

Name of the Student: _____

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

Q1.

	Answer	Acceptable answers	Mark
(a)(i)	☒ D refraction		(1)
(a)(ii)	substitution: (1) power = $1/2$ evaluation: (1) 0.5 (D)	Award 2 marks for correct answer no working	(2)
(b)(i)	☒ B		(1)
(b)(ii)	 in front of eye (1)	any other diverging lens (lens which is narrower at the centre than at the ends) Reject lens inside the eye	(1)
(b)(iii)	a description including any two from: - to spread out the light/ rays (1) - to produce focused image (1) (focused image) on the retina (1)	make image distance longer sharp/clear image back of eye	(2)
(b)(iv)	contact lenses (1)	<u>laser</u> surgery/ eye lens replacement	(1)

Q2.

Question number	Answer	Mark
	An answer that provides a description by making reference to: leaf appears black (1) background appears blue (1)	(2)

Q3.

Question Number	Answer	Mark
(i)	A converging lens forming a real image The only correct answer is A <i>B 'diverging lens forming a real image' is incorrect since the lens drawn in the diagram is not diverging</i> <i>C 'converging lens forming a virtual image' is incorrect, since the diagram shows rays coming to a focus (on a screen if placed there)</i> <i>D 'diverging lens forming a virtual image' is incorrect, since the diagram shows neither a diverging image or the formation of a virtual image</i>	(1) AO 3 1a
Question Number	Answer	Mark
(ii)	C 'R' The only correct answer is 'R' <i>'P' is incorrect, being a distractor, showing a width of rays</i> <i>'Q' is incorrect, being a distractor showing an arbitrary distance to the lens distance</i> <i>'S' is incorrect, being a distractor showing an overall distance</i>	(1) AO 3 1b

Question Number	Answer	Acceptable answers	Mark
(a)	normal (1)	normal line	(1)

Question Number	Answer	Acceptable answers	Mark
(b)(i)	plot the points: 0,0 (1) 6,9 (1)	allow within one square tolerance. Bod if 0,0 not clearly visible but must be able to see a plotted point for 6,9 If they plot more than 2 points, take a mark off for each incorrect one plotted.	(2)

Question Number	Answer	Acceptable answers	Mark
(b)(ii)	straight line through both points joining existing curve (1)	Reject multiple lines and unreasonably wavering lines. allow ecf from wrongly plotted points, including curves if plausible	(1)

Question Number	Answer	Acceptable answers	Mark
(b)(iii)	42° (1) +/- 0.5°		(1)

Question Number	Answer	Acceptable answers	Mark
(c)(i)	diagram showing: - reflection (1) - angle of incidence = angle of reflection (1)	reject (for this marking point) with an additional partial refraction / ray along boundary judge by eye allow angles marked as equal	(2)

Question Number	Answer	Acceptable answers	Mark
(c)(ii)	The idea that it enters along the normal	At 90° to the surface / at right angles to the surface / along a radius / perpendicular to the tangent / hits straight on reject 'goes through centre of glass'	(1)

(Total for Question = 8 marks)