

14.2 Sense organs

Name: _____ Class: _____ Date: _____

Total: 7 marks

Objective

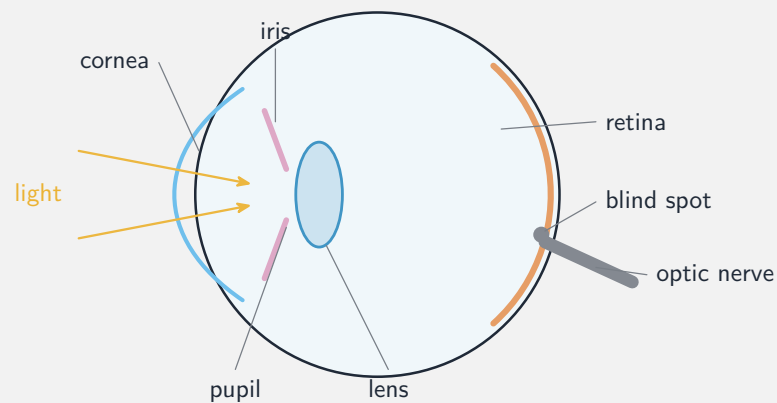
Build the skills to answer exam questions on **sense organs** 感觉器官—the parts of the **eye** 眼, the **pupil reflex** 瞳孔反射, **accommodation** 视觉调节, and rods and cones.

You must be able to:

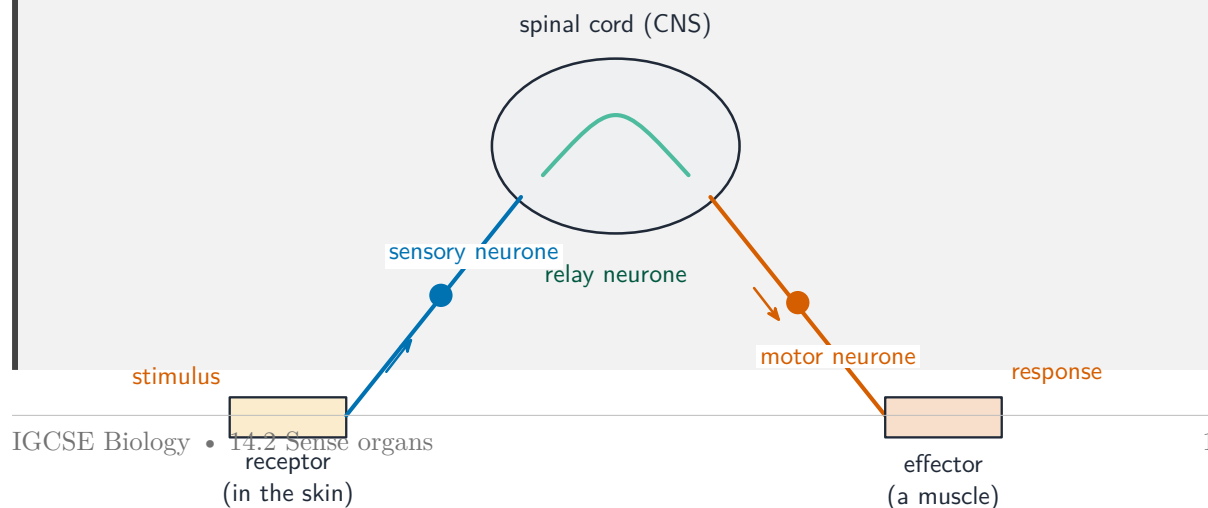
- name the parts of the eye and their functions
- explain the pupil reflex (antagonistic muscles)
- describe accommodation and the roles of rods and cones

1 Worked examples

■ The eye



Cornea and lens refract light onto the retina; impulses leave by the optic nerve



- **pupil reflex:** bright light → circular muscles contract → pupil narrows.
- **accommodation:** near object → ciliary muscles contract → lens fatter.
- **rods:** dim light (no colour); **cones:** colour, bright light.

2 Practice

2.1 State the function of the retina. [1]

2.2 State what happens to the pupil in bright light. [1]

3 Exam-style questions

3.1 The part of the eye that focuses light onto the retina is the: [1]

- **A** iris
 - **B** cornea only
 - **C** lens
 - **D** optic nerve
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3.2 The pupil changes size in different light.

(a) Explain how the pupil narrows in bright light. [2]

(b) State the difference between rods and cones. [2]

4 Go further

You are now ready for the real exam questions on this subtopic. Open the **14.2 Sense organs** past-paper sheet in the Library, or try these in **Practice mode**:

- 0610/21 N25 —Q21 (the eye)
- 0610/22 N25 —Q19 (pupil reflex / vision)

Solutions

2.1 it contains light receptors that detect light.

2.2 it gets smaller (narrows).

3.1 C. The lens focuses light onto the retina.

3.2 (a) the circular muscles of the iris contract; the radial muscles relax, so the pupil narrows.

(b) rods are sensitive in dim light but detect no colour; cones give colour vision and work best in bright light.