

Coordination and Response

Question Paper 1

Level	IGCSE
Subject	Biology (0610/0970)
Exam Board	Cambridge International Examinations (CIE)
Topic	Coordination and Response
Sub-Topic	
Booklet	Question Paper 1

Time Allowed: 36 minutes

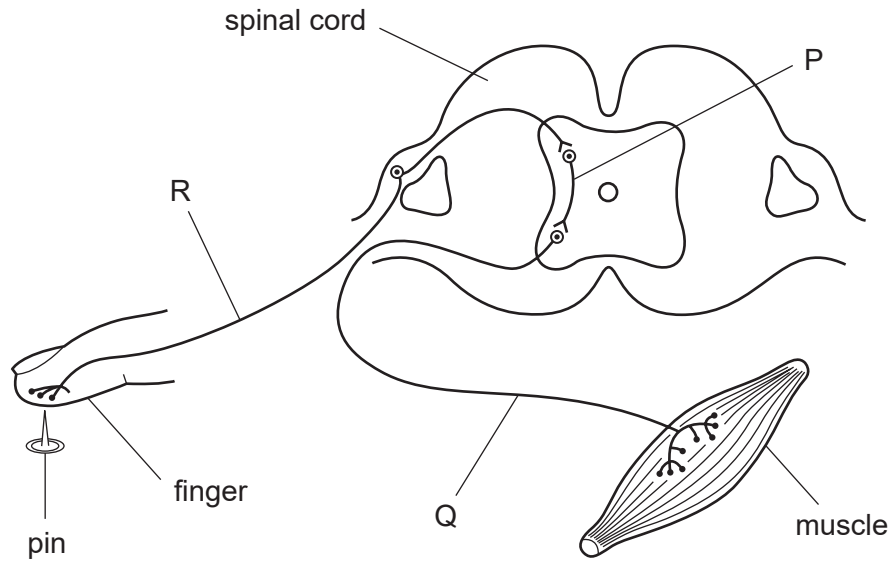
Score: /30

Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	53%	48%	40%	33%	<25%

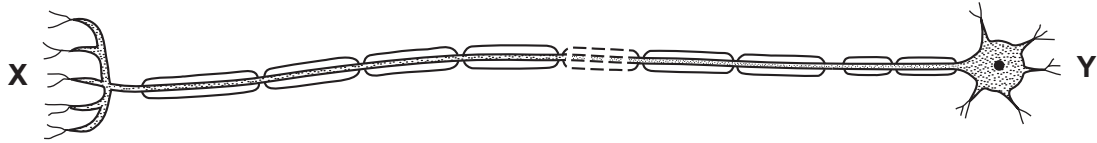
1 The diagram represents a simple reflex arc.



What is the sequence of nerve cells through which an impulse passes during a reflex action?

	first	→	last
A	P	Q	R
B	Q	R	P
C	Q	P	R
D	R	P	Q

2 The diagram shows a neurone.



Which structures could be found at X and Y?

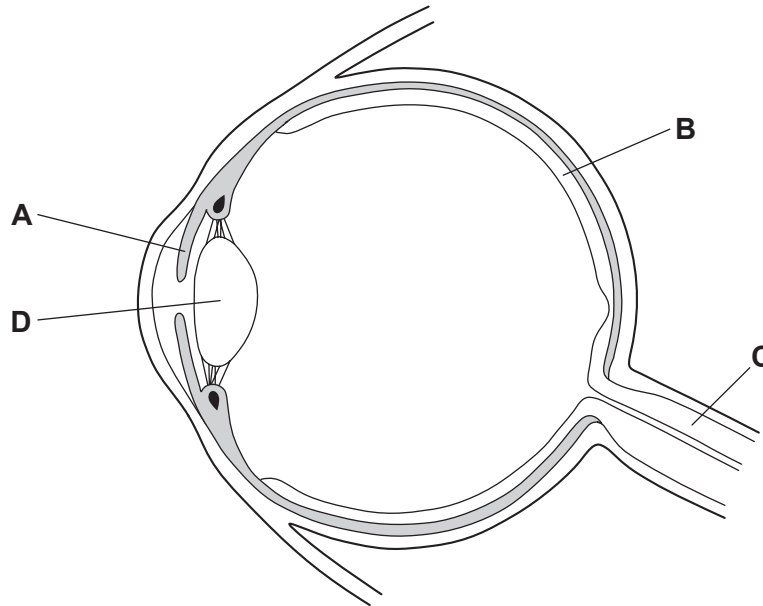
	X	Y
A	brain	intestine
B	brain	leg
C	eye	hand
D	gland	spinal cord

3 What will be the effect of strenuous exercise on the volume of water lost through the skin and the kidneys?

	volume of water lost through the skin	volume of water lost through the kidneys
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

4 The diagram shows a section through an eye.

Which structure controls how much light enters the pupil?



5 What are the effects of adrenaline?

	breathing rate	pulse rate
A	decreased	decreased
B	increased	increased
C	increased	no effect
D	no effect	increased

6 A person has been sitting in a room at 35°C for 30 minutes.

What would be the effect of then drinking several glasses of iced water?

	blood temperature	rate of sweating
A	falls	falls
B	falls	rises
C	rises	falls
D	rises	rises

7 What is an example of gravitropism?

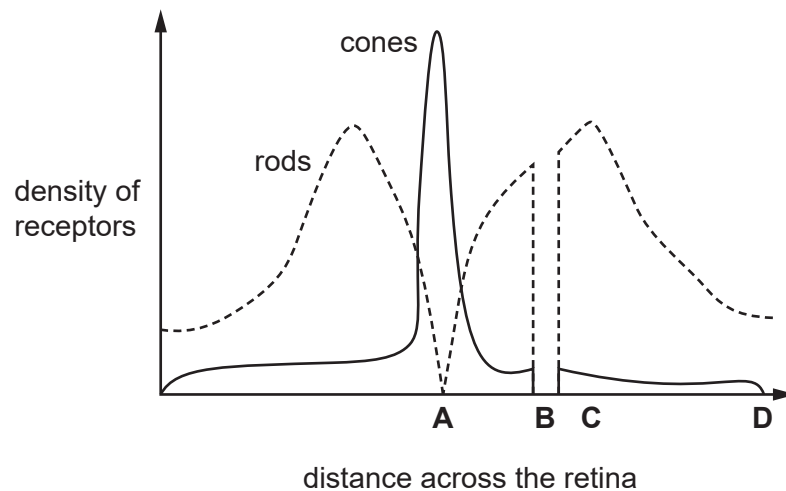
- A a chemical messenger produced by a plant
- B a painful sensation in response to a stimulus
- C the growth of a plant root towards the centre of the Earth
- D the growth of a plant shoot towards light

8 Which organ produces a hormone?

- A heart
- B lung
- C ovary
- D spinal cord

9 The diagram shows the density of rods and cones across a horizontal section of the retina.

What is the position of the optic nerve?



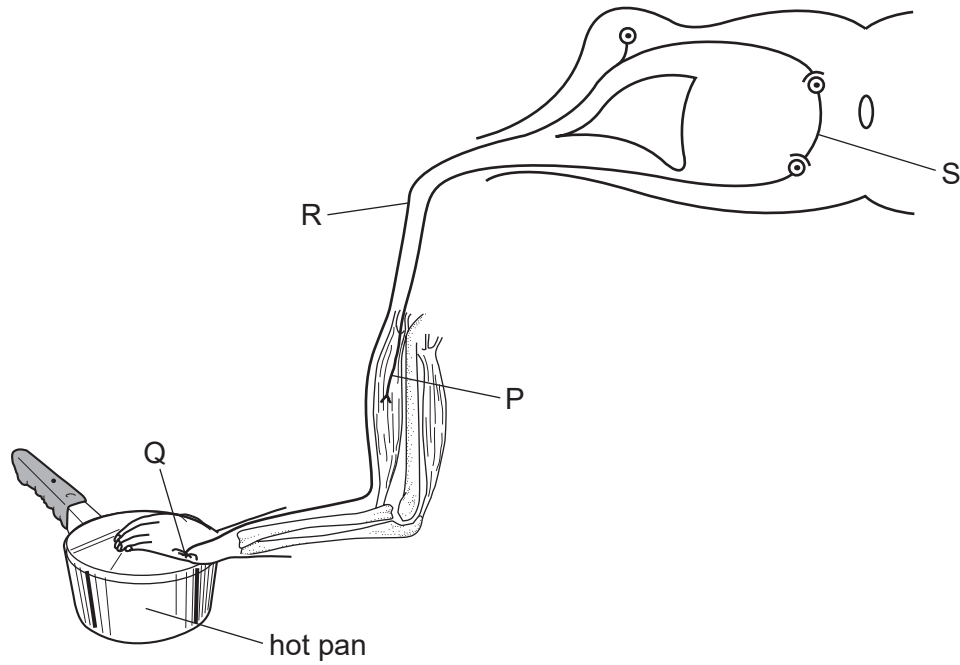
10 What are the effects of insulin and glucagon on the concentration of blood glucose?

	effect of insulin on blood glucose concentration	effect of glucagon on blood glucose concentration
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

11 What effect does adrenaline have on blood glucose concentration and pulse rate?

	blood glucose concentration	pulse rate
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

12 The diagram shows the structures involved in a reflex action.



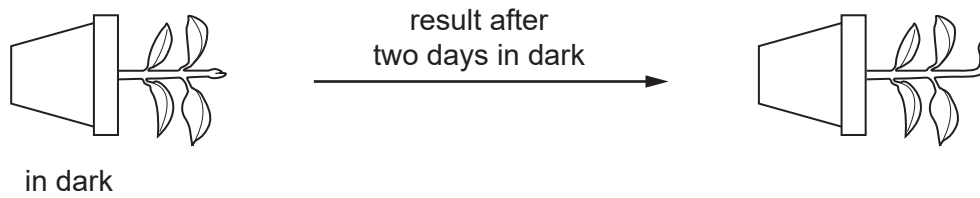
What is the sequence in which impulses pass through these structures?

- A $P \rightarrow S \rightarrow R \rightarrow Q$
- B $Q \rightarrow R \rightarrow S \rightarrow P$
- C $Q \rightarrow P \rightarrow R \rightarrow S$
- D $S \rightarrow P \rightarrow Q \rightarrow R$

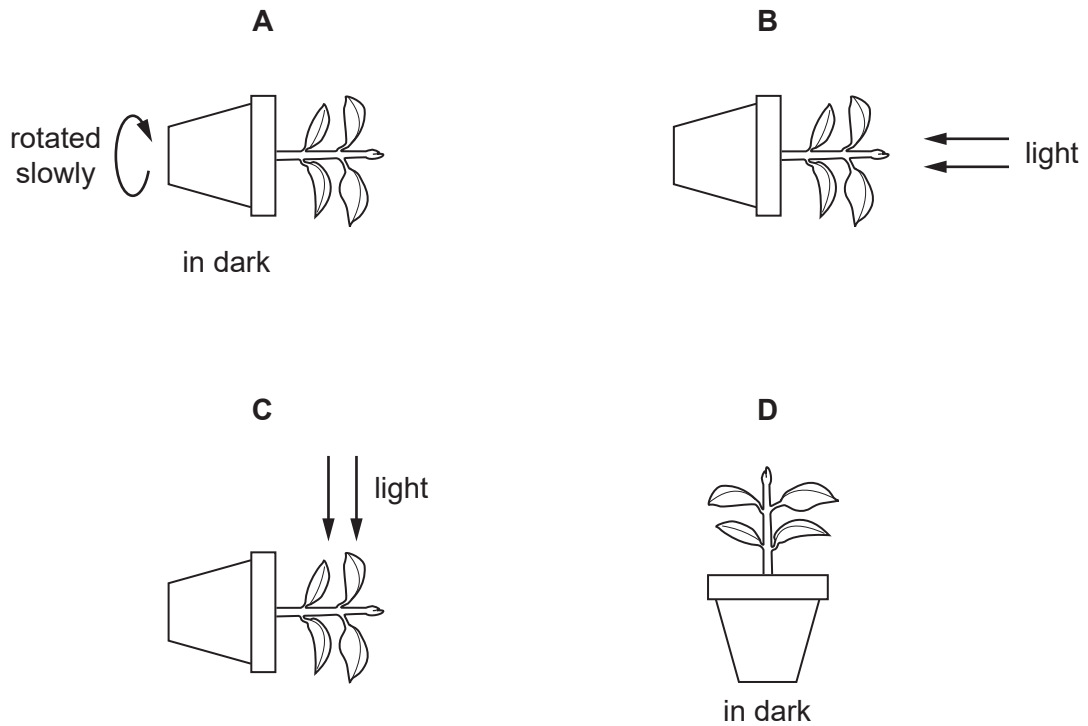
13 Which part of the human eye is sensitive to light?

- A iris
- B lens
- C optic nerve
- D retina

14 The diagram shows an experiment to investigate the response of a plant stem to gravity.



What is a suitable control for this experiment?



15 The fovea of the eye has three kinds of cones absorbing light of different colours.

Which row is correct?

	type of cone stimulated			
	red sensitive	blue sensitive	green sensitive	colour seen
A	no	yes	yes	red
B	yes	no	yes	blue
C	yes	yes	no	green
D	yes	yes	yes	white

16 A person eats a large bowl of rice.

What happens to the amounts of insulin, glucagon and glycogen in their body?

	insulin	glucagon	glycogen
A	decreases	decreases	increases
B	decreases	increases	decreases
C	increases	decreases	increases
D	increases	increases	decreases

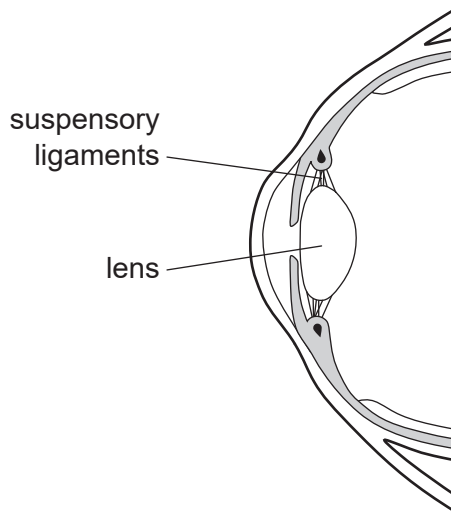
17 What is **not** an effect of the hormone adrenaline?

- A** decreased production of sweat
- B** dilated pupils
- C** increased blood glucose
- D** increased pulse rate

18 Why do mammals sweat?

- A to cool the body
- B to lose water vapour through the skin surface
- C to release energy through the oxidation of glucose
- D to remove glucose from the blood

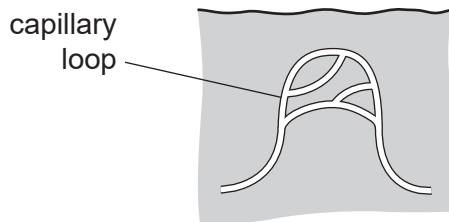
19 The diagram shows a section through part of the human eye.



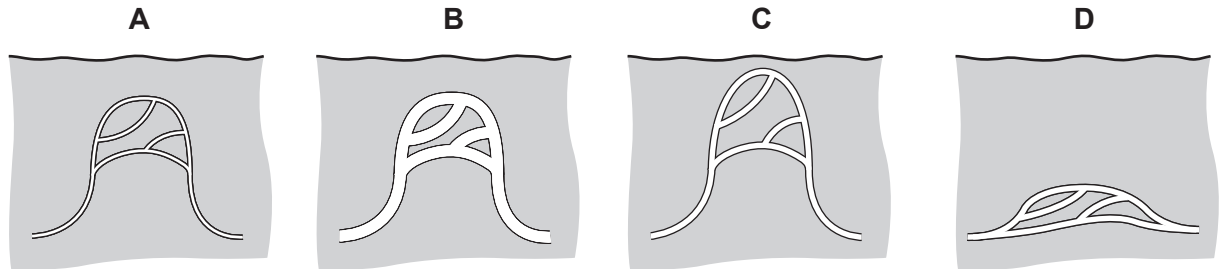
When a person looks at an object which is far away from their eye, which of the following happens?

	suspensory ligaments	lens
A	slacken	becomes fatter
B	slacken	becomes thinner
C	tighten	becomes fatter
D	tighten	becomes thinner

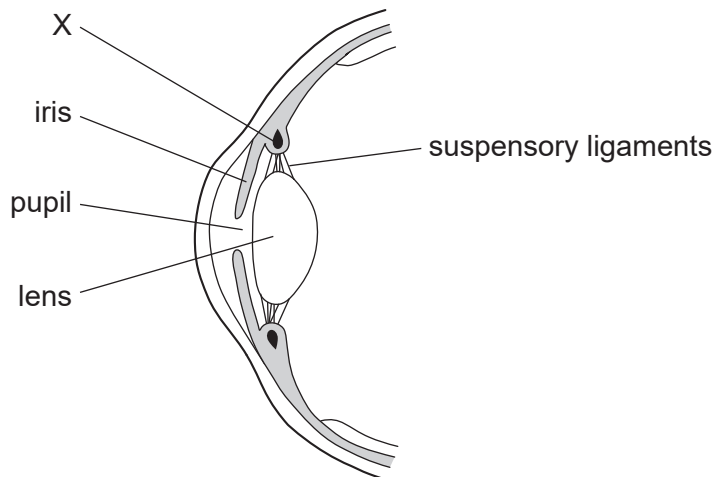
20 The diagram shows a capillary loop in the skin of a mammal.



What will the capillary loop look like if the mammal becomes cold?



21 The diagram shows a section through part of the eye.

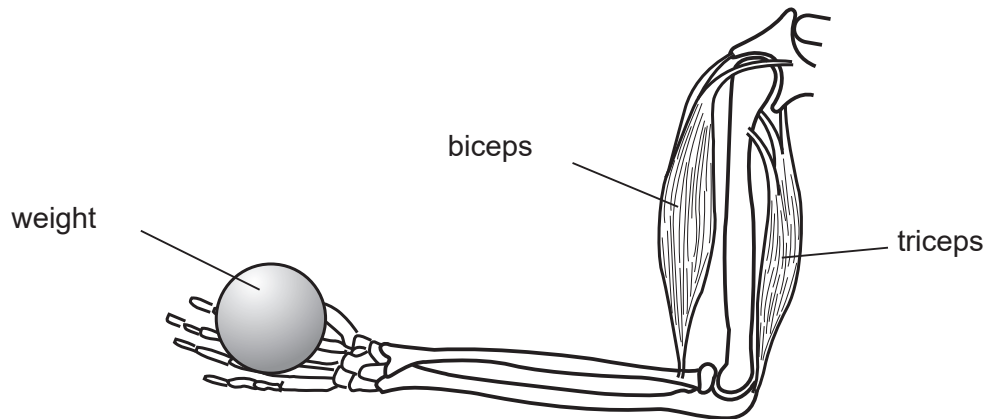


X is a contracted ciliary muscle.

What will happen when it relaxes?

- A The lens will decrease its curvature.
- B The lens will increase its curvature.
- C The size of the pupil will decrease.
- D The size of the pupil will increase.

22 The diagram shows muscles and bones in a person's arm.



What happens to the muscles as the weight is lowered?

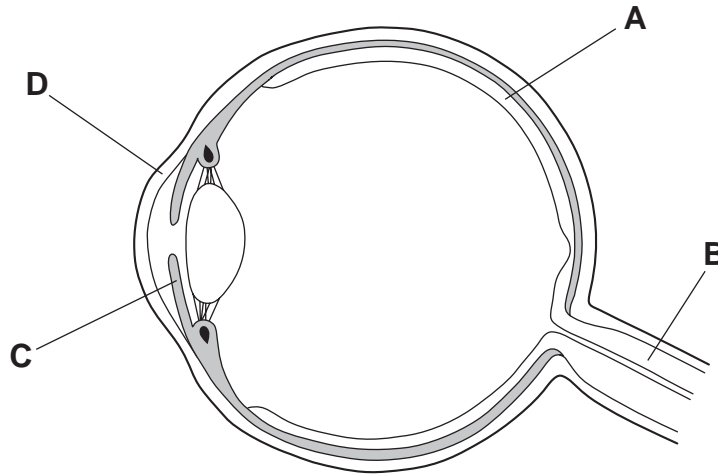
	biceps	triceps
A	lengthens	lengthens
B	lengthens	shortens
C	shortens	lengthens
D	shortens	shortens

23 In an experiment to investigate phototropism, a plant shoot is grown with light coming from one side only.

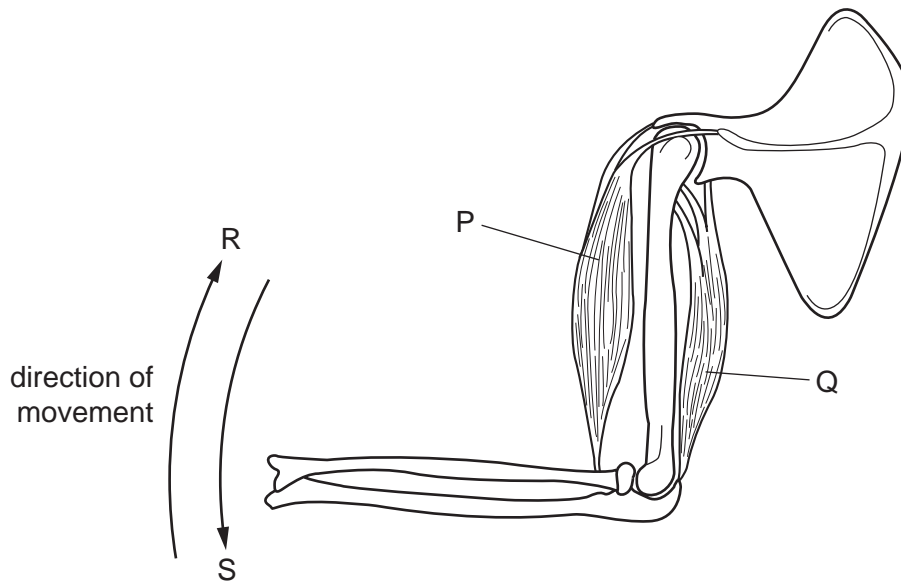
After two days, in which region has the greatest rate of growth occurred?



24 Which labelled part of the eye contains muscle?



25 The diagram shows two antagonistic muscles and the directions of movement that they produce.



Which row correctly identifies these muscles and the directions of movement they produce on contraction?

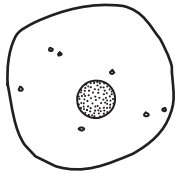
	muscle P		muscle Q	
	name	movement	name	movement
A	biceps	R	triceps	S
B	biceps	S	triceps	R
C	triceps	R	biceps	S
D	triceps	S	biceps	R

26 How does the skin react when the body becomes very warm?

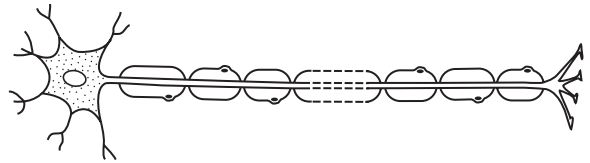
	blood vessels	sweat production
A	dilate	almost stops
B	dilate	increases
C	move towards skin surface	almost stops
D	move towards skin surface	increases

27 Which diagram shows a sensory neurone?

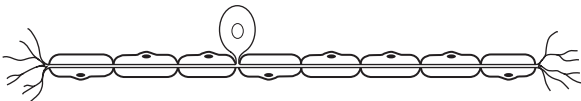
A



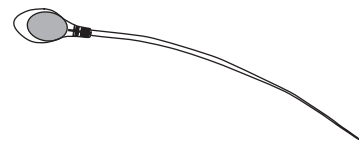
B



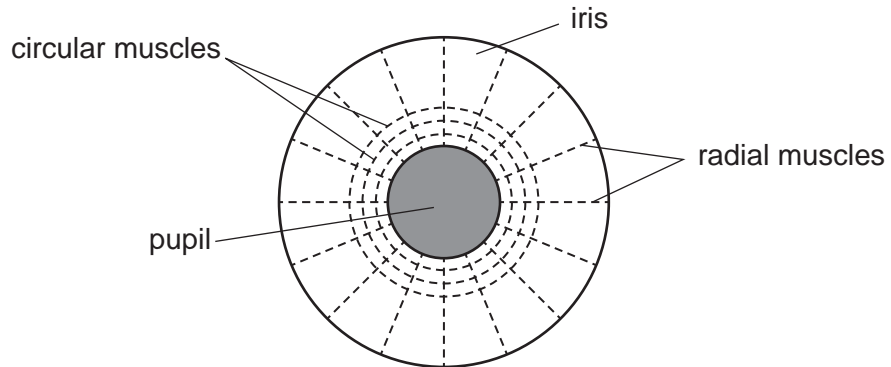
C



D



28 The diagram shows the muscles that control the size of the pupil in an eye.



How do the muscles make the pupil smaller?

	circular muscles	radial muscles
A	contract	contract
B	contract	relax
C	relax	contract
D	relax	relax

- 29 What would be the effects of vasodilation and sweating on the body temperature and on the amount of moisture on the surface of the skin?

	body temperature	moisture on skin surface
A	decreased	decreased
B	decreased	increased
C	increased	decreased
D	increased	increased

- 30 What would be the pupil size and lens shape of a person reading a mobile phone text message in a brightly-lit room?

	pupil size	lens shape
A	large	fat
B	large	thin
C	small	fat
D	small	thin