Question Paper Code: R18A12HS02

R18

ANURAG Engineering College

(An Autonomous Institution)

I B.Tech II Semester Supplementary Examinations, Jan/Feb-2024

ENGINEERING PHYSICS

(COMMON TO CIVIL, EEE & MECH)

Time: 3 Hours **Max. Marks: 75**

Section – A (Short Answer type questions) (25 Marks)

Answer All Questions		Course Outcome	B.T Level	Marks
1.	What is Simple Harmonic Motion? Write the characteristics of SHM.	CO1	L1	2M
2.	Write the differences between Transverse and Stationary Waves. Write the equation of motion of the Transverse wave?	CO1	L1	3M
3.	Explain the principle of superposition of waves.	CO2	L2	2M
4.	What is Diffraction Grating? Write the Grating Equation.	CO2	L1	3M
5.	Write down the characteristics of LASER.	CO3	L1	2M
6.	Write the differences between the stimulated and spontaneous emission.	CO3	L1	3M
7.	Define Unit cell and Co - ordination number.	CO4	L1	2M
8.	Write the applications of XRD.	CO4	L1	3M
9.	Define Bohr magneton?	CO5	L1	2M
10.	What is Ferro electricity? Write down the application of dielectrics.	CO5	L1	3M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	Explain about damped harmonic oscillator in detail. And write about light damping. Explain the energy decay in the damped oscillator.	CO1	L2	10M
	OR			
B)	Derive the equation of motion of forced vibration. And discuss the condition for amplitude resonance.	CO1	L3	10M
12. A)	Explain the phenomenon of interference in thin films by reflection	CO2	L2	10M
	OR			
B)	Explain Fraunhofer diffraction at single slit. Derive the conditions.	CO2	L2	10M
13. A)	Derive an equation for acceptance angle and Numerical aperture	CO3	L3	10M
	OR			
B)	Describe the construction and working of He-Ne LASER with Energy Level Diagram.	CO3	L3	10M
14. A)	Show that FCC is closely packed than BCC and SC structure	CO4	L2	10M
	OR			
B)	Explain powder XRD method with neat diagram	CO4	L2	10M
15. A)	Define domains in ferromagnetism and discuss in detail the hysteresis curve based on domain theory.	CO5	L2	10M
	OR			
B)	Define the internal field and derive an expression for the internal field of a dielectric material	CO5	L2	10M