

Past-paper walk-through

Sex hormones in humans ■ 16.5

eXercise

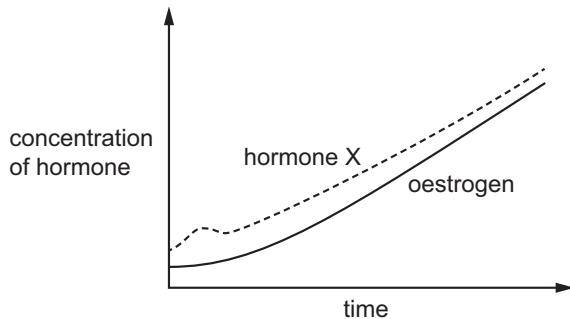
Questions in this set

- 0610/21 N25 Q25 ■ 1 mark
- 0610/21 N25 Q26 ■ 1 mark
- 0610/22 N25 Q25 ■ 1 mark
- 0610/23 N25 Q29 ■ 1 mark
- 0610/21 J25 Q28 ■ 1 mark
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- 0610/22 M25 Q28 ■ 1 mark

Question 25

0610/21 N25 ■ Q25 ■ 1 mark

25 The graph shows the concentrations of two hormones during pregnancy.



Question 25

Which organ secretes the most hormone X in the late stages of pregnancy?

- A** ovary
- B** placenta
- C** uterus
- D** vagina

Solution 25

Answer: **B**

Why

- Oestrogen and progesterone are both high during pregnancy.
- In the early weeks the ovary supplies them, from the corpus luteum.
- By the late stages the placenta has taken over, so it secretes the most.

Question 26

0610/21 N25 ■ Q26 ■ 1 mark

26 A person has a 28-day menstrual cycle.

On which day is the lining of the uterus thickest?

A 2

B 4

C 9

D 21

Solution 26

Answer: **D**

Why

- The lining builds up through the first half of the cycle.
- It reaches its greatest thickness after ovulation, while progesterone is high.
- That is around day 21 – it then breaks down at menstruation on day 1.

Question 25

0610/22 N25 ■ Q25 ■ 1 mark

25 Which substance is a hormone that is involved in the development and regulation of male secondary sexual characteristics?

- A** insulin
- B** glucagon
- C** lactase
- D** testosterone

Solution 25

Answer: **D**

Why

- Testosterone is the male sex hormone.
- It brings about and maintains the male secondary sexual characteristics.
- Insulin and glucagon control blood glucose, and lactase is an enzyme, not a hormone.

Question 29

0610/23 N25 ■ Q29 ■ 1 mark

29 Which hormone is produced by cells in the placenta of a developing fetus?

- A** FSH
- B** LH
- C** testosterone
- D** progesterone

Solution 29

Answer: **D**

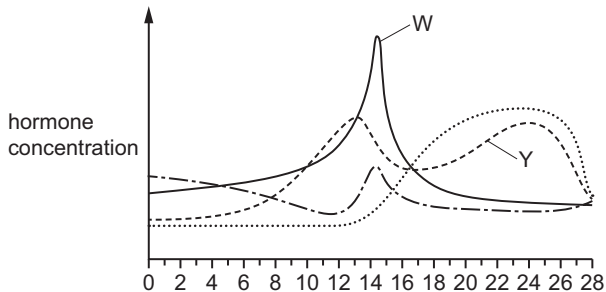
Why

- The placenta takes over hormone production from the ovary during pregnancy.
- It secretes progesterone, which maintains the lining of the uterus.
- FSH and LH come from the pituitary, and testosterone from the testes.

Question 28

0610/21 J25 ■ Q28 ■ 1 mark

- 28** The diagram shows the changing concentrations of some hormones involved in the menstrual cycle.



Question 28

days

Which letters identify two of the hormones?

- A** W is FSH and Y is oestrogen.
- B** W is LH and Y is oestrogen.
- C** W is progesterone and Y is FSH.
- D** W is progesterone and Y is LH.

Solution 28

Answer: **B**

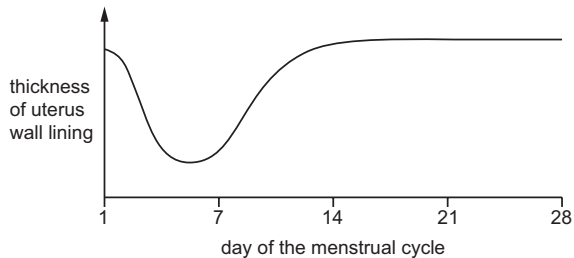
Why

- FSH and LH come from the pituitary; oestrogen and progesterone come from the ovary.
- LH shows a sharp peak around day 14, at ovulation.
- Progesterone rises after ovulation and stays high through the second half of the cycle.

Question 29

0610/23 J25 ■ Q29 ■ 1 mark

- 29** The graph shows changes in the thickness of the lining of the uterus wall during a menstrual cycle.



Which day is the last day of menstruation?

Question 29

A 4

B 8

C 16

D 20

Solution 29

Answer: **A**

Why

- The lining thickens through the first half of the cycle, ready for a fertilised egg.
- It is thickest in the second half, after ovulation, while progesterone is high.
- It then breaks down at menstruation, at the start of the next cycle.

Question 27

0610/22 M25 ■ Q27 ■ 1 mark

- 27** Which statement correctly describes the effect of a hormone in a human menstrual cycle that lasts for 28 days?
- A** FSH causes maturation of an egg up to day 21.
 - B** LH stimulates the release of an egg on day 14.
 - C** Oestrogen maintains the uterus lining between days 14 and 28.
 - D** Progesterone causes the repair and thickening of the uterus lining between days 4 to 14.

Solution 27

Answer: **B**

Why

- FSH acts in the first half of the cycle, maturing the follicle – not up to day 21.
- LH peaks around day 14 and triggers ovulation, the release of the egg.
- Progesterone then maintains the uterus lining in the second half.

Question 28

0610/22 M25 ■ Q28 ■ 1 mark

28 What is the main hormone responsible for the development of male secondary sexual characteristics?

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

Solution 28

Answer: **D**

Why

- Testosterone is the male sex hormone, made in the testes.
- It causes the male secondary sexual characteristics at puberty.
- Oestrogen is the female equivalent, insulin controls glucose and adrenaline prepares for action.