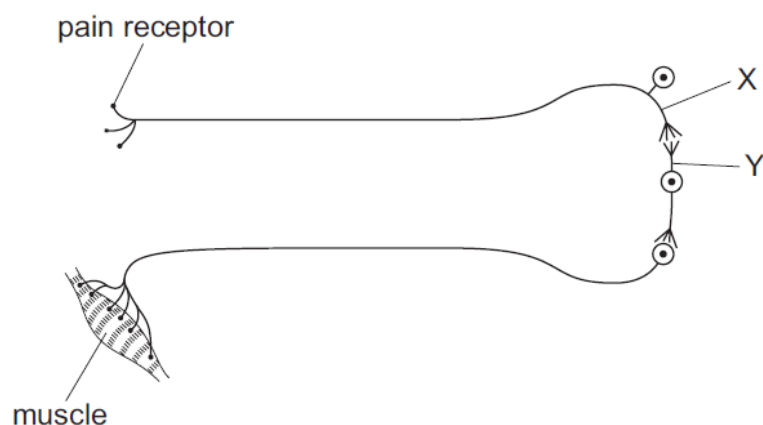


Coordination and response – 2021 IGCSE 0610**1. Nov/2021/Paper_11/No.26**

The diagram shows a reflex arc that passes through the spinal cord.

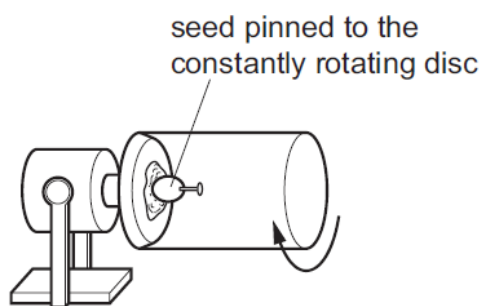


Which type of neurones are X and Y?

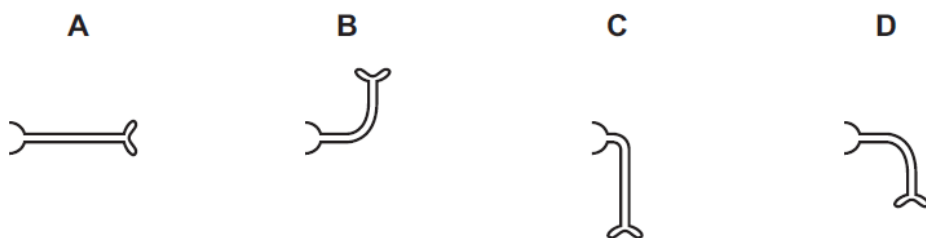
	X	Y
A	motor neurone	relay neurone
B	relay neurone	sensory neurone
C	sensory neurone	motor neurone
D	sensory neurone	relay neurone

2. Nov/2021/Paper_11/No.28

A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?



3. Nov/2021/Paper_12/No.26

The structures listed are part of the nervous system.

- 1 brain
- 2 effector
- 3 receptor
- 4 relay neurone

In a reflex arc, which structures are connected to a motor neurone by synapses?

- A** 1 and 2 **B** 1 and 3 **C** 2 and 4 **D** 3 and 4

4. Nov/2021/Paper_12/No.27

A student investigated the effect of changing light intensity on pupil diameter in the eye.

The table shows the results.

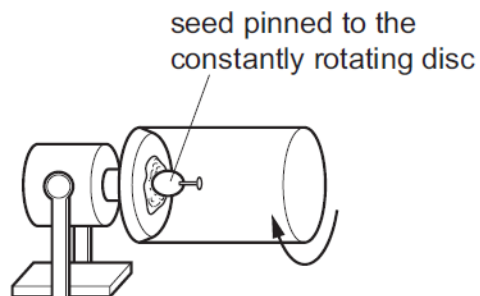
starting pupil diameter / mm	final pupil diameter / mm
8	2

Which explanation for the student's results is correct?

- A** A reduced light intensity reduced the pupil diameter by 75%.
- B** A reduced light intensity reduced the pupil diameter by 25%.
- C** An increased light intensity reduced the pupil diameter by 75%.
- D** An increased light intensity reduced the pupil diameter by 25%.

5. Nov/2021/Paper_12/No.28

A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?



6. Nov/2021/Paper_13/No.26

Which part of the eye changes in size in response to changes in light intensity?

- A cornea
- B lens
- C pupil
- D retina

7. Nov/2021/Paper_13/No.27

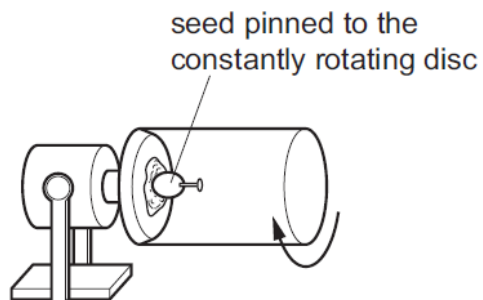
A scientist investigated how the human body reacts to temperature.

Which row shows the expected responses when the environmental temperatures are 0 °C and 40 °C?

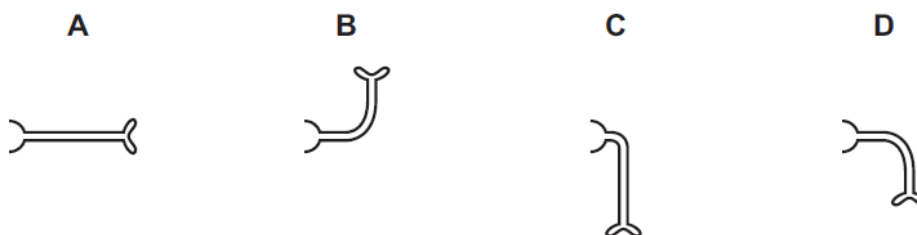
	0 °C	40 °C
A	sweating	no response
B	sweating	shivering
C	no response	sweating
D	shivering	sweating

8. Nov/2021/Paper_13/No.28

A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?



9. Nov/2021/Paper_21/No.24

Which situation is a voluntary action?

- A an increase in heart rate in response to danger
- B blinking to avoid injury to the eye
- C raising your hand to answer a question
- D sweating in hot weather

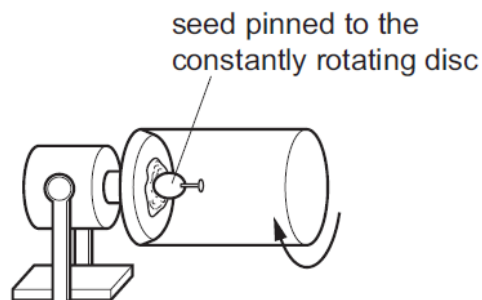
10. Nov/2021/Paper_21/No.26

How does the body increase blood glucose concentration?

- A Insulin released by the liver triggers the pancreas to release glucose.
- B Glucagon released by the pancreas triggers the liver to release glucose.
- C Insulin released by the pancreas triggers the liver to release glucose.
- D Glucagon released by the liver triggers the pancreas to release glucose.

11. Nov/2021/Paper_21/No.28

A seed is placed and grown on a rotating disc, as shown.



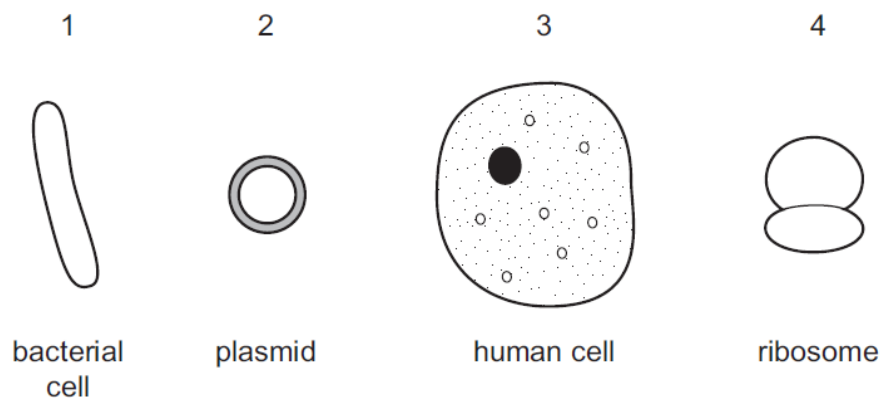
Which diagram shows the appearance of the seedling shoot after seven days?



12. Nov/2021/Paper_21/No.38

Human insulin is a protein that can be made by genetically engineered bacteria. This involves the transfer of genetic information to bacteria.

The diagrams show cells and parts of cells involved in this process.



13. Nov/2021/Paper_22/No.25

The structures listed are part of the nervous system.

- 1 brain
- 2 effector
- 3 receptor
- 4 relay neurone

In a reflex arc, which structures are connected to a motor neurone by synapses?

- A** 1 and 2 **B** 1 and 3 **C** 2 and 4 **D** 3 and 4

14. Nov/2021/Paper_22/No.26

Which process is a response of the body that is part of a negative feedback process?

- A release of insulin in response to low blood glucose concentration
- B vasoconstriction in response to an increase in blood temperature
- C synthesis of glycogen in response to increase in blood glucose concentration
- D sweating in response to a decrease in blood temperature

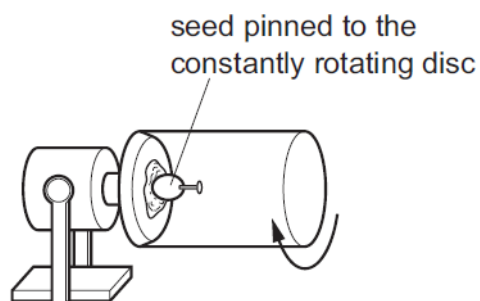
15. Nov/2021/Paper_22/No.27

Which row shows the pupil reflex in bright light?

	muscles in iris		size of pupil
	circular	radial	
A	contracts	relaxes	larger
B	contracts	relaxes	smaller
C	relaxes	contracts	larger
D	relaxes	contracts	smaller

16. Nov/2021/Paper_22/No.28

A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?



17. Nov/2021/Paper_23/No.25

What happens to the muscles in the iris when a person moves from a brightly lit room to a dimly lit room?

- A The circular muscles and the radial muscles relax.
- B The circular muscles contract and the radial muscles relax.
- C The circular muscles and the radial muscles contract.
- D The circular muscles relax and the radial muscles contract.

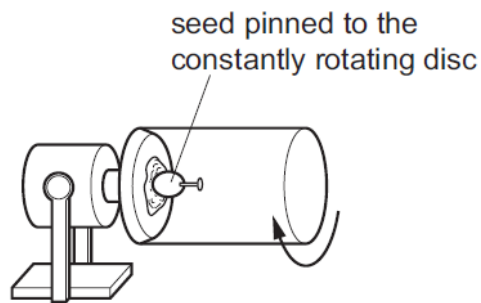
18. Nov/2021/Paper_23/No.26

What happens when someone has a low blood glucose concentration?

- A Insulin is released from the pancreas.
- B Glycogen is released from the pancreas.
- C Glucagon is released from the liver.
- D Glucose is released from the liver.

19. Nov/2021/Paper_23/No.28

A seed is placed and grown on a rotating disc, as shown.



Which diagram shows the appearance of the seedling shoot after seven days?



20. Nov/2021/Paper_32/No.1

(a) Fig. 1.1 is a diagram of the parts of the eye.

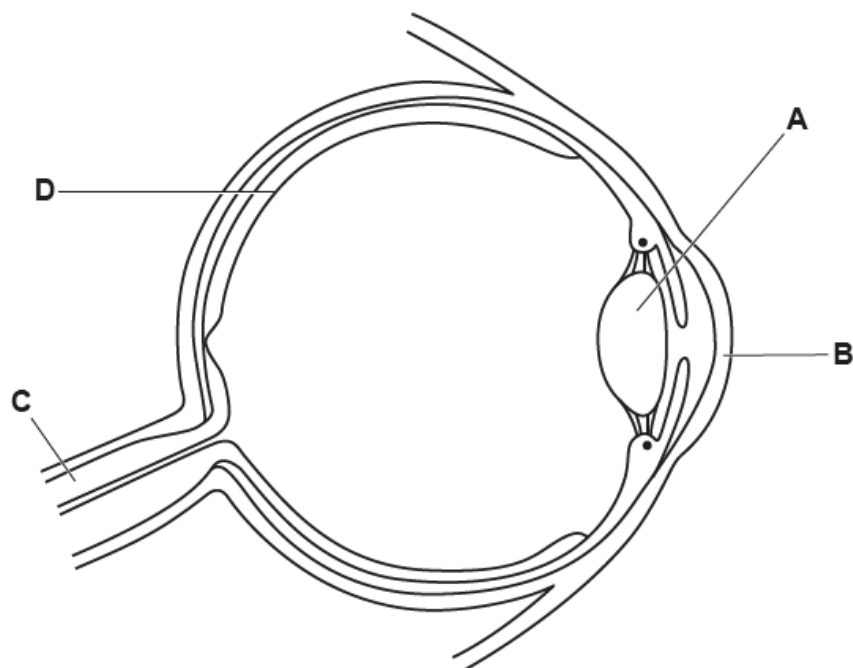


Fig. 1.1

(i) The boxes on the left show the letters of the parts of the eye in Fig. 1.1.

The boxes on the right show some functions of parts of the eye.

Draw lines to link the letter of the part from Fig. 1.1 to its function.

letter in Fig. 1.1

A

B

C

D

function

carries impulses to the brain

contains light receptors

focusses light onto the retina

refracts light as it enters the eye

[3]

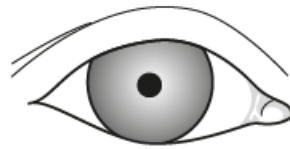
(ii) Draw an X on Fig. 1.1 to show the position of the blind spot.

[1]

(b) Fig. 1.2 shows the change that occurs in the eye after it is exposed to bright light.



before exposure



after exposure

Fig. 1.2

Describe the change to the eye in Fig. 1.2 **and** explain why this change is important.

.....

.....

.....

.....

.....

.....

..... [3]

(c) The eye is a sense organ.

The skin is another type of sense organ.

State **two** stimuli that skin responds to.

1

2

[2]

[Total: 9]

21. Nov/2021/Paper_42/No.4

Involuntary actions occur because nerve impulses travel along the components of reflex arcs.

An example of an involuntary action is the rapid movement of a hand after unexpectedly touching a very hot object.

Fig. 4.1 shows the structures that are involved in the movement of the hand.

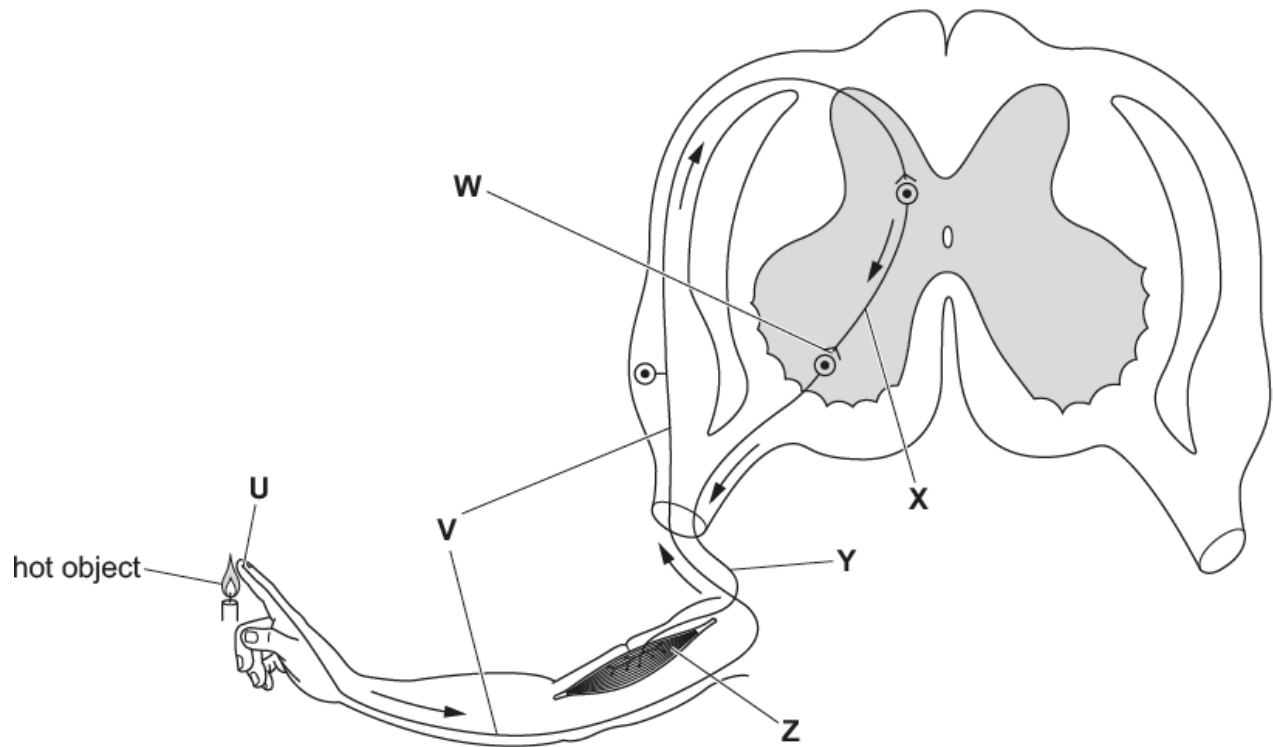


Fig. 4.1

- (a) Table 4.1 shows the functions of some of the structures shown in Fig. 4.1, the names of the structures and the letter from Fig. 4.1 that identifies each structure.

Complete Table 4.1.

Table 4.1

function	name	letter on Fig. 4.1
conducts impulses to central nervous system (CNS)		
conducts impulses to an effector		
conducts impulses only within the CNS		
	receptor	
		Z

[5]

(b) Fig. 4.2 shows the structure of the synapse at **W** on Fig. 4.1.

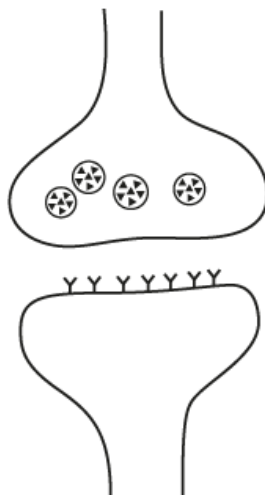


Fig. 4.2

Describe how an impulse travels across the synapse shown in Fig. 4.2.

.....

.....

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.....

.....

..... [4]

(c) State **one** example of a reflex action that occurs in the eye.

.....

.....

..... [1]

[Total: 10]