

8J Light

Name	
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Q1

Name *two* sources of light.

i

ii

[2 marks]

Q2

These sentences explain why you have a shadow on a sunny day.

Complete the sentences using words from the box.

absorbed	curved	opaque	straight	translucent	transmitted	transparent
wavy						

Light travels in _____ lines. Your body is _____ so light hitting your body is _____ or reflected. The light is not _____ through your body.

[4 marks]

Q3

Materials can be opaque, translucent or transparent.

a) What does 'transparent' mean? Tick *one* box.

☐

A It transmits light.

☐

B It absorbs all light.

☐

C Some light is absorbed and the rest is reflected.

☐

D Light is scattered as it passes through.

[1 mark]

b) How is a **translucent** material different from a **transparent** material? Tick *one* box.

☐

A A translucent material transmits light.

☐

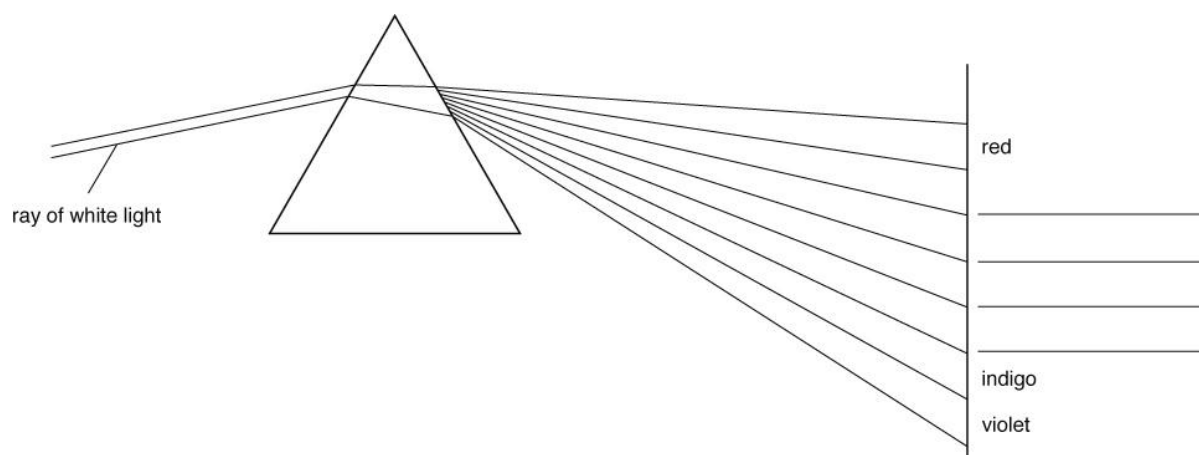
B A translucent material absorbs all light.

- ☐ C A translucent material absorbs some light and the rest is reflected.
- ☐ D A translucent material scatters light as it passes through.

[1 mark]

Q4

The diagram below shows a ray of white light passing through a prism and forming a spectrum on a white screen.



Add the four missing colours to the spectrum.

[2 marks]

Q5

Jo is reading a book. Draw a light ray on the drawing to show how Jo sees the book.

Put arrows on your light ray to show the direction the light is travelling.



[1 mark]

Q6

Sam puts a red filter in a beam of white light. What happens to the light that hits the filter? Tick *one* box.

☐

A Red light is transmitted and all the other colours are absorbed.

☐

B Red light is absorbed and all the other colours are transmitted.

☐

C White light is transmitted and red light is absorbed.

☐

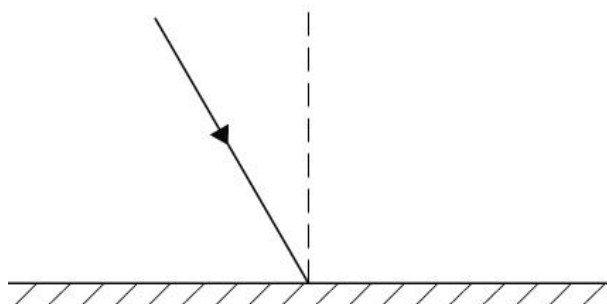
D Red light is reflected and all the other colours are absorbed.

[1 mark]

Q7

a) The diagram below shows a plane mirror and a ray of light hitting the mirror.

Complete the diagram by drawing the reflected ray on the diagram.



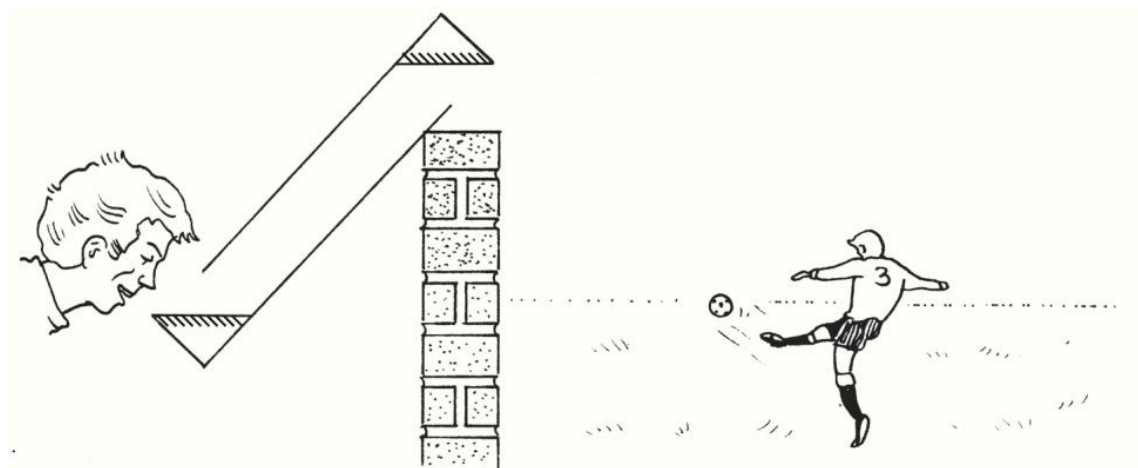
[1 mark]

b) Describe the difference between specular reflection and diffuse reflection.

[2 marks]

c) Two plane mirrors can be used in a piece of equipment called a periscope.

Draw a ray of light on the diagram to show how the person using the periscope can see the ball.

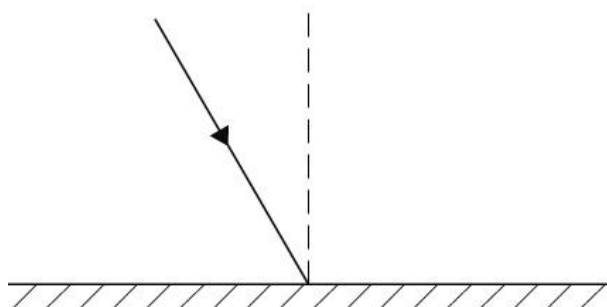


[2 marks]

Q8

a) The diagram below shows a plane mirror and a ray of light hitting the mirror.

Complete the diagram by drawing the reflected ray on the diagram.



[1 mark]

b) Look at the diagram in part **a**. What is the name of the dashed line at right angles to the mirror? Tick *one* box.

☐

A the reflected ray

☐

B the incident ray

☐

C the normal

☐

D the refracted ray

[1 mark]

c) A piece of paper does not reflect light in the same way as a mirror reflects light.

What happens to light when it hits a piece of paper and is reflected? Tick *one* box.

☐

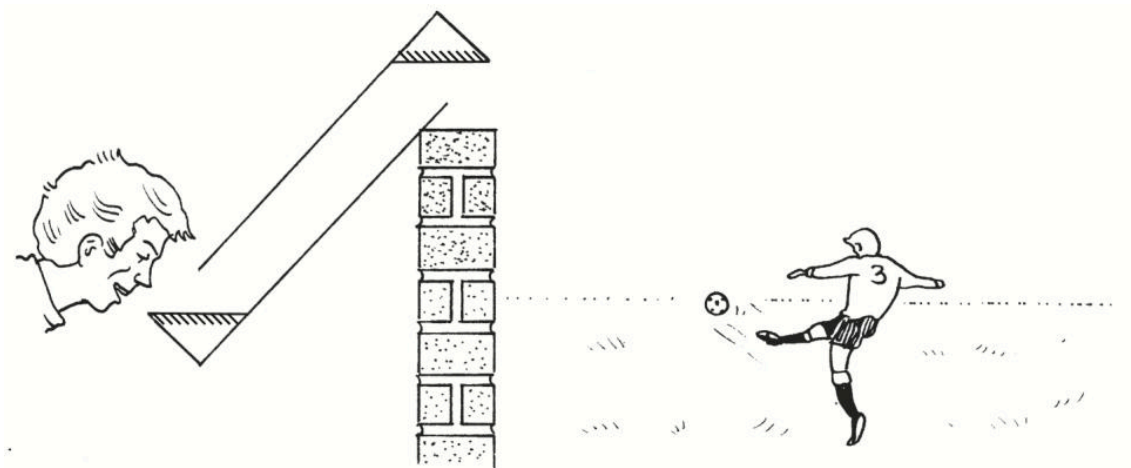
A All the rays are reflected in the same direction.

- ☐ B The light is scattered in many different directions.
- ☐ C The light rays are reflected along the normal.
- ☐ D The light is reflected back towards the mirror.

[1 mark]

d) Two plane mirrors can be used in a piece of equipment called a periscope.

Draw a ray of light on the diagram to show how the person using the periscope can see the ball.



[2 marks]

e) Describe *one* different use for a plane mirror.

[1 mark]

Q9

A performer on a stage has a red and white costume. White light shines on the performer.

a) i Why does the white part of the costume look white? Tick *one* box.

- ☐ A The white parts reflect white and absorb all the other colours.
- ☐ B The white parts only reflect white light.
- ☐ C The white parts only absorb white light.
- ☐ D The white parts reflect all the colours in white light.

[1 mark]

ii Explain why the red part of the costume looks red.

[1 mark]

b) The performer stands next to a blue box. A red spotlight shines on the performer and the box. Explain what colours the red, white and blue things will look in the red light.

[3 marks]

Q10

Sam puts a red filter in a beam of white light.

a) What happens to the light that hits the filter? Tick *one* box.

☐

A Red light is transmitted and all the other colours are absorbed.

☐

B Red light is absorbed and all the other colours are transmitted.

☐

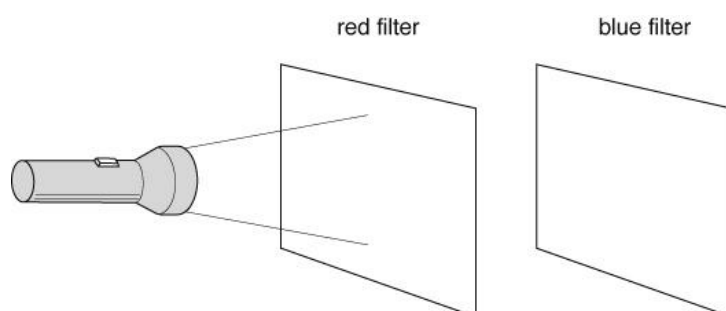
C White light is transmitted and red light is absorbed.

☐

D Red light is reflected and all the other colours are absorbed.

[1 mark]

b) Sam puts a blue filter next to the red filter. Explain what will happen.



[1 mark]

Q11

The primary colours of light are red, green and blue.

a) Why do we call these the primary colours? Tick *one* box.

- ☐ A These are the first colours we see.
- ☐ B These are the brightest colours.
- ☐ C The cones in our retinas detect these three colours.
- ☐ D These are the best colours to give small children.

[1 mark]

b) Name *one* secondary colour of light and the *two* primary colours that make it. Tick *one* box.

- ☐ A Cyan is made from blue and green.
- ☐ B Green is made from yellow and blue.
- ☐ C Magenta is made from red and green.
- ☐ D Red is made from yellow and cyan.

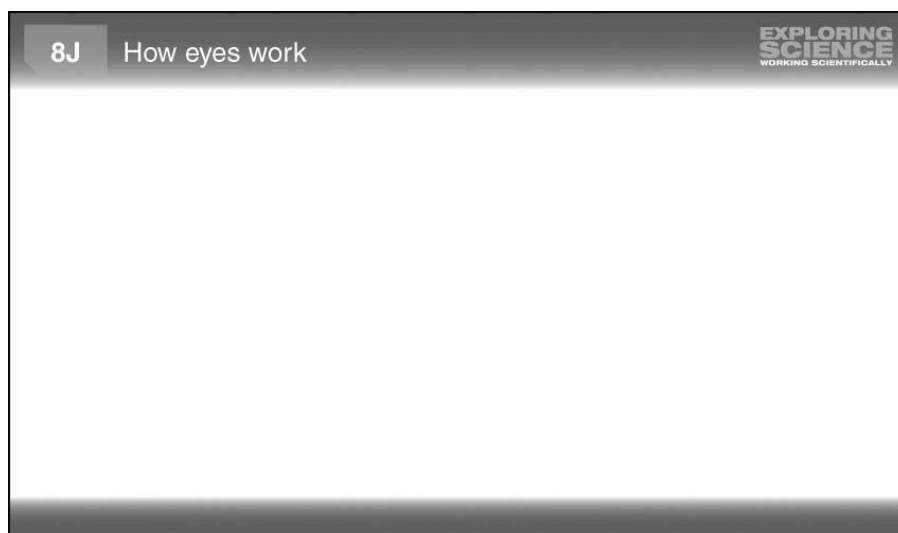
[1 mark]

Q12

You are giving a presentation on how eyes work. You will show a diagram of the eye as part of your presentation.

Produce another screen of the presentation to describe the functions of three different parts of the eye.

Two of the marks for this question are for producing a clear and easy to read screen.

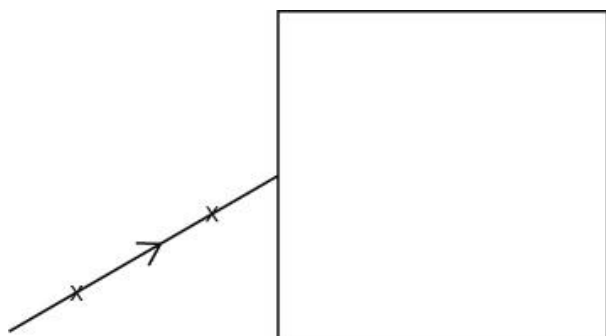


[5 marks]

Q13

Jenna shines a ray of light towards a glass block. She draws a cross at two points along the ray and then uses the crosses to help her draw a straight line showing the ray of light.

The diagram shows what she did.



a) Explain why Jenna used the crosses to mark the ray of light, instead of drawing along the ray.

[1 mark]

b) As the ray of light goes into the glass block and out of the glass block, the ray changes direction.

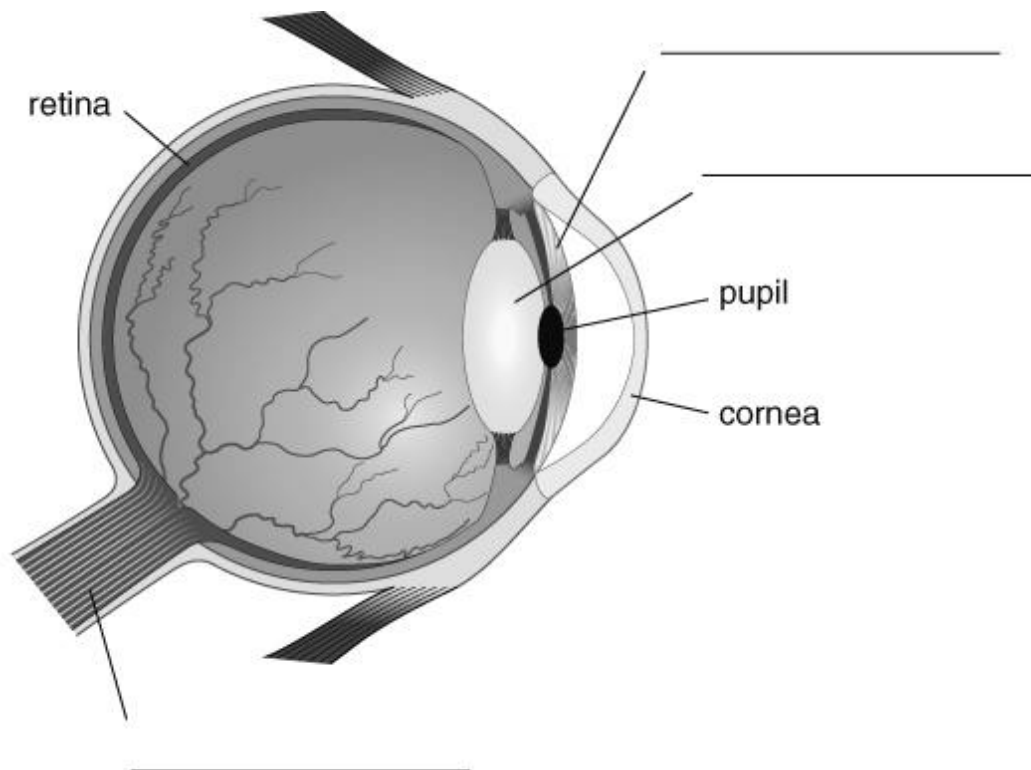
Complete the ray of light on the diagram above to show what happens when the light goes *into* the glass block and comes *out of* the glass block.

[2 marks]

Q14

The diagram shows a human eye.

a) Add the three missing labels.



[3 marks]

b) The retina contains rod cells and cone cells. There are three types of cone cell. Each type of cone cell detects one of the primary colours of light.

What are the three colours that cone cells detect? Tick *one* box.

☐

A yellow, green, blue

☐

B red, green, blue

☐

C red, yellow, blue

☐

D magenta, yellow, cyan

[1 mark]

c) You are giving a presentation on how eyes work. You will show the diagram in part **a** as part of your presentation.

Produce another screen of the presentation to describe the functions of three different parts of the eye.

Two of the marks for this question are for producing a clear and easy to read screen.

8J

How eyes work

EXPLORING
SCIENCE
WORKING SCIENTIFICALLY

[5 marks]

Q15

Alli is looking at a photograph on a computer screen. He also has a print of the photograph on his desk. The lamp in the room is producing white light.

The lamp in the room has a lamp shade that makes the light coloured.

Explain why the printed photograph will seem to change colour more than the photo on the computer screen.

[2 marks]

Overall Mark	/50
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