AQA GCSE Biology | 8461

SPECIFICATION POINT 4.5.3.5

Contraception

Past-paper questions

Tier	**Higher**
Question groups	**10**
Available paper years	**2007–2024**

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.

4.5.3.5 Contraception

Question 01

January 2007 | BLY1H | Original Q8 | Legacy

8 Hormones are used in contraceptive pills.

(a) Explain how a contraceptive pill works.

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(2 marks)

(b) Read the information about the trialling of the first contraceptive pill.

> The Pill was developed by a team of scientists led by Gregory Pincus. The team needed to carry out large scale trials on humans.
>
> In the summer of 1955, Pincus visited the island of Puerto Rico. Puerto Rico is one of the most densely populated areas in the world. Officials supported birth control as a form of population control. Pincus knew that if he could demonstrate that the poor, uneducated women of Puerto Rico could use the pill correctly then so could women anywhere in the world.
>
> The scientists selected a pill with a high dose of hormones to ensure that no pregnancies would occur while test subjects were taking the drug. The Pill was found to be 100% effective when taken properly. But 17% of the women in the study complained of side effects. Pincus ignored these side effects.
>
> The women in the trial had been told only that they were taking a drug that prevented pregnancy. They had not been told that the Pill was experimental or that there was a chance of dangerous side effects.

4.5.3.5 Contraception

Question 01 · continued

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Evaluate the methods used by Pincus in trialling the contraceptive pill.

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(5 marks)

7

4.5.3.5 Contraception

Question 02

June 2007 | BLY1H | Original Q5 | Legacy

5 A woman's fertility can be controlled by using hormones.

(a) Some contraceptive pills contain oestrogen.

Name the gland which produces oestrogen.

.....

(1 mark)

Women are being encouraged to use longer-term methods of contraception to reduce their chances of having an unwanted pregnancy.

The table summarises four long-term methods of contraception.

Method	What it is	How it works	How long does it last?	Chances of getting pregnant	Side effects
Hormone implant	Rod containing slow-release hormone inserted under the skin	Stops ovaries releasing eggs	3 years	Less than 1 in 1000	Acne in some women
Hormone injection	Injection that slowly releases hormone	Stops ovaries releasing eggs	12 weeks	Less than 4 in 1000	Weight gain in some women
IUD	Small plastic and copper coil placed in womb	Stops fertilised eggs developing in womb	5 – 10 years	Less than 20 in 1000	Heavier or more painful periods in some women
IUS	Plastic device containing slow-release hormone placed in womb	Stops fertilised eggs developing in womb	5 years	Less than 10 in 1000	Irregular periods in some women

(b) Which of the methods in the table is the most reliable?

.....

(1 mark)

4.5.3.5 Contraception

Question 02 · continued

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(c) What is the advantage of using long-term contraception methods instead of taking a contraceptive pill every day?

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(1 mark)

(d) The IUD is the least reliable of the contraceptive methods shown in the table.

Use information from the table to suggest a reason for this.

.....

.....

(1 mark)

(e) Some people have ethical objections to the use of an IUD or an IUS.

Suggest **one** reason why people might object to their use.

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.....

(1 mark)

(f) (i) Explain how the hormone in the implants prevents the ovary releasing eggs.

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(2 marks)

(ii) Hormones can also be used as 'fertility drugs'.

Explain how a fertility drug helps a woman to become pregnant.

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(2 marks)

9

4.5.3.5 Contraception

Question 03

November 2007 | BLY1A | Original Q6 | Legacy

QUESTION SIX

This question is about hormones and contraception.

6A Which line in the table is correct?

	FSH	Oestrogen
1	secreted by the pituitary gland	stimulates FSH production
2	causes eggs to mature	secreted by the pituitary gland
3	stimulates production of oestrogen	secreted by the ovaries
4	used in oral contraceptives	causes eggs to mature

6B Which of the following is true of the hormone LH?

1 The production of LH is stimulated by FSH.

2 It is produced by the ovary.

3 The production of LH is stimulated by a hormone from the ovaries.

4 It is used in contraceptive pills.

6C There are several types of contraceptive pill available for women.
One type of contraceptive pill contains oestrogen.

What is the effect of this type of contraceptive pill?

1 It inhibits the production of FSH.

2 It prevents a fertilised egg from implanting in the womb.

3 It prevents LH production.

4 It reduces the number of eggs released at ovulation.

4.5.3.5 Contraception

6D The contraceptive pill has been linked to cervical cancer.
However, it is believed that most cases of cervical cancer are linked to a virus, HPV.
A new vaccine has been produced to combat HPV.

This vaccine . . .

1 will contain dead or weakened HPV viruses.

2 will contain antibodies against the HPV virus.

3 will destroy the HPV virus.

4 will cause the body to produce antibiotics.

Turn over for the next question

4.5.3.5 Contraception

Question 04

March 2008 | BLY1AP | Original Q8 | Legacy

QUESTION EIGHT

This question is about hormones that control the menstrual cycle.

8A The hormone which stimulates an egg to mature is produced by the . . .

1 blood.

2 ovary.

3 pituitary gland.

4 womb.

8B Some contraceptive pills contain high levels of oestrogen.

How do these contraceptives work?

1 They stop the lining of the womb from becoming thick.

2 They inhibit LH production.

3 They cause the lining of the womb to break down.

4 They inhibit FSH production.

8C Fertility drugs . . .

1 stimulate oestrogen production.

2 stimulate FSH production.

3 stimulate LH production.

4 stimulate the pituitary gland.

8D Some couples need IVF treatment in order to have children.

Which one of the following is an ethical problem that may occur as a result of IVF?

1 The treatment is suitable only for certain types of women.

2 The treatment is very expensive.

3 There is a high failure rate.

4 Unused embryos are destroyed.

4.5.3.5 Contraception

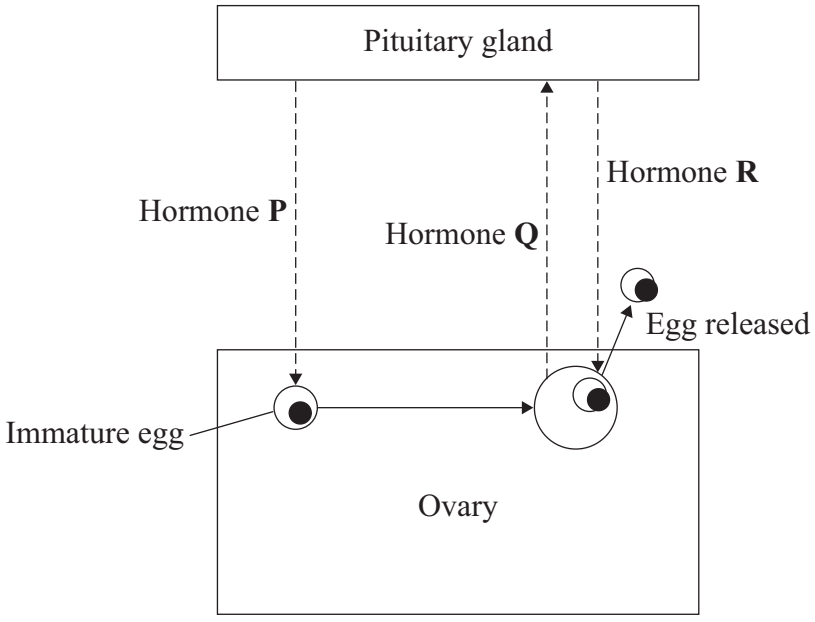
Question 05

June 2008 | BLY1AP | Original Q7 | Legacy

QUESTION SEVEN

Hormones produced in the body control the menstrual cycle.

The diagram shows how some hormones are involved in controlling the menstrual cycle.



7A Which line correctly identifies hormones **P**, **Q**, and **R**?

	P	Q	R
1	FSH	oestrogen	LH
2	LH	oestrogen	FSH
3	FSH	LH	oestrogen
4	oestrogen	FSH	LH

7B Oral contraceptives contain hormones that . . .

1 inhibit FSH production.

2 stimulate LH production.

3 prevent sperm cells from fertilising.

4 stimulate the pituitary gland to release more oestrogen.

4.5.3.5 Contraception

7C Fertility drugs involve the use of . . .

1 FSH to stimulate eggs to mature.

2 LH to stimulate oestrogen production.

3 FSH to stimulate the release of eggs.

4 oestrogen to stimulate LH production.

7D IVF treatment usually involves giving a woman . . .

1 FSH only.

2 oestrogen only.

3 LH and oestrogen.

4 FSH and LH.

Turn over for the next question

4.5.3.5 Contraception

Question 06

June 2009 | BLY1AP | Original Q8 | Legacy

QUESTION EIGHT

Women under the age of about 40 may take oral contraceptives containing oestrogen. However, there are possible side effects after long-term use of oestrogen.

8A The role of oestrogen in the menstrual cycle is to . . .

1 stimulate FSH production and inhibit LH production.

2 inhibit both FSH production and LH production.

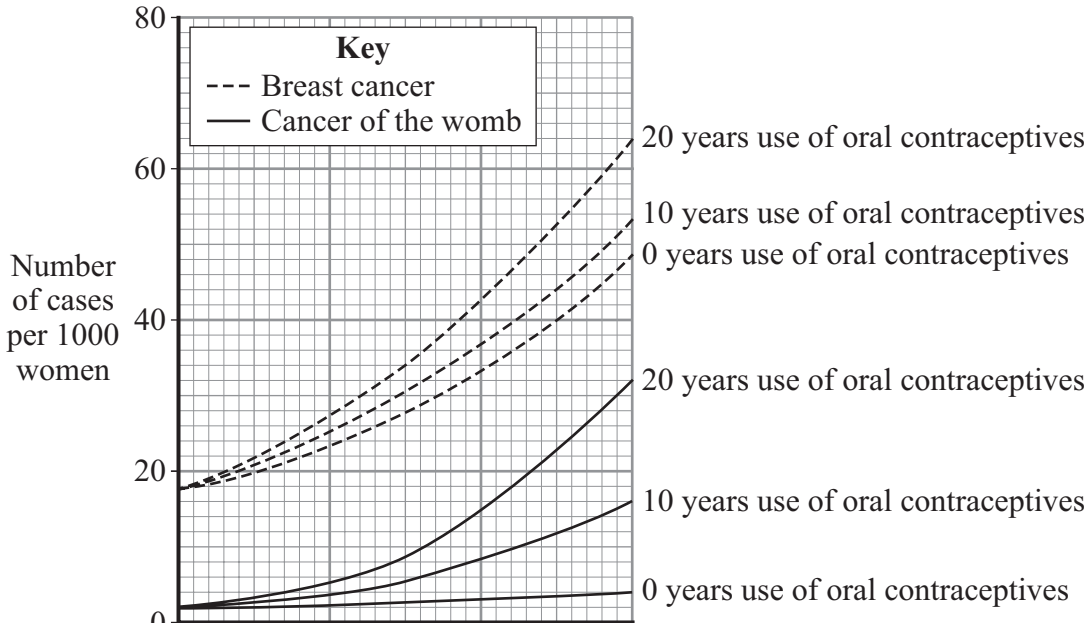
3 inhibit FSH production and stimulate LH production.

4 stimulate both FSH production and LH production.

8B Which row in the table correctly identifies the organs that produce the hormones controlling the menstrual cycle?

	FSH	LH	Oestrogen
1	pituitary gland	ovaries	pituitary gland
2	ovaries	pituitary gland	ovaries
3	pituitary gland	ovaries	ovaries
4	pituitary gland	pituitary gland	ovaries

The graph shows some of the effects of taking oestrogen as an oral contraceptive for different lengths of time between the ages of 16 and 40.



4.5.3.5 Contraception

Question 06 · continued

8C The graph shows that the use of oestrogen as an oral contraceptive for 20 years may . . .

1 cause an eightfold increase in the percentage of women who develop womb cancer by the age of 65.

2 cause a sixteenfold increase in the percentage of women who develop womb cancer by the age of 65.

3 have no effect on the risk of breast cancer until 54 years of age.

4 reduce the number of unwanted pregnancies.

8D Which one of the following statements **cannot** be deduced from the information in the graph?

1 Oestrogen in oral contraceptives causes cancer.

2 The longer a woman takes oral contraceptives, the greater the risk of certain cancers developing.

3 The older a woman is, the greater the risk of breast cancer developing.

4 Women who have never taken oral contraceptives are very unlikely to develop cancer of the womb.

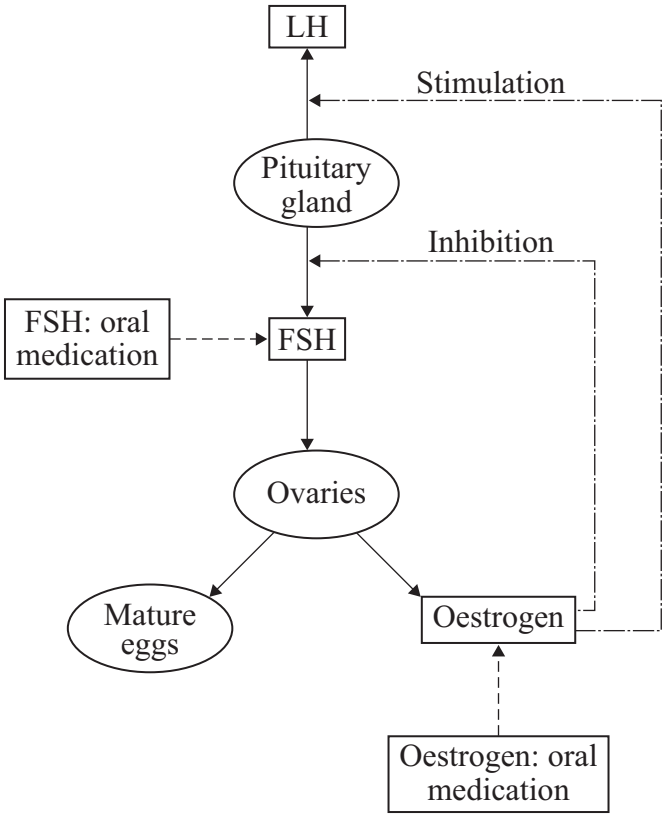
4.5.3.5 Contraception

Question 07

November 2009 | BLY1AP | Original Q9 | Legacy

QUESTION NINE

The diagram shows hormones involved in the control of the menstrual cycle and fertility.



9A A woman takes pills containing oestrogen.

The effect of this will be to . . .

1 encourage the production of more oestrogen by the ovaries.

2 increase the likelihood of pregnancy by encouraging the production of LH.

3 inhibit FSH production and stimulate eggs to mature.

4 inhibit FSH production and so inhibit the maturation of eggs.

4.5.3.5 Contraception

9B A woman takes pills containing FSH.

The effect of this will be to . . .

1 stimulate the maturation of eggs.

2 inhibit the maturation of eggs.

3 reduce oestrogen production.

4 reduce LH production.

9C To assist the release of several eggs, a woman should be treated with medication containing . . .

1 FSH only.

2 FSH and LH.

3 oestrogen only.

4 oestrogen and FSH.

9D Which one of the following is based on scientific rather than ethical considerations in relation to IVF procedures?

1 Unused but fertile eggs should be destroyed.

2 The number of eggs collected should give the best chance of success.

3 The sex of the embryo which is to be implanted should be chosen by parents.

4 Single mothers should be offered IVF treatment.

END OF TEST

4.5.3.5 Contraception

Question 08

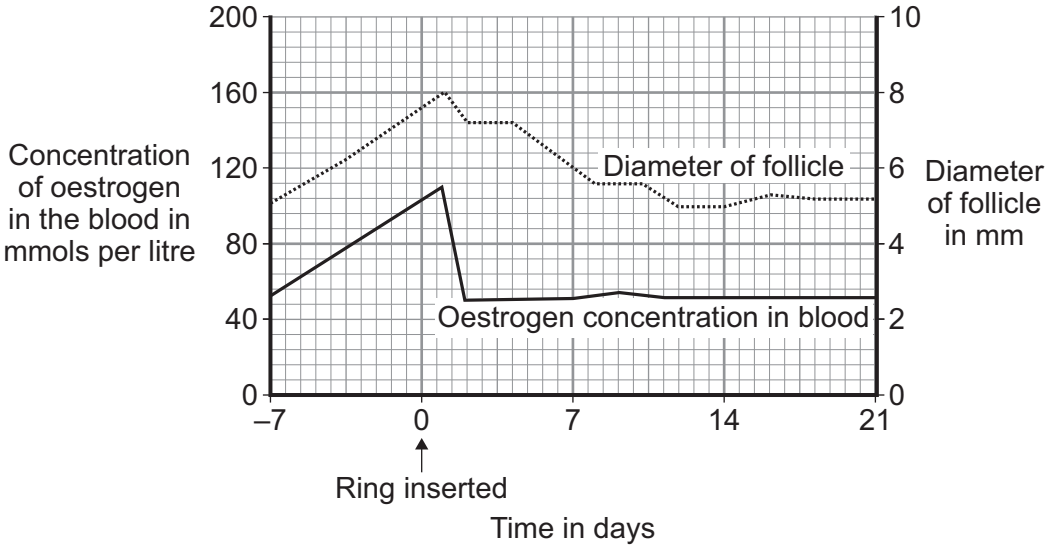
June 2011 | BLY1AP | Original Q9 | Legacy

QUESTION NINE

The ring is a new method of contraception. The ring is inserted into the vagina and releases very low doses of contraceptive hormones for 3 weeks. The woman then removes the ring and inserts a new ring one week later.

A follicle is a spherical structure in the ovary. Inside a follicle, an egg matures. As the egg matures, the follicle enlarges. When the egg is mature, the follicle bursts and releases the egg.

The graph shows the effects of using the ring method.



9A In a normal menstrual cycle, . . .

1 FSH stimulates LH production.

2 FSH stimulates oestrogen production.

3 oestrogen stimulates FSH production.

4 oestrogen inhibits LH production.

9B Using information from the graph and your own knowledge, hormones from the ring most probably . . .

1 stimulate oestrogen production.

2 inhibit LH production.

3 inhibit FSH production.

4 stimulate the production of both FSH and LH.

4.5.3.5 Contraception

Question 08 · continued

9C The ring prevents a woman from becoming pregnant by . . .

1 preventing the sperm from entering the womb.

2 preventing the thickening of the womb lining.

3 preventing eggs from maturing.

4 destroying the follicles.

9D The ring has a lower failure rate than most contraceptive pills.

The most probable reason for this is that . . .

1 hormones are released from the ring at a fairly constant rate.

2 hormones from the ring enter the blood.

3 hormones from the ring affect the pituitary gland.

4 hormones from the ring affect the womb.

END OF TEST

4.5.3.5 Contraception

Question 09

June 2011 | BLY1H | Original Q8 | Legacy

8 Hormones can be used as contraceptives.

8 (a) Explain **one** way in which a hormone can prevent conception (pregnancy).

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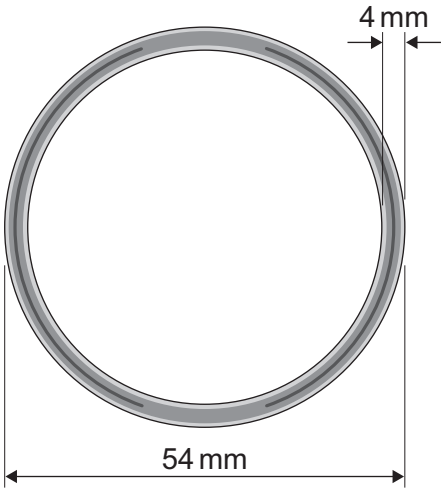
.....

(2 marks)

8 (b) Two methods of giving contraceptive hormones to a woman are the vaginal ring and the hormone implant.

Vaginal ring

The vaginal ring is a flexible ring 54 mm in diameter containing hormones.



The woman puts in and takes out the vaginal ring herself; there is no 'wrong' way to put the ring in.
Each ring is designed for one cycle of use, which is three weeks of continuous ring use, followed by one week without the ring.
About 0.3% of women become pregnant in the first year of ring use.
4% of women stop using the ring because of vaginal discomfort.

4.5.3.5 Contraception

Question 09 · continued

Hormone implant

A health professional puts the hormone implant under the skin of the woman's arm.
The implant releases contraceptive hormones for three years before the implant needs to be replaced.
The hormone implant is 100% effective.
About 2% of women stop using the hormone implant, mainly because of irregular menstrual bleeding.

Evaluate the use of the vaginal ring compared with the hormone implant.

Remember to give a conclusion to your evaluation.

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(4 marks)

6

4.5.3.5 Contraception

Question 10

June 2024 | 8461/2H | Original Q5

0 5 The human body has two coordination systems:

- the nervous system
- the endocrine system.

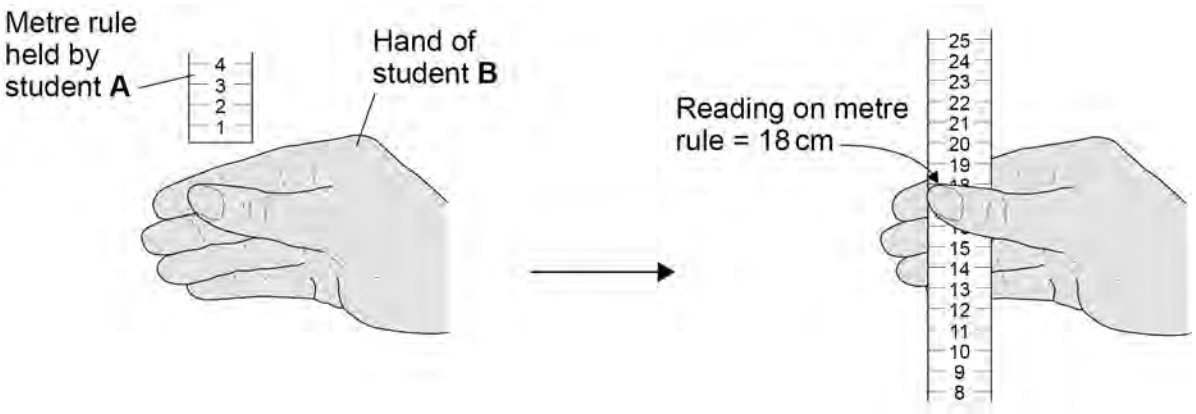
0 5 . 1 Two students investigated human reaction time.

Student **A** held a metre rule above student **B**'s hand.

Student **A** then released the metre rule and student **B** caught the rule as quickly as possible.

Figure 8 shows the method used.

Figure 8



Suggest **two** ways to improve the students' method for measuring human reaction time.

[2 marks]

1 _____

_____

2 _____

_____

4.5.3.5 Contraception

Question 10 · continued

0 5 . 2 Student **B**'s reaction is coordinated by the nervous system.

Give **two** ways that coordination by the endocrine system is different from coordination by the nervous system.

[2 marks]

1 _____

_____

2 _____

_____

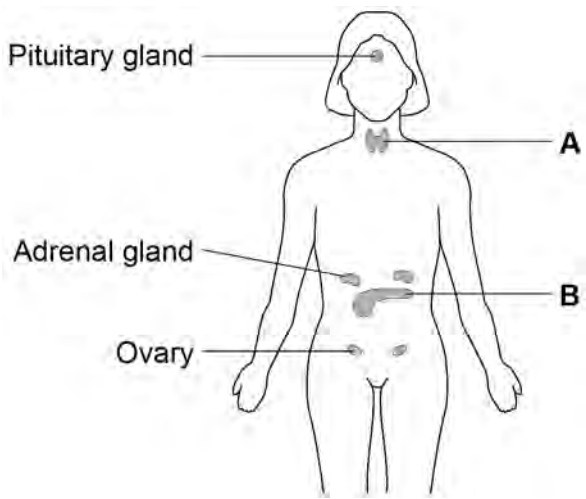
Question 5 continues on the next page

4.5.3.5 Contraception

Question 10 · continued

Figure 9 shows endocrine glands in a female.

Figure 9



0 5 . 3 Name **one** hormone produced by gland **A**.

[1 mark]

_____

0 5 . 4 Name **one** hormone produced by gland **B**.

[1 mark]

_____

0 5 . 5 The adrenal gland produces the hormone adrenaline.

Describe **two** effects of adrenaline on the human body.

[2 marks]

1 _____

_____

2 _____

_____

4.5.3.5 Contraception

Question 10 · continued

0 5 . 6 Hormones can be used for controlling human reproduction.

Explain the use of hormones in:

- contraception
- the treatment of infertility.

[6 marks]

14