[B19 BS 1203]

I B. Tech II Semester (R19) Regular Examinations
APPLIED PHYSICS
(Electrical & Electronics Engineering)
MODEL QUESTION PAPER

TIME: 3 Hrs.   **Max. Marks: 75 M**

Answer **ONE Question** from **EACH UNIT**
All questions carry equal marks
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			CO	KL	M
		UNIT - I			
1.	a).	Explain the principle of Superposition and discuss the conditions for maxima and minima of intensity.	1	2	8
	b).	How the Newton's Rings are formed and deduce an expression for the wave length of light used.	1	2	7
		OR			
2.	a).	Distinguish the different diffractions of light.	1	2	5
	b).	Give qualitative and quantitative analysis of Fraun hoper diffraction at a single slit	1	3	10
		UNIT - II			
3.	a).	Define polarization and explain the different types of polarization possible in a dielectric	2	2	7
	b).	Deduce the Claussius Mosotti & equation and its significance in dielectrics.	2	3	8
		OR			
4.	a).	Define Magnetic susceptibility and give a classification of magnetic materials.	2	1	5
	b).	Describe the Hysteresis exhibited by Ferromagnetic materials and explain its using a Suitable theory CO2-K3(10M)	2	3	10
		UNIT - III			
5.	a).	Give the selection procedure of the active medium of laser device.	4	2	7
	b).	With suitable diagrams, discuss the working principle, design and working of He – Ne laser system	4	2	8
		OR			
6.	a).	What is the significance of Numerical Aperture of an optical fiber and obtain an expression for it.	4	2	8
	b).	Discuss the sensor applications of optical fiber.	4	3	7
		UNIT - IV			
7.	a).	What is an intrinsic semiconductor and obtain an expression for the density of coiners.	3	2	9
	b).	Distinguish between direct and indirect band gap semiconductors and mention their applications.	3	3	6
		OR			
8.	a).	Discuss the Hall Effect in detail and explain its significance.	3	3	9
	b).	Distinguish between drift and diffusion current in semiconductors.	3	2	6

		UNIT - V			
9.	a).	Explaining Magnetostriction effect, describe how the ultrasonics can be produced.	4	3	9
	b).	Mention the application of ultrasonics.	4	1	6
		OR			
10.	a).	How the nano materials can be produced by sol – gel method.	5	2	7
	b).	Write abt Carbon Nanotubes	5	2	4
	C).	Discuss some important applications of nanomaterials.	5	1	4