MODEL-2

St. Peter's Engineering College (Autonomous) Dullapally (P), Medchal, Hyderabad – 500100. I - Mid Term Examination – March 2024						Dept.	:	S&H
						Academic Year 2023-24		
Subject Code	:	AS22-00BS11	Subject	:	Applied Physics			
Class/Section	:	B. Tech. (ECE/EEE)	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

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

Q. No	Question (s)	Marks	BL	CO
	UNIT - I			
1	**a) W**rite de Broglie relation?	**1M**	L1	C122.1
	b) What is photolectric effect?	**1M**	L2	C122.1
	c) Explain the Born's interpretation of wavefunction?	**1M**	L2	C122.1
	d) Write difference between matter wave and electromagnetic wave?	**1M**	L2	C122.1
	UNIT-II			
	e) What is intrinsic and extrinsic semiconductors?	**1M**	L1	C122.2
	f) Describe the working principle of PIN diode?	**1M**	L1	C122.2
	g) Distinguish direct and indirect band gap semiconductors?	**1M**	L2	C122.2
	h) Explain V-I characteristics of a P-N junction diode?	**1M**	L2	C122.2
	UNIT-III			
	i) Define feroelectricity with examples?	**1M**	L1	C122.3
	j) Interpret classification of polarizations?	**1M**	L2	C122.3

PART – B (20M)

Q. No	Question (s)	Marks	BL	CO
	UNIT – I			
2	a) Derive Schrodinger's time independent wave equation for a particle.	**4M**	L2	C122.1
	b) Derive expression for photoelectric relation.	**4M**	L2	C122.1
	OR			
3	Write construction and working of Davisson Germer experiment with the help of neat diagram.	**8M**	L2	C122.1
	UNIT – II			
4	Explain usage of Zener diode in voltage regulation.	**4M**	L2	C122.2
	Describe the principle of operation and characteristics of PN junction diode.	**4M**	L2	C122.2
	OR			
5	Explain the figure of merits of an LED device.	**4M**	L2	C122.2
	Explain working principle and structure of Solar Cell.	**4M**	L2	C122.2
	UNIT-III			
6	Explain pyroelectric material	**2M**	L2	C122.3
	Define pizoelectric materials with example?	**2M**	L1	C122.3
	OR			
7	Differentiate between Ferro, piezo and pyro electric properties	**4M**	L4	C122.3