Course Code: 1920006 **Roll No:** **MLRS- R19**

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

I B.TECH II Sem Supplementary Examination, May 2022

Applied Physics
(EEE, CSE, IT)

Time: 3 Hours. **Max. Marks: 70**

Note: 1. Question paper consists: Part-A and Part-B.
2. In Part – A, answer all questions which carries 20 marks.
3. In Part – B, answer any one question from each unit.
Each question carries 10 marks and may have a, b as sub questions.

PART- A

(10*2 Marks = 20 Marks)

1.	a)	What are the limitations of wave function?	2M	CO1	BL1
	b)	What is a black body?	2M	CO1	BL1
	c)	Define Fermi energy level at TK.	2M	CO2	BL1
	d)	What are intrinsic and extrinsic semi-conductors?	2M	CO2	BL1
	e)	List out the materials which are used for fabrication of semiconductor laser.	2M	CO3	BL1
	f)	Draw symbol of diode and LED.	2M	CO3	BL1
	g)	What are the conditions to achieve Laser action?	2M	CO4	BL1
	h)	Mention few applications of Optical fibers.	2M	CO4	BL1
	i)	Define polarization.	2M	CO5	BL1
	j)	What is hysteresis?	2M	CO5	BL1

PART- B

(10*5 Marks = 50 Marks)

2	Derive an expression for Schrodinger's time independent wave equation.	10M	CO1	BL6
	OR			
3	Explain Born's interpretation of the wave function.	10M	CO1	BL4
4	Elaborate Zener diode and its V-I Characteristics.	10M	CO2	BL4
	OR			
5	Explain formation of PN junction diode.	10M	CO2	BL4
6	Explain the construction and working of LED. What are the advantages and disadvantages of LEDs in electronic display?	10M	CO3	BL4
	OR			

7	With neat diagram, discuss construction and principle of Solar cell.	10M	CO3	BL2
8	With the help of suitable diagrams, discuss the principle, construction and working of Carbon dioxide laser	10M	CO4	BL2
	OR			
9	With the help of suitable diagrams, discuss the principle, construction and working of He-Ne laser.	10M	CO4	BL2
10	What is Piezo electricity? Explain in detail.	10M	CO5	BL4
	OR			
11	Write a note on ferroelectrics and piezoelectric materials.	10M	CO5	BL1

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