Coordination and response – 2022 November IGCSE 0610 Biology

1. Nov/2022/Paper_11/No.26

What is the order of structures that a nerve impulse travels through during a reflex action?

A effector → neurones → receptor

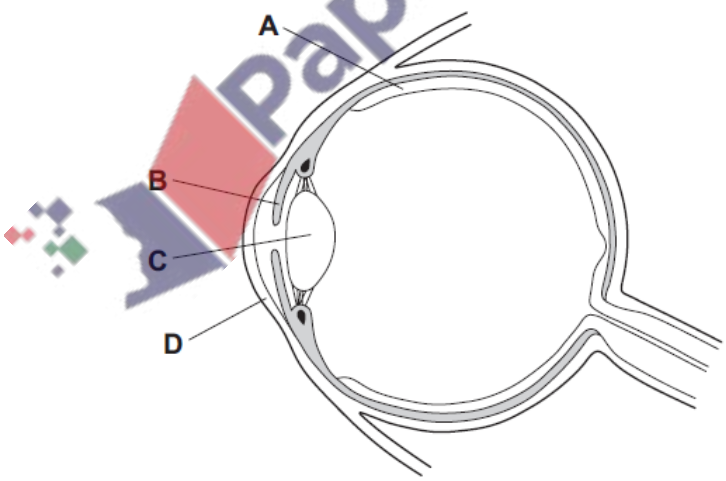
B receptor → neurones → effector

C neurones → effector → receptor

D receptor → effector → neurones

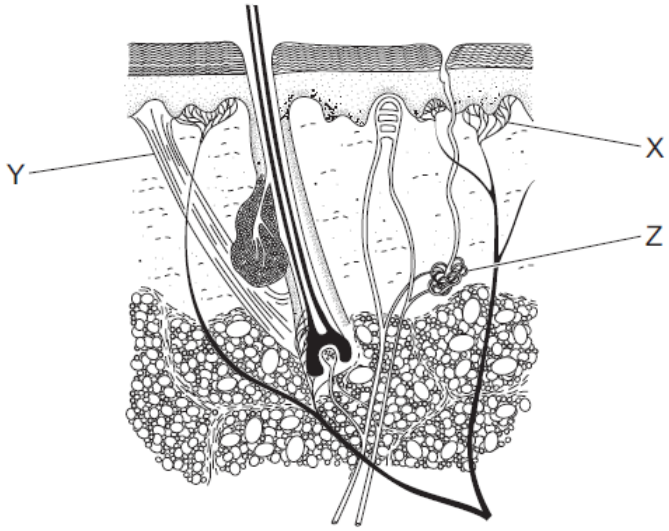
2. Nov/2022/Paper_11/No.27

Which structure can reduce how much light enters the eye?



3. Nov/2022/Paper_11/No.28

The diagram shows a section through human skin.



What are the structures labelled X, Y and Z?

	X	Y	Z
A	receptor	sweat gland	hair erector muscle
B	receptor	hair erector muscle	sweat gland
C	sweat gland	receptor	hair erector muscle
D	sweat gland	hair erector muscle	receptor

4. Nov/2022/Paper_12/No.26

Which part of the eye refracts light?

A cornea

B iris

C pupil

D retina

5. Nov/2022/Paper_12/No.28

Which row about tropic responses is correct?

	gravitropism	phototropism
A	root grows away from gravity	shoot grows away from light source
B	root grows away from gravity	shoot grows towards light source
C	root grows towards gravity	shoot grows away from light source
D	root grows towards gravity	shoot grows towards light source

6. Nov/2022/Paper_13/No.26

A person moves from a place with dim light to a place with bright light.

What will happen to the pupils in the person's eyes?

	size	controlled by
A	decreases	cornea
B	increases	cornea
C	decreases	iris
D	increases	iris

7. Nov/2022/Paper_13/No.27

Which endocrine gland secretes insulin?

A adrenal

B ovary

C pancreas

D testis

8. Nov/2022/Paper_13/No.28

Which factors affect the growth of plants?

A gravity and light only

B gravity, light and temperature

C gravity and temperature only

D light and temperature only

9. Nov/2022/Paper_21/No.24

What is a response to a low concentration of glucose in the blood?

A Glucagon will cause the body to convert glucose into glycogen.

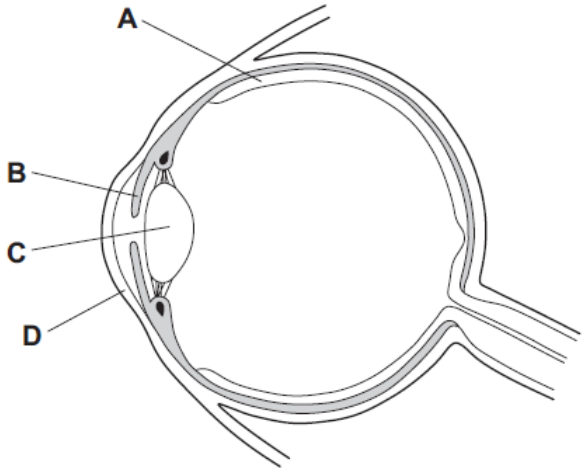
B Glucagon will cause the body to convert glycogen into glucose.

C Insulin will cause the body to convert glucose into glycogen.

D Insulin will cause the body to convert glycogen into glucose.

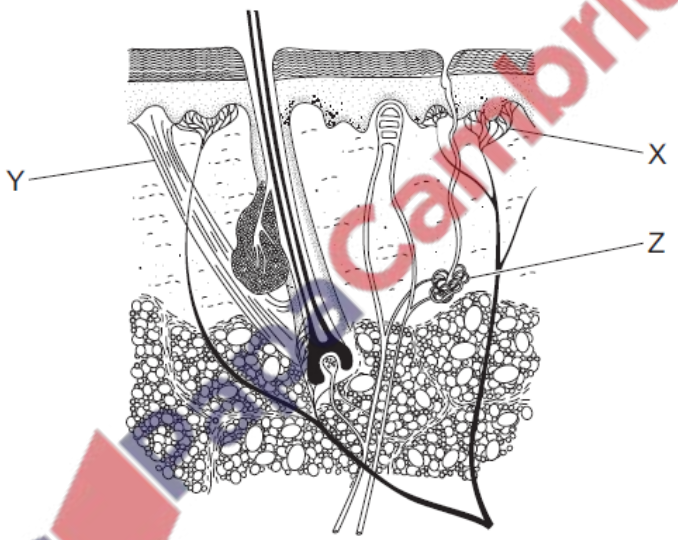
10. Nov/2022/Paper_21/No.25

Which structure can reduce how much light enters the eye?



11. Nov/2022/Paper_21/No.26

The diagram shows a section through human skin.



What are the structures labelled X, Y and Z?

	X	Y	Z
A	receptor	sweat gland	hair erector muscle
B	receptor	hair erector muscle	sweat gland
C	sweat gland	receptor	hair erector muscle
D	sweat gland	hair erector muscle	receptor

12. Nov/2022/Paper_22/No.24

What is a response to a low concentration of glucose in the blood?

A Glucagon will cause the body to convert glucose into glycogen.

B Glucagon will cause the body to convert glycogen into glucose.

C Insulin will cause the body to convert glucose into glycogen.

D Insulin will cause the body to convert glycogen into glucose.

13. Nov/2022/Paper_22/No.25

Which hormone causes an increase in breathing rate, an increase in heart rate and the widening of pupils?

A insulin

B adrenaline

C oestrogen

D testosterone

14. Nov/2022/Paper_22/No.26

Which row about tropic responses is correct?

	gravitropism	phototropism
A	root grows away from gravity	shoot grows away from light source
B	root grows away from gravity	shoot grows towards light source
C	root grows towards gravity	shoot grows away from light source
D	root grows towards gravity	shoot grows towards light source

15. Nov/2022/Paper_23/No.24

What is a response to a low concentration of glucose in the blood?

A Glucagon will cause the body to convert glucose into glycogen.

B Glucagon will cause the body to convert glycogen into glucose.

C Insulin will cause the body to convert glucose into glycogen.

D Insulin will cause the body to convert glycogen into glucose.

16. Nov/2022/Paper_23/No.25

Which endocrine gland secretes insulin?

A adrenal

B ovary

C pancreas

D testis

17. Nov/2022/Paper_23/No.26

Which factors affect the growth of plants?

A gravity and light only

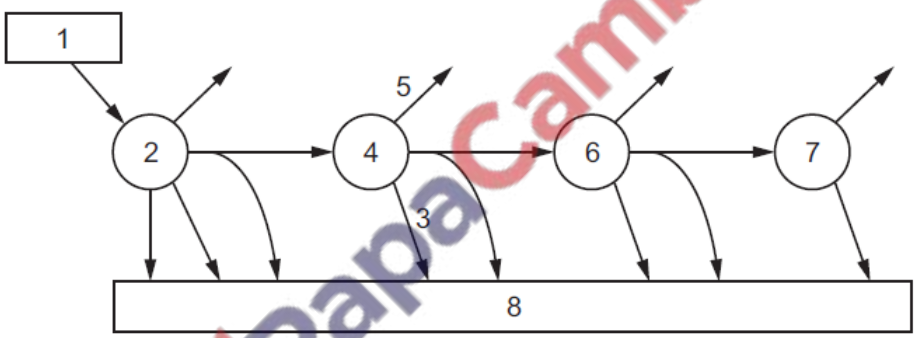
B gravity, light and temperature

C gravity and temperature only

D light and temperature only

18. Nov/2022/Paper_23/No.31

The diagram shows the flow of energy through a food chain.



Which row correctly labels this energy flow diagram?

	chemical energy in producers	chemical energy in decomposers	energy loss by respiration	energy loss by excretion	chemical energy in tertiary consumers
A	2	8	5	3	7
B	1	7	5	3	6
C	2	8	3	5	7
D	1	7	3	5	6

19. Nov/2022/Paper_32/No.9

(a) Fig. 9.1 contains some information about a reflex action.

A person touches a hot pan. **Electrical impulses travel to the central nervous system which coordinates a response.** **The muscles in the arm contract quickly.**

Fig. 9.1

(i) State the name of the stimulus from the example given in Fig. 9.1.

..... [1]

(ii) State the name of the effector from the example given in Fig. 9.1.

..... [1]

(iii) State the names of the **two** parts of the central nervous system.

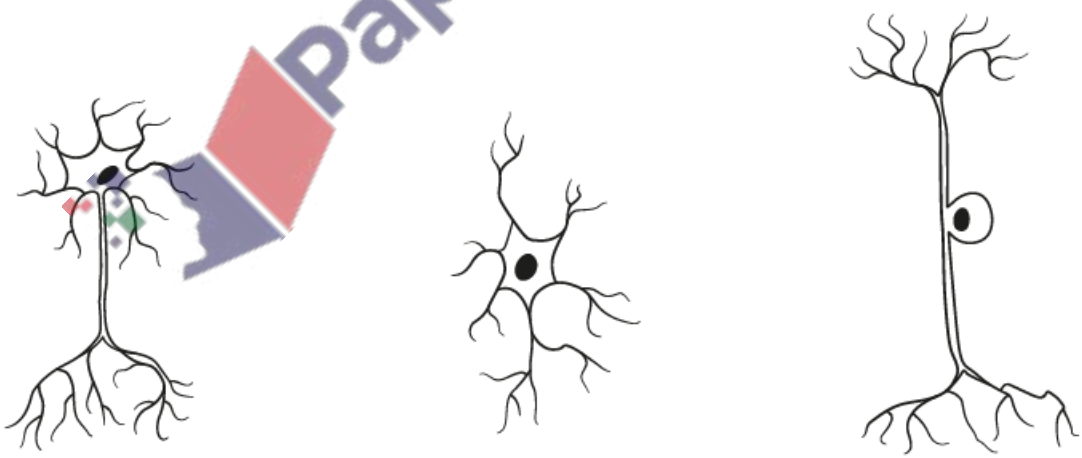
1 .....

2 .....

[2]

(b) Fig. 9.2 shows diagrams of three types of neurones.

State the names of the three types of neurones on the lines provided in Fig. 9.2.



....

not to scale

Fig. 9.2

[3]

(c) State the name given to the junction between two neurones.

..... [1]

[Total: 8]

20. Nov/2022/Paper_33/No.(9a_ b)

(a) Complete the description of the endocrine system, using words from the list.

Each word or phrase may be used once, more than once or not at all.

adrenal glands	**blood**	**chemical**	**decreases**	**electrical**
	increases	**narrows**	**nerves**	
oestrogen	**ovaries**	**testes**	**testosterone**	**widens**

Hormones are ..... substances that are produced by glands and carried by the ..... . A hormone alters the activity of a target organ.

An example of a hormone is adrenaline, which is produced in the ..... . Adrenaline ..... the breathing rate, ... the pulse rate and ..... the pupils.

[6]

(b) Fig. 9.1 is a diagram of some human organs.

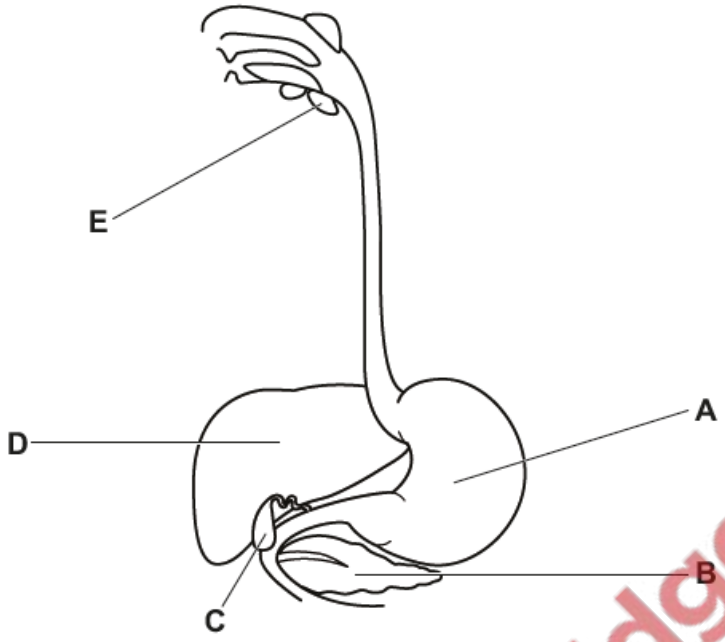


Fig. 9.1

(i) State the letter in Fig. 9.1 that identifies the organ that produces insulin.

..... [1]

(ii) State the function of insulin.

.....

.....

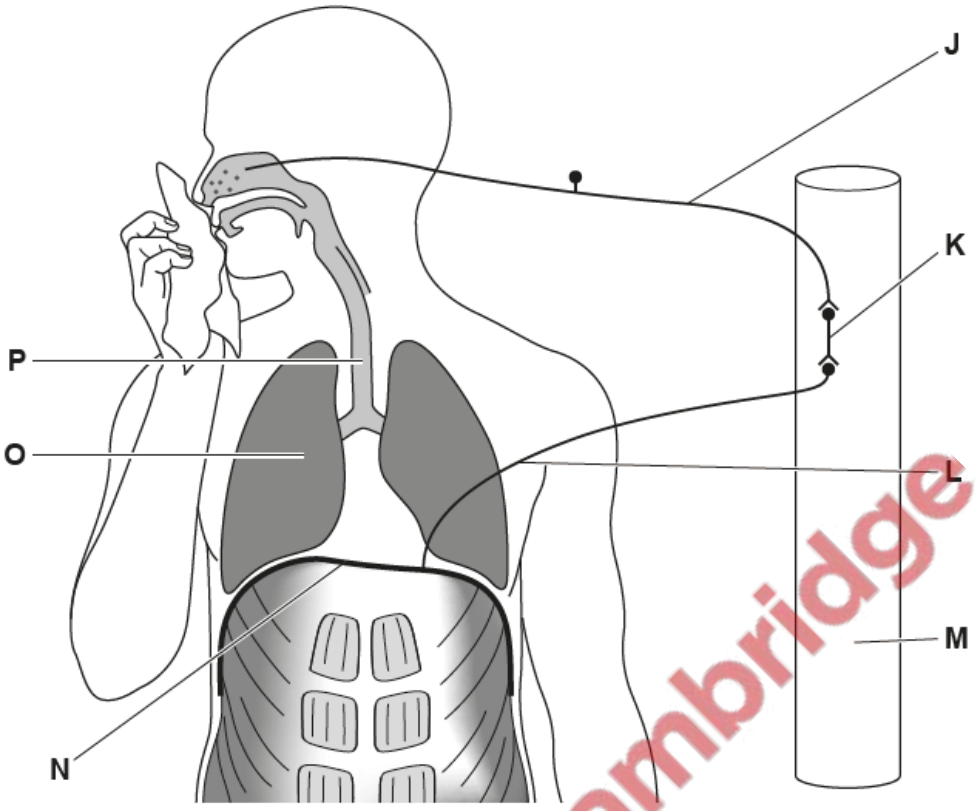
..... [1]

(iii) State the letter in Fig. 9.1 that identifies the organ that produces urea.

..... [1]

21. Nov/2022/Paper_43/No.1

(a) Fig. 1.1 is a diagram showing parts of two organ systems that are active when a person sneezes.



view of part of the gas exchange system view of part of the nervous system

not to scale

Fig. 1.1

(i) Sneezing is an automatic action that occurs in response to a stimulus in the nose.

State the name of this type of automatic action.

..... [1]

(ii) Table 1.1 shows the names and functions of some of the parts of the human body that are involved when a person sneezes, and the letters in Fig. 1.1 that identify these parts.

Complete Table 1.1.

Table 1.1

function	name of structure	letter in Fig. 1.1
cell that transmits an impulse from the receptor to the central nervous system		
	diaphragm	
		M
		K
contains cilia to move mucus out of the airway		

[5]

(b) Fig. 1.2 is a diagram of a cell from the human nervous system.

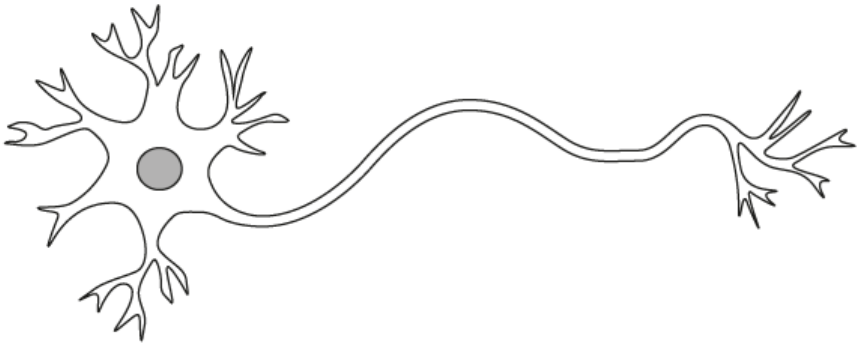


Fig. 1.2

(i) On Fig. 1.2, label **two** visible cell structures. [2]

(ii) Draw an **X** on the cell in Fig. 1.2 to show where a receptor molecule for a neurotransmitter would be found. [1]

(iii) Explain how the cell in Fig. 1.2 is adapted for transmitting impulses.

.....

.....

.....

.....

..... [2]

(c) Describe how nervous communication differs from hormonal communication.

.....

.....

.....

.....

.....

.....

..... [3]

[Total: 14]