

Observed Light Waves (KS3)

Section A – Recall (1 mark each)

Q1 (1 mark)

What type of wave is light?

Q2 (1 mark)

What does light travel through in a vacuum?

Q3 (1 mark)

What is the approximate speed of light in a vacuum?

Q4 (1 mark)

What happens to light when it is absorbed?

Q5 (1 mark)

What is specular reflection?

Q6 (1 mark)

What is diffuse scattering?

Q7 (1 mark)

What device uses a small hole to form an image?

Q8 (1 mark)

What is a convex lens used for?

Q9 (1 mark)

What part of the eye detects light?

Q10 (1 mark)

What is white light made of?

Section B – Understanding (2–3 marks each)

Q11 (2 marks)

State two properties of light.

Q12 (2 marks)

Explain why light can travel through a vacuum.

Q13 (2 marks)

Explain the difference between absorption and reflection.

Q14 (3 marks)

Explain the difference between specular reflection and diffuse scattering.

Q15 (3 marks)

Describe how a pinhole camera forms an image.

Q16 (3 marks)

Explain how a convex lens focuses light.

Q17 (3 marks)

Explain how the eye detects light.

Q18 (2 marks)

Explain why shiny black surfaces absorb a different amount of light energy than shiny white surfaces.

Section C – Application (3–4 marks each)

Q19 (3 marks)

A student sees a clear reflection in a mirror but not in a rough wall. Explain why.

Q20 (3 marks)

Light bends when it enters water from air. Explain why this happens.

Q21 (4 marks)

A prism splits white light into a spectrum. Explain what this shows about white light.

Q22 (4 marks)

A camera is used to take a photo. Explain how light forms the image.

Q23 (4 marks)

Explain how colour filters work.

Q24 (3 marks)

A green plant appears green in white light. Explain why.

Q25 (3 marks)

A ray of light hits a plane mirror at an angle of incidence of 35° .
State the law of reflection and calculate the angle of reflection.

Q26 (3 marks)

A ray of light passes from air into glass. Explain why the angle of refraction is smaller than the angle of incidence.

Q27 (4 marks)

A student draws a ray diagram for light entering glass from air.
Draw an example or describe how to correctly draw and label:

- the normal
- the angle of incidence
- the angle of refraction
- the refracted ray

Section D – Extended Response (6 marks)

Q28 (6 marks)

Explain how light is used in the human eye to form an image.

Q29 (6 marks)

Explain how light is used in cameras to form and store images.

Total: ____ / 73
Percentage: ____%