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 I Sem Regular End Examination, July 2021
APPLIED PHYSICS
(ECE, CSC & CSD)

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

Note: 1. Answer any FIVE questions.
　　　 2. Each question carries 7 marks.

1	a)	What is Black body radiation? Discuss the spectrum of blackbody radiation.	7M	CO-1	L-6
	b)	Explain Heisenberg's Uncertainty principle.	7M	CO-1	L-5
2	a)	Derive an expression for Schrodinger's time independent wave equation.	7M	CO-1	L-6
	b)	Demonstrate the de-Broglie's hypothesis of quantum theory.	7M	CO-1	L-2
3	a)	Discuss V-I Characteristics of Zener diode.	7M	CO-2	L-6
	b)	Explain diffusion and drift carriers transport mechanism.	7M	CO-2	L-5
4	a)	Describe Radiative and Non-radiative recombination mechanisms in semiconductors.	7M	CO-3	L-6
	b)	Discuss construction and working principle of LED.	7M	CO-3	L-6
5	a)	Discuss Bipolar Junction Transistor (BJT) construction and operating principle.	7M	CO-2	L-6
	b)	Elaborate working principle and characteristics of Avalanche photodiode.	7M	CO-3	L-6
6	a)	With a neat diagram describe construction and working principle of Carbon dioxide (CO_2) laser.	7M	CO-4	L-6
	b)	Derive an expression for Acceptance angle and Numerical Aperture.	7M	CO-4	L-6
7	a)	Distinguish between Step and Graded index optical fibers.	7M	CO-4	L-4
	b)	What is Hysteresis curve? Explain in detail.	7M	CO-5	L-1
8	a)	Derive an expression of Clausius-Mossotti equation.	7M	CO-5	L-6
	b)	Distinguish between dia, para and ferro magnetic materials.	7M	CO-5	L-4

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