

# **14. Coordination and response**

## **14.3 Hormones**

### **Paper 1 and 2**

Question Paper

## **Paper 1**

Questions are applicable for both core and extended candidates

1 Which statements about hormones are correct?

- 1 The ovaries secrete oestrogen.
- 2 The pancreas secretes adrenaline.
- 3 The pancreas secretes insulin.

**A** 1 and 3      **B** 1 only      **C** 2 and 3      **D** 2 only

2 What is an effect of adrenaline secretion?

- A** decreased breathing rate
- B** decreased pupil diameter
- C** development of secondary sexual characteristics
- D** increased heart rate

3 Where is insulin secreted, and what is its effect on blood glucose concentration?

	secreted by	effect on blood glucose concentration
<b>A</b>	liver	increases
<b>B</b>	liver	decreases
<b>C</b>	pancreas	increases
<b>D</b>	pancreas	decreases

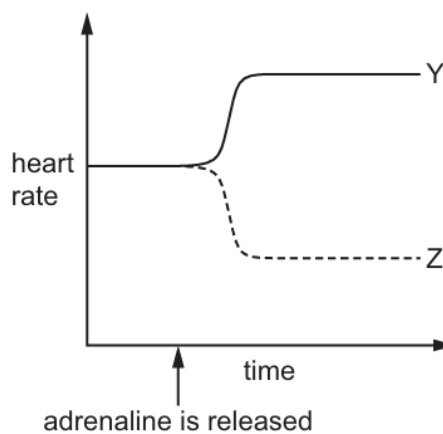
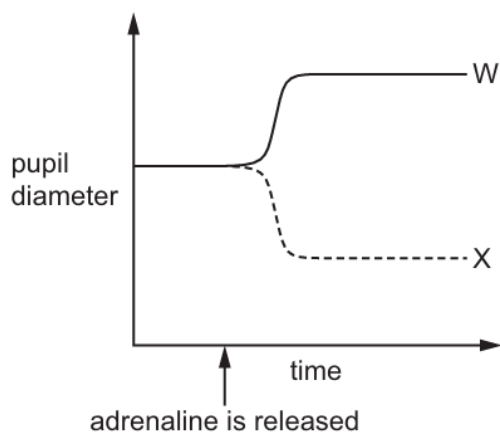
4 Which row shows the effects of adrenaline secretion?

	pupil diameter	heart rate
<b>A</b>	decreases	decreases
<b>B</b>	decreases	increases
<b>C</b>	increases	decreases
<b>D</b>	increases	increases

5 Which organ produces insulin?

- A** adrenal gland
- B** liver
- C** ovary
- D** pancreas

6 Which lines on the graphs show the effects of adrenaline on pupil diameter and heart rate?



**A** W and Y

**B** W and Z

**C** X and Y

**D** X and Z

- 7 Which statement about adrenaline is correct?
- A It decreases the heart rate.
  - B It decreases the diameter of the pupil.
  - C It increases the breathing rate.
  - D It is made in the pancreas.
- 8 A hormone is injected into a person to reduce their blood glucose concentration.
- Which endocrine gland is **not** functioning properly in a person who needs to have this injection?
- A adrenal gland
  - B ovary
  - C pancreas
  - D testis
- 9 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
- 10 Which endocrine gland produces insulin?
- A adrenal gland
  - B ovary
  - C pancreas
  - D testes

11 Which row matches each hormone to its function?

	causes the growth of facial hair	reduces blood glucose concentration	repairs the lining of the uterus	widens the pupils
<b>A</b>	oestrogen	insulin	testosterone	adrenaline
<b>B</b>	oestrogen	insulin	insulin	testosterone
<b>C</b>	testosterone	adrenaline	insulin	oestrogen
<b>D</b>	testosterone	insulin	oestrogen	adrenaline

12 Which hormone is secreted by the pancreas?

- A** adrenaline
- B** insulin
- C** oestrogen
- D** testosterone

13 Which hormone stimulates the development of male gametes?

- A** adrenaline
- B** insulin
- C** oestrogen
- D** testosterone

14 What are the effects of adrenaline on the human body?

	breathing rate	pulse rate	size of pupils
<b>A</b>	decreased	decreased	decreased
<b>B</b>	decreased	decreased	increased
<b>C</b>	increased	increased	decreased
<b>D</b>	increased	increased	increased

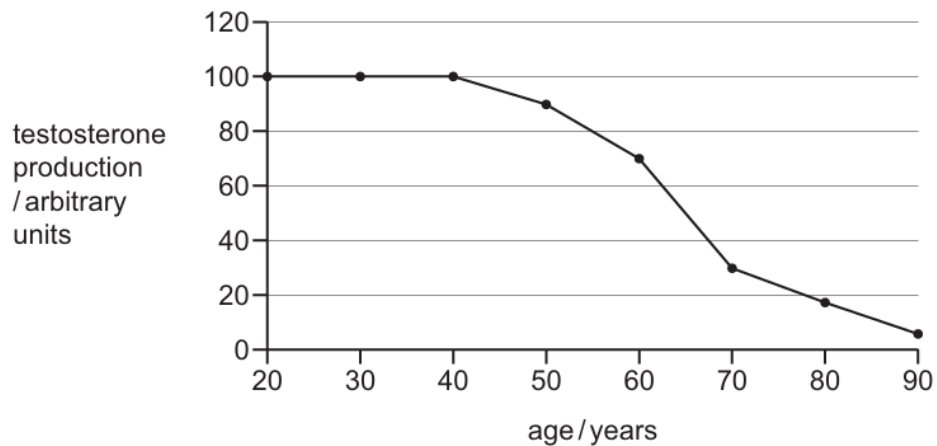
15 Examples of responses to hormones are listed.

- 1 increased breathing rate
- 2 increased pulse rate
- 3 growth of body hair
- 4 widened pupils

Which responses are caused by the hormone adrenaline?

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

16 The graph shows the decline in testosterone production as men get older.



Which age range shows the greatest decline in testosterone production?

- A** 40 to 50 years  
**B** 50 to 60 years  
**C** 60 to 70 years  
**D** 70 to 80 years

## **Paper 2**

**Questions are applicable for both core and extended candidates unless indicated in the question**

**17** Which statements about hormones are correct?

- 1 Adrenaline decreases pupil diameter.
- 2 Adrenaline increases pupil diameter.
- 3 Insulin decreases blood glucose concentration.
- 4 Insulin increases blood glucose concentration.

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

**18** Which hormones can increase blood glucose concentration? **(extended only)**

- A** adrenaline and insulin
- B** adrenaline and glucagon
- C** adrenaline only
- D** glucagon only

**19** What is the effect of adrenaline on pulse rate and blood glucose concentration? **(extended only)**

	pulse rate	blood glucose
<b>A</b>	decreases	decreases
<b>B</b>	decreases	increases
<b>C</b>	increases	decreases
<b>D</b>	increases	increases

20 Which hormones can cause the feminisation of male fish?

- A adrenaline and progesterone
- B adrenaline and testosterone
- C oestrogen and progesterone
- D oestrogen and testosterone

21 What is the result of the release of adrenaline? **(extended only)**

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

22 When hormones are secreted, they affect different parts of the body.

The table shows some features that are affected by four different hormones.

Which hormone is adrenaline? **(extended only)**

	feature				
	pulse rate	blood glucose concentration	pupil size	menstrual cycle	sperm production
A	✓	✓	x	x	x
B	x	x	x	x	✓
C	✓	✓	✓	x	x
D	x	x	x	✓	x

key  
 ✓ = affected by hormone  
 x = not affected by hormone

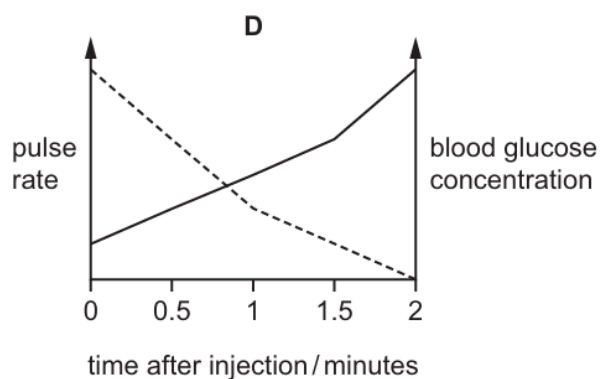
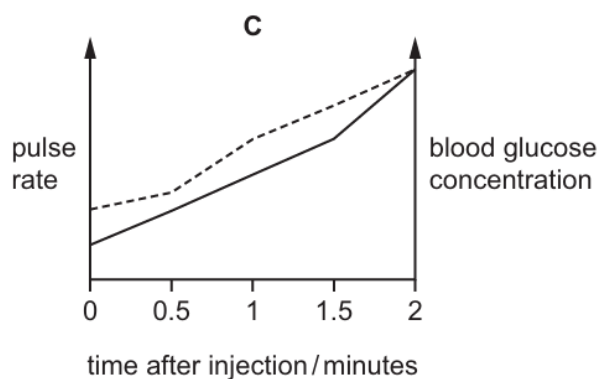
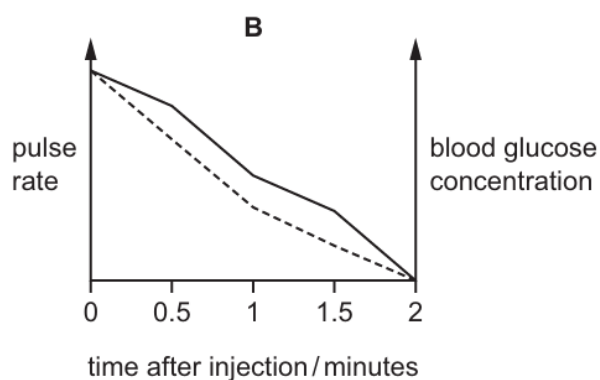
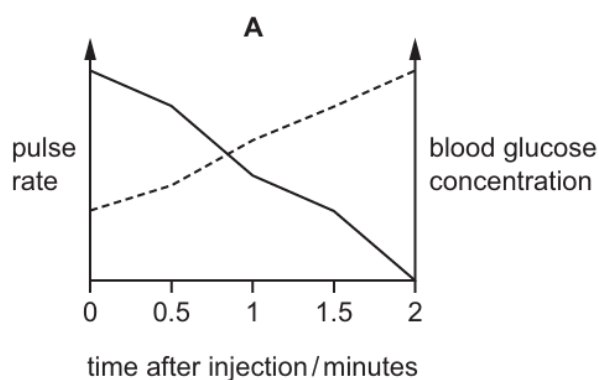


23 Which glands are endocrine glands?

- A adrenal, pancreas, testes
- B adrenal, ovaries, salivary
- C ovaries, sweat, testes
- D pancreas, salivary, sweat

24 A patient is injected with adrenaline.

Which graph shows the expected changes to pulse rate and blood glucose concentration? (extended only)



key  
 ----- pulse rate  
 ————— blood glucose concentration

25 Which hormone is involved in the conversion of glucose to glycogen?

- A adrenaline
- B insulin
- C oestrogen
- D testosterone

26 Hormones and the nervous system both control our bodies.

Which statement about the control provided by our hormones is correct?

- A fast response and long lasting
- B fast response and short lived
- C slow response and long lasting
- D slow response and short lived