

Topical Worksheet

Chapter 9 Ray Model of Light

Suggested Answer

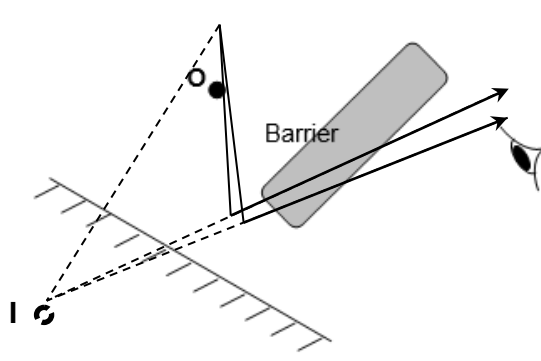
Section A

1	2	3	4	5
D	D	B	A	D

Section B

QN	Suggested Answers	Marks
1a	Light travels faster than sound. Speed of light in air is approximately 300,000,000 m/s while speed of sound in air is approximately 330 m/s.	1
1b	The snow will reflect light into the eyes of the tourist. Hence, by wearing the sun-glasses, the amount of reflected light entering his eyes will be reduced.	2

2a	The incident ray, the reflected ray and the normal at the point of incidence all lie on the same plane. The angle of reflection is equal to the angle of incidence.	2
2bi	The image is virtual and upright.	2
2bii	The image is virtual and smaller.	2
2biii	The image is virtual and larger.	2

3	Image – 1m Ray diagram – 2m	3
(a) (b)		

QN	Suggested Answers	Marks
4	<div data-bbox="475 264 1050 660" data-label="Image"> </div> <p>Note that the incident ray and the emergent ray are parallel to each other as the glass block is rectangular in shape.</p>	6

5a	Red Orange Yellow Green Blue Indigo Violet	1
5b	Violet	1
5c	AB. As light travels from air into the glass prism, AB bends lesser from the normal than AC, showing that it is travelling faster than AC.	2
5d	<div data-bbox="226 1146 1327 1545" data-label="Image"> </div> <p>Triangular prism – 1 m The prism is inverted – 1 m</p>	2