R22

ANURAG Engineering College
(An Autonomous Institution)
I B.Tech II Semester Supplementary Examinations, Jan/Feb-2024
APPLIED PHYSICS
(COMMON TO CSE & AIML)

Time: 3 Hours   **Max.Marks:60**

Section – A (Short Answer type questions)   (10 Marks)
Answer All Questions

		Course Outcome	B.T Level	Marks
1.	What are types of interferences?	CO1	L1	1M
2.	Define polarization with necessary condition.	CO1	L1	1M
3.	Write de Broglie hypothesis.	CO2	L1	1M
4.	Illustrate Bloch's theorem.	CO2	L2	1M
5.	Write Energy band diagram for a semiconductor.	CO3	L1	1M
6.	Compare direct and indirect band gap semiconductors.	CO3	L2	1M
7.	Demonstrate sol-gel process	CO4	L2	1M
8.	Define quantum confinement	CO4	L1	1M
9.	List any two characteristics of LASER.	CO5	L1	1M
10.	Classify optical fibres based on index.	CO5	L2	1M

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

			Course Outcome	B.T Level	Marks
11.	A)	Apply the concept of path difference to explain the bright and dark conditions of interference in thin films by reflection.	CO1	L3	10M
		OR			
	B)	Analyse the intensity maxima and minimum conditions of Fraunhofer diffraction at single slit with necessary derivation.	CO1	L3	10M
12.	A)	Develop expressions for one dimensional time independent Schrodinger wave equation.	CO2	L3	10M
		OR			
	B)	Analyse the implication of periodic square-well potential in Kronig-Penny model to understand the allowed and forbidden energy levels.	CO2	L3	10M
13.	A)	Uncover the role of magnetic field in Hall Effect and the list the application of Hall Effect in classifying the solids.	CO3	L3	10M
		OR			
	B)	Construct, explain the working principle and characteristics of a light emitting diode.	CO3	L3	10M
14.	A)	Compare physical vapour deposition and chemical vapour deposition methods for fabricating nanomaterials.	CO4	L3	10M
		OR			
	B)	Make use of XRD technique to characterize nanomaterials and list any four applications of nanomaterials.	CO4	L3	10M
15.	A)	Compare the production of He-Ne and semiconductor LASERs.	CO5	L3	10M
		OR			
	B)	Make use of optical fibres for communication systems with neat diagram.	CO5	L3	10M