

# Hormones

## Question Paper

Level	O Level
Subject	Biology
Exam Board	Cambridge International Examinations
Topic	Coordination & Response
Sub Topic	Hormones
Booklet	Question Paper

**Time Allowed:** 22 minutes

**Score:** /18

**Percentage:** /100

1 What is a role of adrenaline, and where is it destroyed in the body?

	role of adrenaline	destroyed by
<b>A</b>	glycerol changed to glucose	kidney
<b>B</b>	glycerol changed to glucose	liver
<b>C</b>	glycogen changed to glucose	kidney
<b>D</b>	glycogen changed to glucose	liver

2 A patient complains to the doctor of unexplained weight loss, severe thirst and frequent need of urination.

A test shows high levels of glucose in the urine.

Which condition does the doctor diagnose?

- A** cardiovascular disease
- B** diabetes
- C** kidney failure
- D** obesity

3 What are the symptoms of diabetes?

	concentration of glucose	
	in blood	in urine
<b>A</b>	+	+
<b>B</b>	+	–
<b>C</b>	–	+
<b>D</b>	–	–

key  
+ = increase  
– = decrease

4 What are the cause, signs and symptoms and treatment for diabetes mellitus?

	cause	signs and symptoms	treatment
<b>A</b>	damaged pancreas cells	excess sugar in blood	adrenaline injections
<b>B</b>	damaged pancreas cells	sugar in urine	insulin injections
<b>C</b>	sugar in urine	damaged pancreas cells	insulin injections
<b>D</b>	sugar in urine	damaged pancreas cells	adrenaline injections

5 Insulin is a hormone, synthesised in the pancreas and is distributed around the body by the blood.

What describes its rate of secretion and its concentration in the blood?

	rate of secretion	concentration in the blood
<b>A</b>	constant	constant
<b>B</b>	constant	varied
<b>C</b>	varied	constant
<b>D</b>	varied	varied

6 In a person suffering from diabetes mellitus, how do the concentrations of glucose in the blood and in the urine differ from those of a healthy person?

	concentration of glucose in blood	concentration of glucose in urine
<b>A</b>	higher	higher
<b>B</b>	higher	same
<b>C</b>	same	lower
<b>D</b>	lower	lower

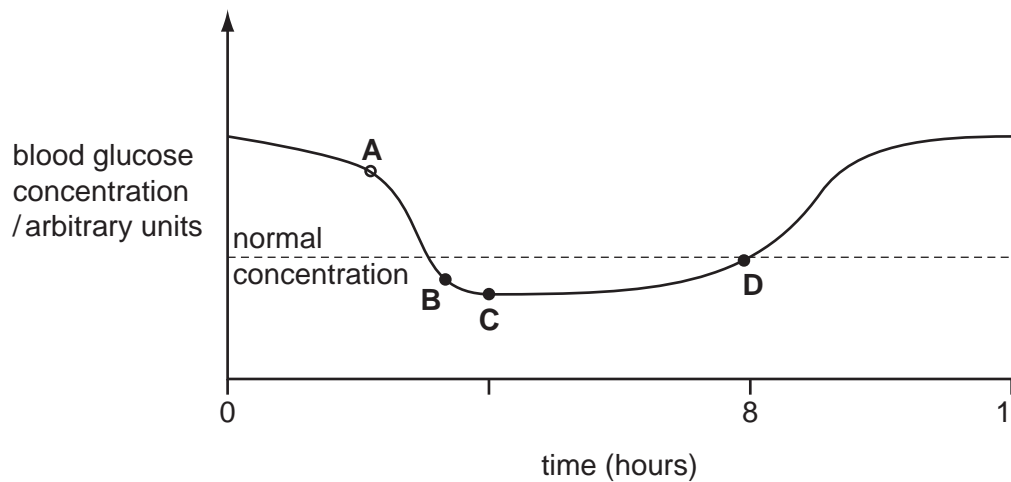
7 Which of these is a sign of diabetes mellitus?

- A lack of haemoglobin
- B raised blood glucose levels
- C reduced urine production
- D too much insulin

8 A person with diabetes mellitus is receiving treatment with insulin injections.

The graph shows how this person's blood glucose concentration changed during part of one day.

At what point was an insulin injection given?



9 What **decreases** as a result of adrenaline secretion?

- A blood sugar level
- B digestive activity
- C heart rate
- D size of the pupils of the eyes

10 How does adrenaline affect glucose uptake by muscle cells and carbohydrate conversion by liver cells?

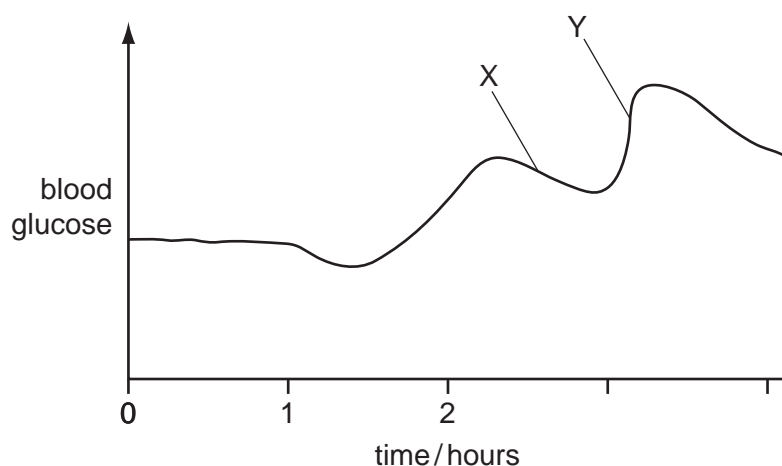
	glucose uptake	carbohydrate conversion
<b>A</b>	decreases	glucose to glycogen
<b>B</b>	decreases	glycogen to glucose
<b>C</b>	increases	glucose to glycogen
<b>D</b>	increases	glycogen to glucose

11 Adrenaline is secreted quickly when a person is frightened.

How does this affect the heart beat and the liver?

	heart beat	liver converts
<b>A</b>	decreases	glycogen to glucose
<b>B</b>	decreases	glucose to glycogen
<b>C</b>	increases	glycogen to glucose
<b>D</b>	increases	glucose to glycogen

12 The graph shows changes in a person’s blood glucose concentration over four hours.



What might cause the changes at X and Y?

	X	Y
<b>A</b>	decreased insulin	decreased adrenaline
<b>B</b>	decreased insulin	increased adrenaline
<b>C</b>	increased adrenaline	increased insulin
<b>D</b>	increased insulin	increased adrenaline

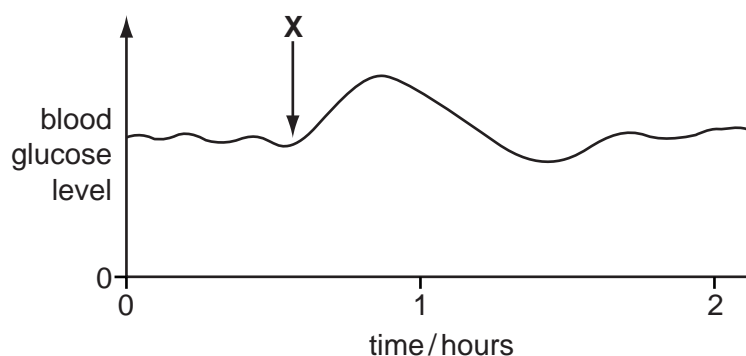
13 What is a sign of diabetes mellitus?

- A glucose in the blood
- B glucose in the urine
- C insulin in the blood
- D insulin in the urine

14 Which changes occur in the body when a person is shocked?

	increase in	decrease in
A	the diameter of the pupils in the eye	the speed of peristalsis
B	the rate of conversion of glycogen to glucose	the diameter of the pupils in the eye
C	the rate of urine formation	the rate of conversion of glycogen to glucose
D	the speed of peristalsis	the rate of urine formation

15 The graph shows changes in the glucose concentration in the blood of a person during two hours.



What explains the shape of the graph after X?

- A The person has eaten a sugary food.
- B The person has had an insulin injection.
- C The person is suffering from diabetes mellitus.
- D The person starts some physical exercise.

- 16 Which is a function of adrenalin?
- A to convert glycogen into glucose
  - B to decrease the breathing rate
  - C to increase the rate of peristalsis in the ileum
  - D to stimulate cells of the liver to take up glucose
- 17 When a person is frightened which responses will occur?
- A adrenaline released      heart beat increases      eye pupils dilate
  - B adrenaline released      blood glucose increases      urine production increases
  - C insulin released      breathing rate increases      peristalsis stops
  - D insulin released      eye pupils dilate      saliva secretion stops
- 18 When a person is frightened, which substance increases the blood sugar levels?
- A adrenaline
  - B carbon dioxide
  - C insulin
  - D lactic acid