Roll No. _____

END SEMESTER EXAMINATION
SEMESTER- II (Old Course)

COURSE CODE : G-106 | **DURATION : 3 (THREE)HRS**
COURSE TITLE : PHYSICS-II | **MAXIMUM MARKS : 75**
SESSION : JULY-DEC 2021 | **PASS MARKS : 35 %**

NOTE: *1. Attempt any 5 (five) questions*
2. Mark for each question is shown against it.
4. Assume suitable logical data wherever necessary.

1.		**Write short notes on the following-** (a) Total internal Reflection (b) Wheatstone bridge(c) Magnetic field lines of force	**(3x5)**
2.	**(a)**	State laws of reflection of light. What are the uses of different types of mirror?	**(2+3)**
	(b)	Explain the concept of fibre optics and its Various practical applications.	**(3+3)**
	(c)	What is electromagnetic spectrum? Differentiate between infrared rays and ultra violet rays.	**(2+2)**
3.	**(a)**	What are the properties of magnet?	**(5)**
	(b)	Differentiate between uniform and non-uniform magnetic field.	**(4)**
	(c)	What do you mean by elements of Earth's magnetism? Define Angle of Dip and angle of declination.	**(2+4)**
4.	**(a)**	Explain the concept of Electrostatic induction and conduction.	**(2+3)**
	(b)	State coulomb's law in Electrostatics. What will be the force experienced by two charges of magnitude 2 coulomb and 4 coulomb when they are separated by 2 meter? Given: $K=9x10^9$ Nm^2/C^2	**(2+3)**
	(c)	What do you mean by lines of force in electrostatic? write down the properties of electric lines of force.	**(2+3)**
5.	**(a)**	Derive the expression of equivalent resistance for resistance in parallel circuit.	**(4)**
	(b)	State Ohm's law. What will be the voltage, if the circuits offer 2 ohm resistance to the flow of 4 A current?	**(2+3)**
	(c)	State faraday's law of electromagnetic induction. Explain the working of A.C generator.	**(2+4)**
6.	**(a)**	What is photo electric effect? Define work function and Stopping potential.	**(1+2+2)**
	(b)	How does the solar photo voltaic cell work? Write down its uses.	**(4)**
	(c)	Distinguish between Conductor, insulator and semi-conductor on the basis of energy band diagram.	**(6)**
7.	**(a)**	Differentiate between intrinsic and extrinsic semi conductor.	**(5)**
	(b)	What is PN junction diode? What are the application of PN junction diode?	**(2+3)**
8.	**(a)**	What is lateral inversion? What are the characteristics of image formed by a plane mirror?	**(2+2)**
	(b)	Construct a ray diagram for a concave lens when the object is placed beyond 2F. What are the characteristics of image formed?	**(4)**
	(c)	Give two uses each for concave mirror, convex mirror, concave lens and convex lens.	**(4)**
	(d)	State Snell's law and hence define and explain refractive index.	**(3)**

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