AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 4.5.3.3

Hormones in human reproduction

Past-paper questions

Tier	**Higher**
Question groups	**4**
Available paper years	**2018–2022**

Using this booklet

1. Answer the questions in order and show your working.
2. Original question numbers and marks are retained.
3. Print at actual size (100%) for measuring questions.
4. Use the companion answer booklet to check your work.

Name: _____ **Date:** _____

Whole questions are retained for context, so some parts assess other specification points. Current and legacy sources are labelled. Continue on extra paper if needed.

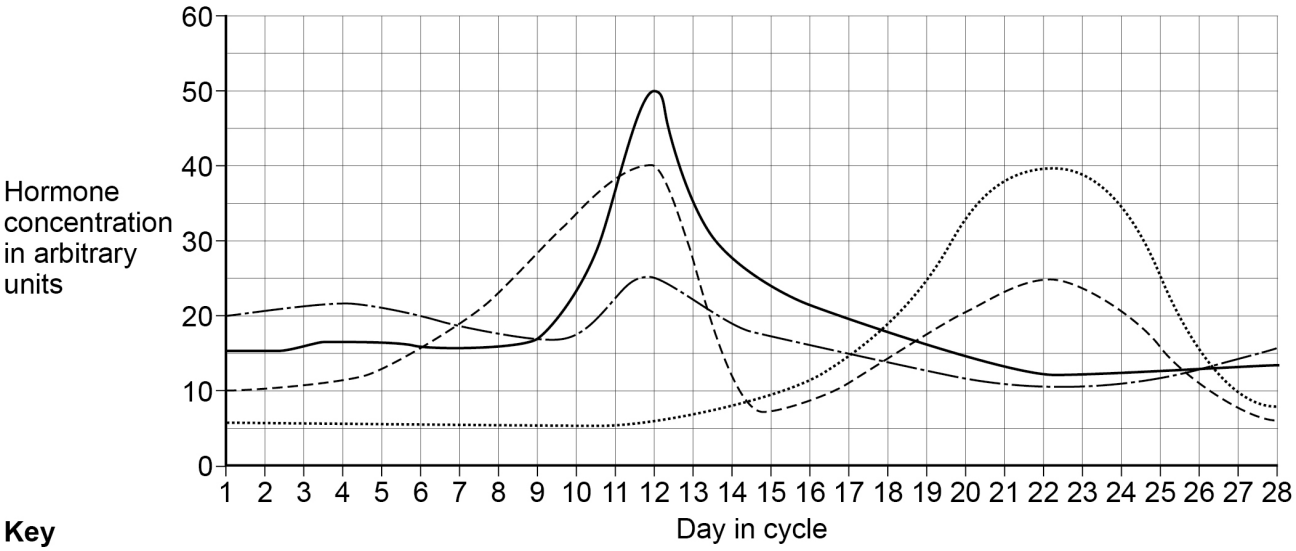
4.5.3.3 Hormones in human reproduction

Question 01

June 2018 | 8464/B/2H | Original Q6

0 6 **Figure 4** shows how hormone concentrations vary during a normal human menstrual cycle if a woman does not become pregnant.

Figure 4



0 6 . 1 Calculate the rate of increase in LH concentration between day 9 and day 12

Give your answer in arbitrary units per hour.

Give your answer to 2 significant figures.

[2 marks]

Rate = _____ arbitrary units per hour

4.5.3.3 Hormones in human reproduction

Question 01 · continued

0 6 . 2 Describe the sequence of hormone interactions in the menstrual cycle.

Name where each hormone is produced.

[5 marks]

0 6 . 3 Progesterone is used in some contraceptives.

Suggest **one** advantage of using a progesterone patch rather than a progesterone oral contraceptive.

[1 mark]

8

4.5.3.3 Hormones in human reproduction

Question 02

November 2020 | 8464/B/2H | Original Q4

0 4 . 1 In sexual reproduction, cells divide by meiosis to form gametes.

Which **two** statements are true for cell division by meiosis?

[2 marks]

Tick (✓) **two** boxes.

- Daughter cells have two sets of chromosomes. ☐
- Four daughter cells are formed. ☐
- The daughter cells are genetically identical. ☐
- The DNA replicates twice. ☐
- The parent cell divides twice. ☐

4.5.3.3 Hormones in human reproduction

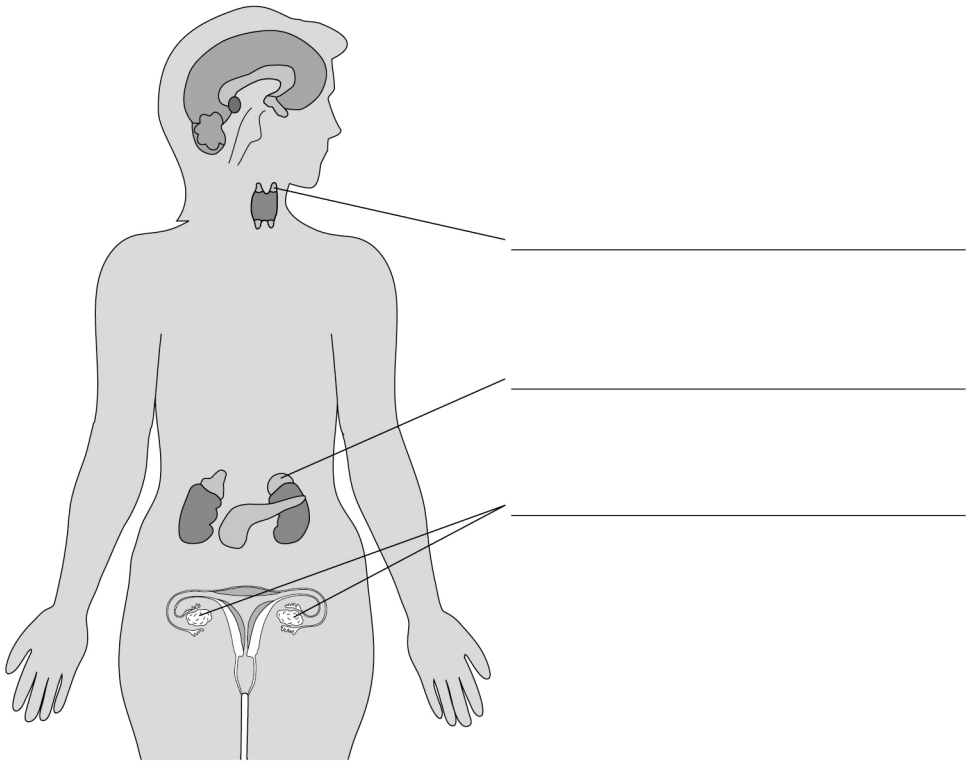
Question 02 · continued

Hormones are released from endocrine glands.

Each hormone travels in the bloodstream to a target organ.

Figure 3 shows the position of endocrine glands in a female.

Figure 3



0 4 . 2 Label the endocrine glands on **Figure 3**.

[3 marks]

Question 4 continues on the next page

0 4 . 3 Complete **Table 2**.

[3 marks]

Table 2

Hormone	Name of gland which releases hormone	Target organ of hormone
Luteinising hormone (LH)	Pituitary gland	
	Adrenal gland	
Glucagon		

Millions of geranium plants are sold each year in garden centres.

Geraniums can be reproduced asexually or sexually.

Figure 4 shows a potted geranium plant.

Figure 4



4.5.3.3 Hormones in human reproduction

Question 02 · continued

Garden centres usually grow new geranium plants by asexual reproduction.

0 4 . 4 Suggest **two** advantages for garden centres of growing geraniums by asexual reproduction compared with sexual reproduction.

[2 marks]

1 _____

_____

2 _____

_____

0 4 . 5 Suggest **two** disadvantages for garden centres of growing geraniums by asexual reproduction compared with sexual reproduction.

[2 marks]

1 _____

_____

2 _____

_____

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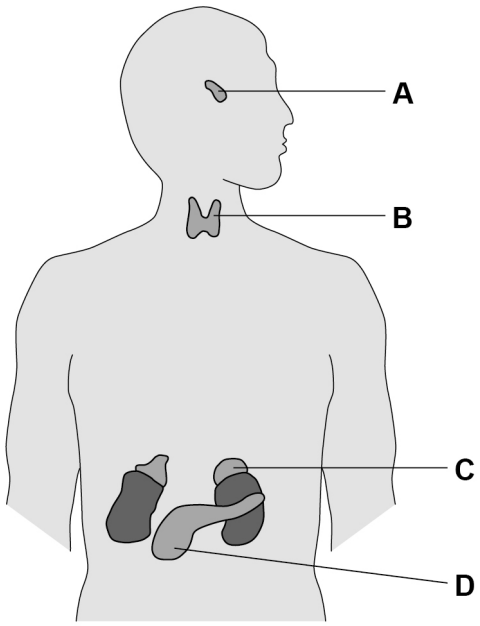
4.5.3.3 Hormones in human reproduction

Question 03

November 2021 | 8464/B/2H | Original Q1

0 1 **Figure 1** shows glands in the human body.

Figure 1



0 1 . 1 Which organ system includes the glands shown in **Figure 1**?

[1 mark]

0 1 . 2 Which gland produces insulin?

[1 mark]

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

0 1 . 3 Which gland produces hormones that stimulate the other glands to produce hormones?

[1 mark]

Tick (✓) **one** box.

A ☐ **B** ☐ **C** ☐ **D** ☐

4.5.3.3 Hormones in human reproduction

Question 03 · continued

0 1 . 4 How do hormones travel from one gland to another gland?

[1 mark]

0 1 . 5 Name **two** glands involved in human reproduction.

Do **not** refer to glands shown on **Figure 1** in your answer.

[2 marks]

1 _____

2 _____

0 1 . 6 Ovulation test kits can help women know when they are most fertile.

Ovulation test kits detect the increase in the hormone that stimulates ovulation.

Which hormone is detected by ovulation test kits?

[1 mark]

Tick (✓) **one** box.

- Follicle stimulating hormone (FSH) ☐
- Luteinising hormone (LH) ☐
- Oestrogen ☐
- Progesterone ☐

4.5.3.3 Hormones in human reproduction

Question 03 · continued

0 1 . 7 A new contraceptive drug for men is being tested.

The drug:

- is given in one injection
- stops sperm being able to fertilise eggs
- is effective for up to 13 years.

Evaluate the use of the new drug compared with existing contraceptive methods.

[6 marks]

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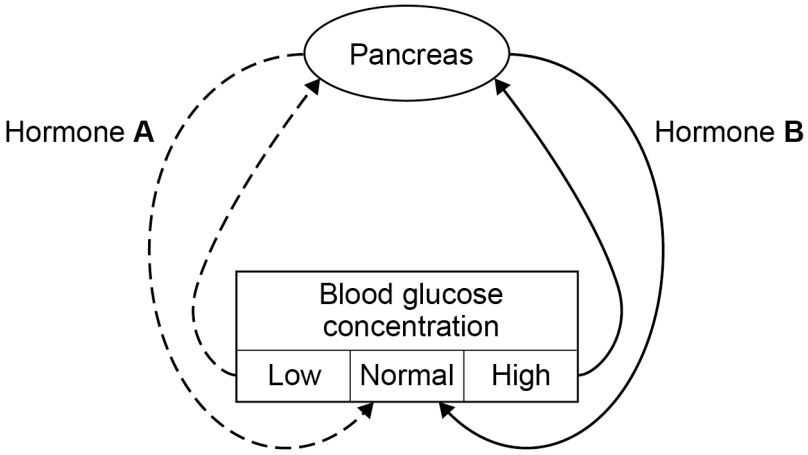
4.5.3.3 Hormones in human reproduction

Question 04

0 5 Blood glucose concentration in the human body needs to be kept within the normal range.

Figure 4 shows that two hormones control blood glucose concentration.

Figure 4



0 5 . 1 Name the type of hormonal control shown in **Figure 4**.

[1 mark]

_____

0 5 . 2 Name hormones **A** and **B** in **Figure 4**.

[1 mark]

A _____

B _____

4.5.3.3 Hormones in human reproduction

Question 04 · continued

0 5 . 3 Explain how the two hormones in **Figure 4** keep the blood glucose concentration within the normal range for 3 hours after a meal.

[6 marks]

Question 5 continues on the next page

4.5.3.3 Hormones in human reproduction

Question 04 · continued

Female reproductive hormones are used to treat infertility in women.

0 5 . 4 Follicle Stimulating Hormone (FSH) and then Luteinising Hormone (LH) can be injected into a woman to help her become pregnant by sexual intercourse.

Explain how injecting FSH and then LH will help a woman to become pregnant.

[3 marks]

0 5 . 5 In some women the injections of FSH and LH are the first steps for In Vitro Fertilisation (IVF).

Describe the remaining steps in IVF.

[4 marks]

4.5.3.3 Hormones in human reproduction

Question 04 · continued

0 5 . 6 There are two different processes of cell division in humans.

Describe **three** differences between cell division to form sperm cells compared with cell division to form liver cells.

[3 marks]

1 _____

_____

_____

2 _____

_____

_____

3 _____

_____

_____

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