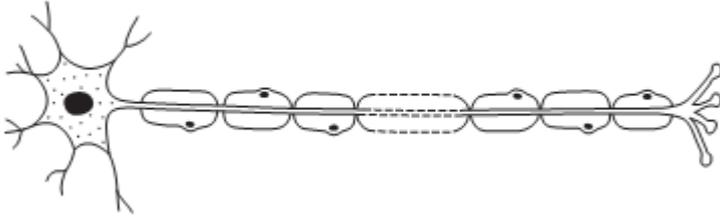


1 The diagram shows a cell.



What type of cell is shown?

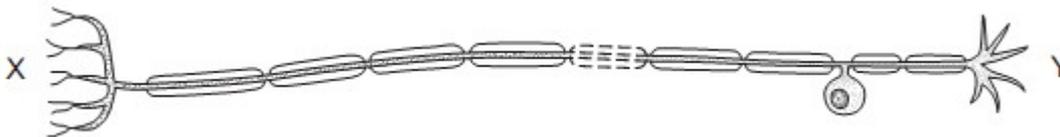
A ciliated cell B motor neurone C relay neurone D sensory neurone

2 When a bright light is shone into the eye, the diameter of the pupil decreases.

What is this an example of?

A accommodation
 B a simple reflex
 C photosynthesis
 D voluntary response

3 The diagram shows a neurone.



Which structures could be found at X and Y?

	X	Y
A	brain	intestine
B	brain	leg
C	eye	hand
D	skin	spinal cord

4 (a) Movement is a characteristic of living organisms.

Define the term movement. [1]

When the hand is stimulated by a hot object a reflex action occurs in which the fore-arm is raised.

Fig. 2.1 shows the muscles and the neurones involved in the reflex action.

The arrows show where there are nerve impulses during the reflex action.

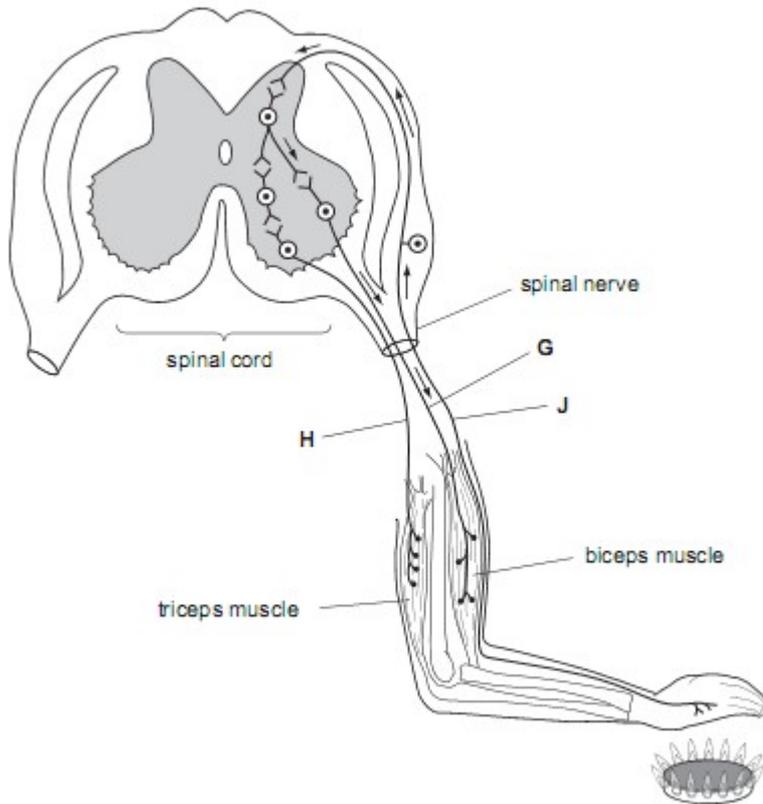
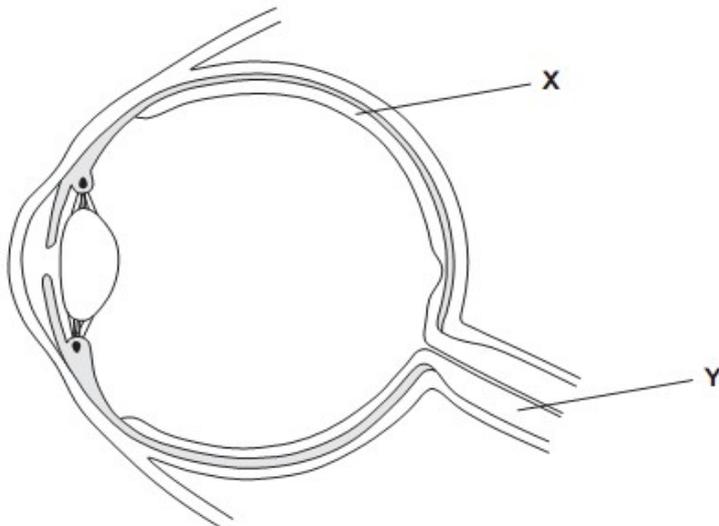


Fig. 2.1

- (b) (i) State the name for the action of two opposing muscles, such as the biceps and the triceps. [1]
 (ii) Explain how two opposing muscles bring about movement at the elbow joint. [3]
 (c) (i) Describe the function of neurone J. [2]
 (ii) Explain why there are impulses in motor neurone G, but not in motor neurone H. [2]
 (d) The action shown in Fig. 2.1 is an involuntary reflex action. The muscles can also be used for voluntary actions. Explain how muscles are controlled during voluntary actions. [2]
 [Total: 11]

5 The diagram shows a section through an eye.



What are structures X and Y?

- A organs in an organ system
 B organs in a tissue
 C organ systems in an organ
 D tissues in an organ

6 A bright light suddenly shines into a person's eyes.

What happens?

- A The lenses become more concave.
- B The lenses become more convex.
- C The pupils become larger.
- D The pupils become smaller.

7 (a) Complete the following paragraph using appropriate words.

Sense organs are composed of groups of cells that respond to specific . The sense organs that respond to chemicals are the and the . [4]

(b) The eye is a sense organ that focuses light rays by changing the shape of its lens. It does this by contracting its ciliary muscles.

(i) What links the ciliary muscles to the lens? [1]

(ii) Describe the change in shape of the lens when a person looks from a near object to a distant object. [1]

(c) Fig. 7.1 shows changes in the contraction of the ciliary muscles as a person watches a humming bird move from flower to flower while feeding on nectar.

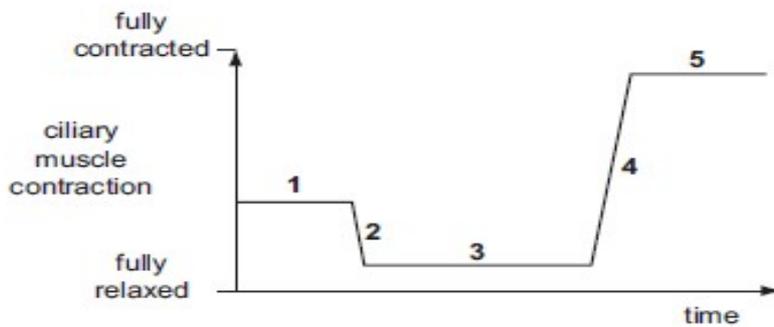


Fig. 7.1

In which period of time, 1, 2, 3, 4 or 5, was the bird

(i) feeding from a flower very near to the person, [1]

(ii) flying away from the person, [1]

(iii) flying towards the person. [1] [Total: 9]

8 Fig. 3.1 shows two photographs of a person's eye.

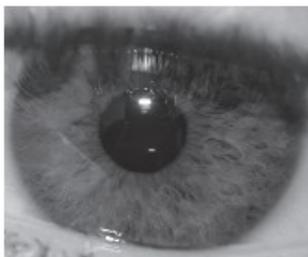
In photograph A the person was looking out of a window.

In photograph B the person had turned away from the window.

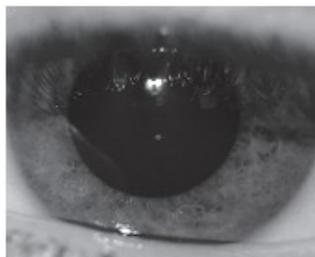
(a) Describe what happened to the diameter of the pupil in photograph B. [1]

(b) Explain your observation. [2]

[Total: 3]



A



B

Fig 3.1