

NAME:		ROLL NO:		TIME:	50: MIN
SUB:	Physics	Date:		CLASS:	1 st Year
SYLLABUS	Chp. 8 (Physical Optics and Gravitational Waves)	T. MARKS	30	OBT. M	

Q. 1 Choose the Correct Answer. Cutting, Erasing, Double Selection is Strictly Prohibited. (1x10=10)

- Which phenomena shows that light is transverse in nature:**
(A) Refraction (B) Polarization (C) Interference (D) Reflection
- If the unpolarized light is made incident on sheet of Polaroid, the transmitted beam of light will be:**
(A) None plane Polaroid (B) Plane Polaroid (C) Un Polaroid (D) Diffraction
- Sodium chloride in a flame given out:**
(A) Blue light (B) Red light (C) Yellow light (D) White light
- Which one of the following cannot be polarized:**
(A) Radio waves (B) Light waves (C) Sound waves (D) Infrared rays
- The property of the substances by which their concentration in solution can be found is:**
(A) Optical rotation (B) Interference (C) Diffraction (D) Reflection
- Which of the following waves cannot be polarized:**
(A) X-rays (B) Light waves (C) Sound waves (D) Infrared rays
- The phenomenon of polarization of light is:**
(A) The process of scattering of light
(B) The property of light to vibrate in a specific plane
(C) The ability of light to travel in a straight line
(D) The phenomenon of light changing colour
- The intensity of light when it passes through a polarizer:**
(A) Increases (B) Decreases (C) Remains the same (D) Becomes zero
- The key purpose of an analyzer in a polarization experiment is:**
(A) To polarize the light (B) To measure the intensity of light
(C) To change the direction of light (D) To filter out unwanted light
- The mathematical representation of Malus's law is :**
(A) $I = I_0 \cos^2 \theta$ (B) $I = I_0 \sin^2 \theta$ (C) $I = I_0 \tan^2 \theta$ (D) $I = I \cot^2 \theta$

PART-I

Q. 2 Write Short Answers of the Following Questions (2x6=12)

- Why are the Polaroid sunglasses better than the ordinary sunglasses?
- Is light from the sky partially polarized? How is it use?
- How is Malus's law used in everyday life?
- What is the space-time curvature?
- What are the applications of Brewster's angle?
- Write down some applications of plane polarized and circularly polarized light.

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PART-II

Write Answers of the Following Questions in Detail.

- Q. 3 (a) Discuss Malus's law for polarization of light in details. 5
- (b) A polarizer and an analyzer have their axes aligned at 60° . What is the fraction of the initial intensity that emerges? 3

Answer Key

1	B	2	B	3	C	4	C
5	A	6	C	7	B	8	B
9	B	10	A				