

GCSE Biology

Worksheet: The eye

TIME 35 min	TOTAL 32 marks	CALCULATOR Allowed	DIFFICULTY Easy, Medium
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Topics: The eye

NAME	CLASS	DATE
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- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Answer all questions in the spaces provided.
- In all calculations, show clearly how you work out your answer.
- The marks for questions are shown in brackets.

0 1

The lens changes shape to focus light on the retina. This process involves the ciliary muscles and suspensory ligaments.

0 1 . 1

What is the function of the suspensory ligaments?

.....

.....

[1 mark]

0 1 . 2

Which structure contracts or relaxes to change the shape of the lens?

Tick (✓) **one** box.

Ciliary muscles

☐

Suspensory ligaments

☐

Sclera

☐

Cornea

☐

[1 mark]

0 1 . 3

Complete the sentence.

To focus on a near object, the ciliary muscles and the suspensory ligaments, so the lens becomes thicker.

.....

.....

.....

.....

[2 marks]

0 2

The eye is a sense organ containing receptors that are sensitive to light intensity and colour.

0 2 . 1

Which part of the eye contains the light receptors?

Tick (✓) **one** box.

Cornea

☐

Iris

☐

Lens

☐

Retina

☐

[1 mark]

0 2 . 2

Name the part of the eye that carries impulses from the retina to the brain.

.....

.....

.....

[1 mark]

0 2 . 3

What is the function of the sclera?

.....

.....

[1 mark]

0 2 . 4

What is the function of the iris?

[1 mark]

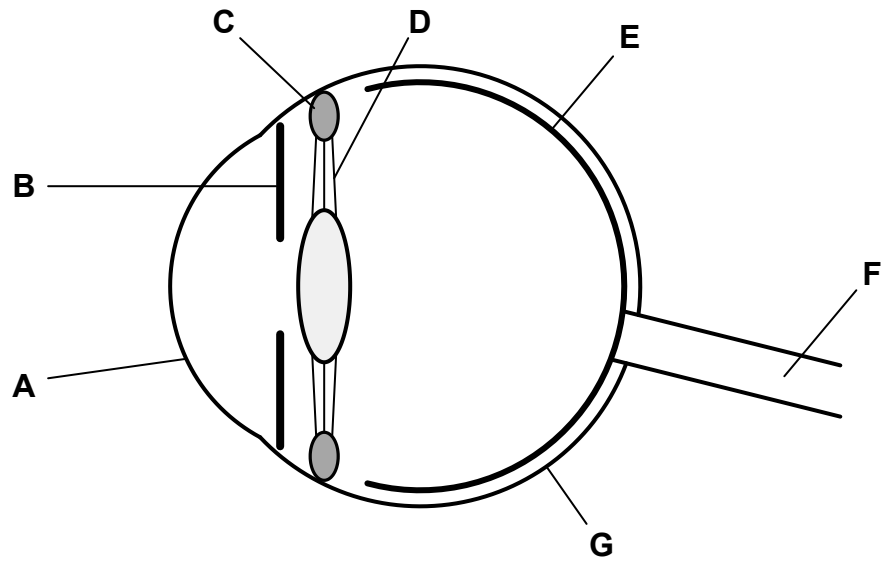
0 2 . 5

What is the function of the cornea?

[1 mark]

Figure 1 shows a horizontal section through the human eye.

Figure 1



0 3 . 1

Name the structures labelled **A**, **B**, **E** and **G** in Figure 1.

.....

.....

.....

.....

.....

.....

.....

.....

[4 marks]

0 3 . 2

Structures **C** and **D** work together to change the shape of the lens.
Name structures **C** and **D**.

.....

.....

.....

.....

[2 marks]

0 3 . 3

Which letter labels the optic nerve?

.....

.....

.....

.....

[1 mark]

0 3 . 4

Describe the function of the optic nerve.

.....

.....

[1 mark]

0 4

The eye can focus on objects at different distances. This is called accommodation.

0 4 . 1

Describe how the eye changes to focus on a near object.

.....

.....

.....

.....

.....

.....

[3 marks]

0 4 . 2

Describe how the eye changes to focus on a distant object.

.....

.....

.....

.....

.....

[3 marks]

0 4 . 3

Explain why light must be focused on the retina for a person to see a clear image.

.....

.....

[1 mark]

0 5

A person walks from a dark room into bright sunlight.

0 5 . 1

Describe how the person’s pupils change.

.....

.....

[1 mark]

0 5 . 2

Explain how the muscles of the iris cause this change.

.....

.....

.....

.....

[2 marks]

0 5 . 3

Explain why this response is important.

.....

.....

.....

.....

[2 marks]

0 5 . 4

Describe the changes in the iris when the person returns to the dark room.

.....

.....

.....

.....

[2 marks]

0 5 . 5

This response is a reflex.
Explain why it is an advantage that it happens automatically.

.....

.....

[1 mark]

END OF QUESTIONS

Original practice questions written to match the specification. Not produced by, affiliated with or endorsed by AQA.

Mark scheme

GCSE Biology · Worksheet: The eye · 32 marks

Question 1 (4 marks)

01.1 [1 mark]

- they hold the lens in place, and pull it thin when the ciliary muscles relax (1)
-

01.2 [1 mark]

Correct: Ciliary muscles

01.3 [2 marks]

- contract (1)
 - loosen (slacken) (1)
-

Question 2 (5 marks)

02.1 [1 mark]

Correct: Retina

02.2 [1 mark]

Answer: Optic nerve

- optic nerve (1)
-

02.3 [1 mark]

- a tough outer layer that protects the eye (1)
-

02.4 [1 mark]

- it controls the size of the pupil / how much light enters the eye (1)
-

02.5 [1 mark]

- it lets light into the eye and refracts it (1)

Notes: Allow 'transparent covering at the front of the eye' or 'refracts / focuses light'.

Question 3 (8 marks)

03.1 [4 marks]

Answer: A: cornea; B: iris; E: retina; G: sclera

- A: cornea (1)
 - B: iris (1)
 - E: retina (1)
 - G: sclera (1)
-

03.2 [2 marks]

Answer: C: ciliary muscles; D: suspensory ligaments

- C: ciliary muscle(s) (1)
 - D: suspensory ligament(s) (1)
-

03.3 [1 mark]

Answer: F

- F (1)
-

03.4 [1 mark]

- it carries (nerve) impulses from the retina to the brain (1)
-

Question 4 (7 marks)

04.1 [3 marks]

- the ciliary muscles contract (1)
 - the suspensory ligaments loosen / slacken (1)
 - the lens becomes thicker / more rounded, so it refracts light more strongly (1)
-

04.2 [3 marks]

- the ciliary muscles relax (1)
 - the suspensory ligaments are pulled tight (1)
 - the lens is pulled thin, so it refracts light only slightly (1)
-

04.3 [1 mark]

- the light-sensitive receptors are in the retina (1)
-

Question 5 (8 marks)

05.1 [1 mark]

- the pupils get smaller / constrict (1)
-

05.2 [2 marks]

- the circular muscles (of the iris) contract (1)
 - the radial muscles relax (1)
-

05.3 [2 marks]

- less light enters the eye (1)
 - (so) the retina / light receptors are not damaged (1)
-

05.4 [2 marks]

- the radial muscles contract and the circular muscles relax (1)
 - the pupil dilates / gets larger, so more light enters the eye (1)
-

05.5 [1 mark]

- it happens rapidly (without thinking), so the eye is protected before damage occurs (1)
-