

**GCSE Biology A (Gateway)**  
**J247/03** Paper 3 Biology (Higher Tier)

**Question Set 23**

Multiple Choice Questions

B3: Organism Level Systems

1.

Plant shoots grow towards sunlight.

Which term describes this behaviour?

- A Negative gravitropism
- B Negative phototropism
- C Positive gravitropism
- D Positive phototropism

Your answer

D

[1]

2

Which hormone is used to ripen fruit?

- A Adrenaline
- B Auxin
- C Ethene
- D Gibberellin

Your answer

C

[1]

3

Which response reduces heat transfer from the skin?

- A Shivering
- B Sweating
- C Vasoconstriction
- D Vasodilation

Your answer

C

[1]

4

Which part of the brain automatically controls heart rate and breathing rate?

- A Cerebellum
- B Cerebrum
- C Hypothalamus
- D Medulla

Your answer

D

[1]

5

How will an increase in ADH levels affect urine?

- A Higher concentration of urea
- B Higher volume
- C Lower concentration of sodium chloride
- D More dilute

Your answer

A

[1]

6

Which eye defect can be overcome by using spectacles containing concave lenses?

- A Colour blindness
- B Eye ball too short
- C Long sight
- D Short sight

Your answer

D

[1]

7

Which hormone is used to increase metabolic rate?

- A Insulin
- B Luteinising hormone
- C Testosterone
- D Thyroxine

Your answer

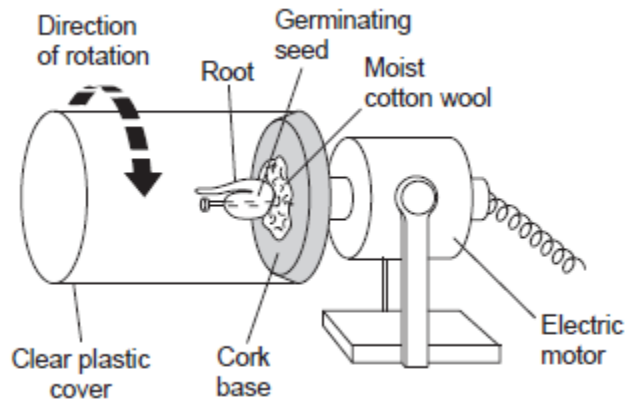
D

[1]

8

The diagram shows apparatus used in experiments on tropisms.

[1]



When the apparatus rotates, the root grows horizontally.  
Which tropism is **not** showing its usual effect on the root?

- A Negative gravitropism
- B Positive gravitropism
- C Negative phototropism
- D Positive phototropism

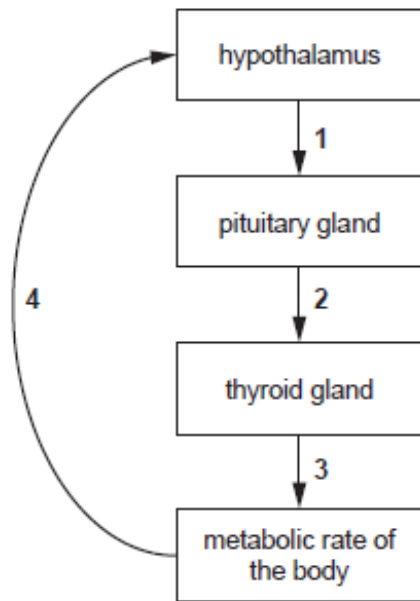
Your answer

B

9

The level of thyroxine in the body is controlled by negative feedback.

The diagram shows how this takes place.



[1]

Which numbers on the diagram represent the hormones TSH and thyroxine?

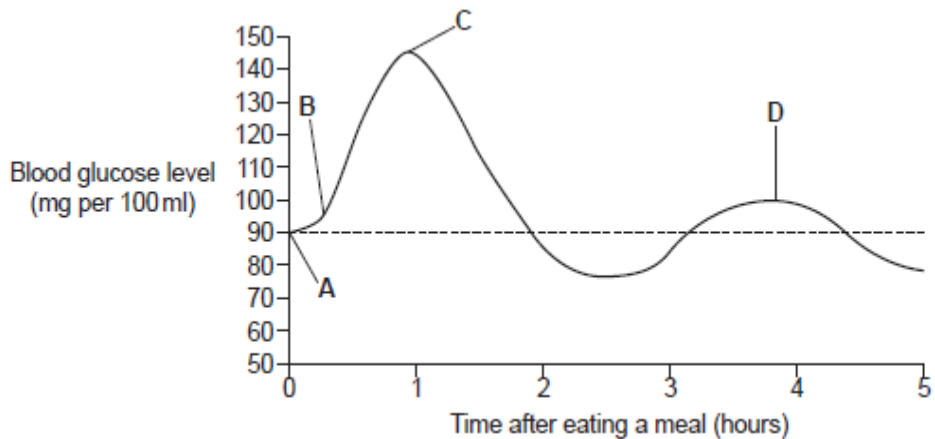
- A 2 = thyroxine      3 = TSH
- B 1 = TSH            3 = thyroxine
- C 3 = TSH            4 = thyroxine
- D 2 = TSH            3 = thyroxine

Your answer

**D**

10

The graph shows blood glucose levels after eating a meal.



Which point **A**, **B**, **C** or **D** on the graph would the insulin level in the blood be at its highest level?

Your answer

**C**

[1]

11 Which hormone is important in the fruit ripening process in plants?

- A Ethene
- B Gibberellin
- C Progesterone
- D Thyroxine

Your answer

A

[1]

12 Which condition can be caused by a lens in the eye that is too thick?

- A Long-sightedness
- B Colour blindness
- C Diabetes
- D Short-sightedness

Your answer

D

[1]

13 The eye switches from focusing on a distant television to focusing on a close up newspaper.

Which change happens to the suspensory ligaments and to the lens during this switch?

	Suspensory ligaments	Lens
A	slack to tight	thicker
B	slack to tight	thinner
C	tight to slack	thicker
D	tight to slack	thinner

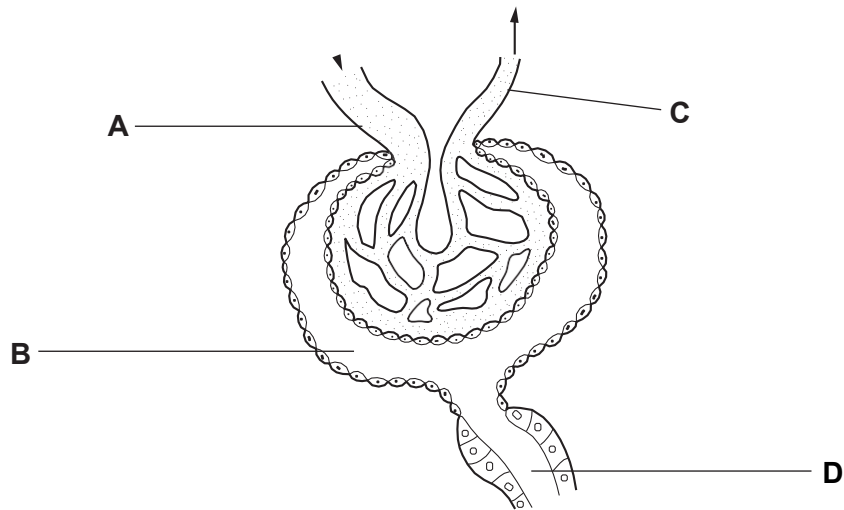
Your answer

C

[1]

14

The diagram shows part of a kidney tubule (nephron).



Which structure is the proximal convoluted tubule?

Your answer

**D**

[1]

15

Urine produced after vigorous exercise is often much darker in colour than urine produced when at rest.

Which reason explains why urine becomes darker in colour?

- A Increased sweating and decreased urea production.
- B Decreased ADH production and increased urea production.
- C Increased sweating and increased ADH production.
- D Increased ADH production and decreased urea production.

Your answer

**C**

[1]

16

Why are plant hormones used to cause parthenocarpic fruit development?

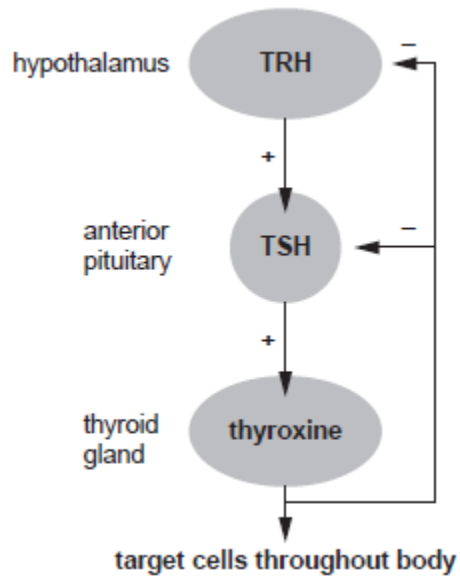
- A To delay dormancy
- B To selectively kill weeds
- C To produce seedless fruit
- D To shed leaves

Your answer

**C**

[1]

Thyroxine is a hormone controlled by negative feedback.



There is an **increase** in the metabolic rate of the body until the cells of the body have the required amount of energy.

Once the cells of the body have the required amount of energy what will happen to the levels of the three hormones in the blood?

- A all three will increase
- B all three will decrease
- C TRH and TSH will increase and thyroxine will decrease
- D TRH and TSH will decrease and thyroxine will increase

Your answer

B

[1]

**Total Marks for Question Set 3: 17**



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