

8J Light

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Q1

Part	Step	Answer	Mark scheme
	1st 1st	Any two light sources: Sun; light bulb; candle; fire; TV screen.	2 marks – 1 mark for each one

Q2

Part	Step	Answer	Mark scheme
	3rd 3rd 3rd 3rd	Straight; opaque; absorbed; transmitted	4 marks – 1 mark for each one

Q3

Part	Step	Answer	Mark scheme
a	3rd	A It transmits light.	1 mark
b	3rd	D A translucent material scatters light as it passes through.	1 mark

Q4

Part	Step	Answer	Mark scheme
	5th 5th	Orange, yellow, green, blue - from the top in that order.	2 marks if all correct. (1 mark if one colour incorrect or out of place. 0 marks if more than one colour wrong)

Q5

Part	Step	Answer	Mark scheme
	5th	Ray of light and arrows from lamp to book and from book to eye.	1 mark – both arrows must be present and pointing in the correct direction

Q6

Part	Step	Answer	Mark scheme
	5th	A Red light is transmitted and all the other colours are absorbed.	1 mark – both parts of answer needed

Q7

Part	Step	Answer	Mark scheme
a	5th	Reflected ray drawn so that the angle of reflection is equal to the angle of incidence.	1 mark – allow for some error if protractors not available.
b	5th 5th	In specular reflection the light is reflected evenly/the angles of incidence and reflection are equal; In diffuse reflection the light is scattered/the reflected light goes off in many different directions.	1 mark 1 mark
c	5th	Continuous line drawn from ball to eye, with angles of incidence and reflection drawn approximately equal at each mirror with arrows showing correct direction.	1 mark

Q8

Part	Step	Answer	Mark scheme
a	5th	Reflected ray drawn so that the angle of reflection is equal to the angle of incidence. (Allow for some error if protractors not available.)	1 mark
b	3rd	C the normal	1 mark
c	3rd	B The light is scattered in many different directions.	1 mark
d	5th 5th	Continuous line drawn from ball to eye, with angles of incidence and reflection drawn; approximately equal at each mirror with arrows showing correct direction.	1 mark 1 mark
e	3rd	Any sensible use for a mirror, such as for doing hair/make-up, rear-view mirrors in cars, mirrors to give drivers	1 mark

		better views at junctions, anti-shoplifting mirrors, etc.	
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Q9

Part	Step	Answer	Mark scheme
a i	5th	D The white parts reflect all the colours in white light;	1 mark
ii	6th	The red parts reflect red light but absorb all the other colours.	1 mark
b	6th	The white will appear red, because it reflects all colours but there is only red light reaching it;	1 mark
	6th	The red will still appear red, because it reflects the red light that reaches it;	1 mark
	6th	The blue will appear black, because it absorbs red light and that is the only colour of light reaching it.	1 mark

Q10

Part	Step	Answer	Mark scheme
a	5th	A Red light is transmitted and all the other colours are absorbed.	1 mark – both parts of answer needed
b	6th	No light will get through, because the blue filter only transmits blue light and there is no blue light reaching it.	1 mark – complete explanation is needed for the mark.

Q11

Part	Step	Answer	Mark scheme
a	6th	C The cones in our retinas detect these three colours.	1 mark
b	5th	A Cyan is made from blue and green.	1 mark – the secondary colour and both primary colours must be named.

Q12

Part	Step	Answer	Mark scheme
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	6th 6th 6th 5th 5th	Functions of any three parts of the eye described: cornea – transparent covering lets light through/helps to focus light; iris – changes to control size of pupil; pupil – lets light into the eye/controls how much light enters the eye; lens – helps to focus light; retina – converts light to nerve impulses; optic nerve – sends nerve impulses to brain. Information presented succinctly. In a table or as a series of bullet points or in any other clear way.	3 marks – 1 for each correct description 1 mark 1 mark
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Q13

Part a	Step 5th	Answer Any sensible suggestion with a reason – e.g. it is more accurate because her hand would make a shadow if she tried to draw along the ray, or she wouldn't be able to put a ruler along the ray to draw the line because the block would get in the way.	Mark scheme 1 mark
b	6th 6th	Ray within block refracted closer to normal; Ray emerges from block and is refracted parallel to incident ray.	1 mark 1 mark

Q14

Part a	Step 4th 4th 4th	Answer iris; lens; optic nerve (labelled in correct places)	Mark scheme 3 marks – 1 mark for each one correct
b	5th	B red, green, blue	1 mark
c	6th 6th 6th 5th 5th	Functions of any three parts of the eye described: cornea – transparent covering lets light through/helps to focus light; iris – changes to control size of pupil;	3 marks – 1 for each correct description 1 mark 1 mark

		pupil – lets light into the eye/controls how much light enters the eye; lens – helps to focus light; retina – converts light to nerve impulses; optic nerve – sends nerve impulses to brain. Information presented succinctly. In a table or as a series of bullet points or in any other clear way.	
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Q15

Part	Step	Answer	Mark scheme
	7th 7th	Different parts of the photograph would normally reflect different colours or combinations of colours. In coloured light, not all the colours in light are available to be reflected, so some colours could appear black; The computer screen emits light, so seeing it does not depend on light from the source in the room. Some of the colours could change a little, as coloured light reflected from the screen could combine with the colours emitted by the screen to form a different colour.	1 mark 1 mark

Overall Mark	/50
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