilm synthesis.	4M	L2	C122.4
	b) Describe ball milling method used for nanoparticle synthesis.	4M	L3	C122.4
<b>OR</b>				

3	a) Discuss briefly about the XRD technique for characterizing the nano materials.	8M	L3	C122.4
UNIT – V				
4	a) What are the three quantum processes in laser action? Find the relation between Einstein coefficients.	4M	L2	C122.5
	b) Discuss the phenomena of total internal reflection in Optical fibers.	4M	L2	C122.5
OR				
5	a) Explain the construction and working of Ruby Laser.	8M	L3	C122.5
UNIT – III				
6	a) Explain the working principle of crystal oscillator.	4M	L3	C122.3
OR				
7	a) Distinguish the soft and hard magnetic materials.	4M	L3	C122.3

\*\*\*\*\*