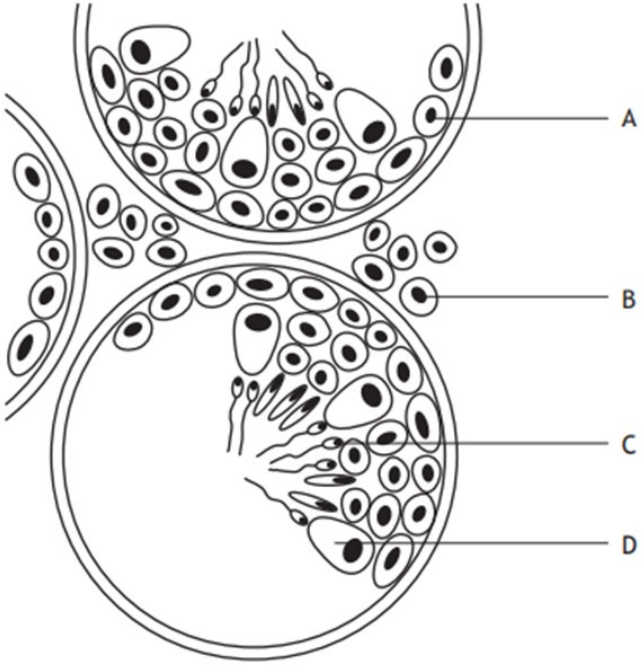
Male Hormones

1 The diagram below shows a section through part of the testes.

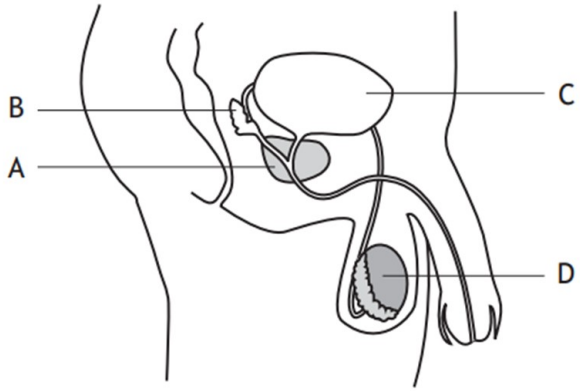


Which cells produce testosterone?

2 A function of the interstitial cells in the testes is to produce

A sperm
B testosterone
C seminal fluid
D follicle stimulating hormone (FSH).

3 Which letter in the diagram indicates the site of testosterone production?



4 The onset of puberty in males is triggered by a secretion from the:

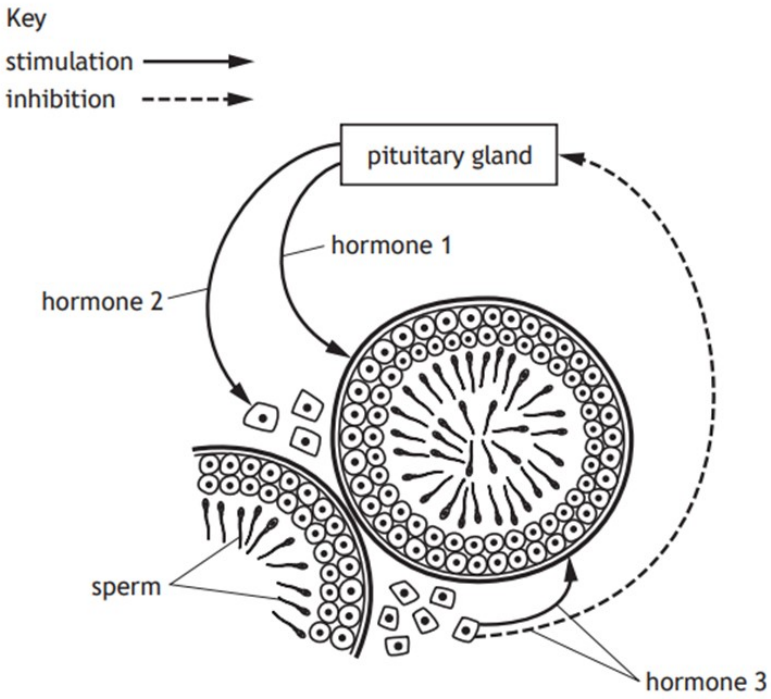
A pituitary gland
B hypothalamus
C interstitial cells
D seminal vesicles.

5 One function of the seminal vesicles is to

A produce testosterone
B allow sperm to mature
C store sperm temporarily
D produce nutrients for sperm.

Male Hormones

6 The diagram represents the hormonal control of sperm production.

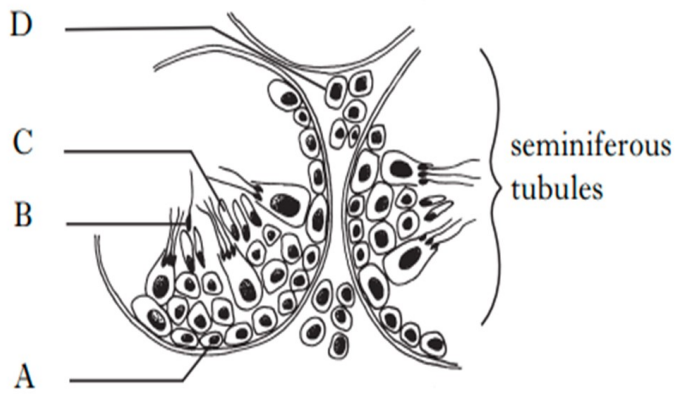


Which row in the table identifies each hormone?

	Hormone 1	Hormone 2	Hormone 3
A	ICSH	FSH	testosterone
B	testosterone	ICSH	FSH
C	FSH	ICSH	testosterone
D	FSH	testosterone	ICSH

7 The diagram below shows a section through seminiferous tubules in a testis.

Which cell produces testosterone?



8 Which of the following is **not** a function of the secretions from the prostate gland and seminal vesicles?

A They add sperm to semen

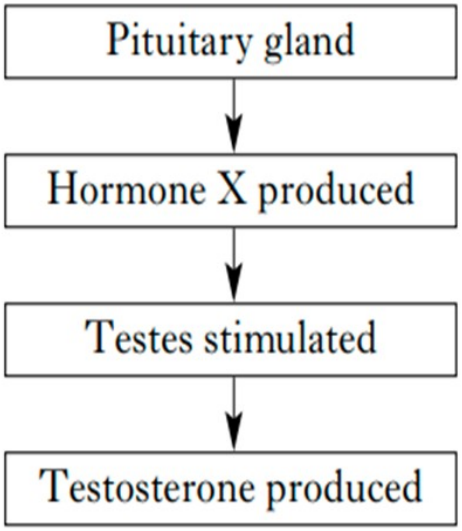
B They add sugar to semen

C They add fluid to semen

D They add enzymes to semen

Male Hormones

9 The diagram below shows the influence of the pituitary gland on testosterone production.

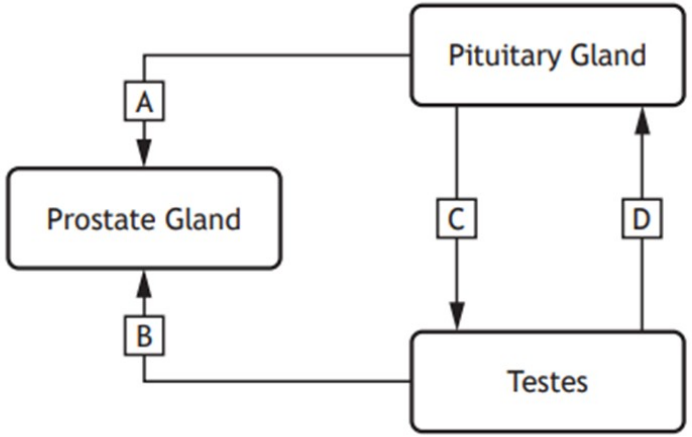


What is Hormone X?

A Interstitial Cell Stimulating Hormone
B Releaser Hormone
C Follicle Stimulating Hormone
D Testosterone

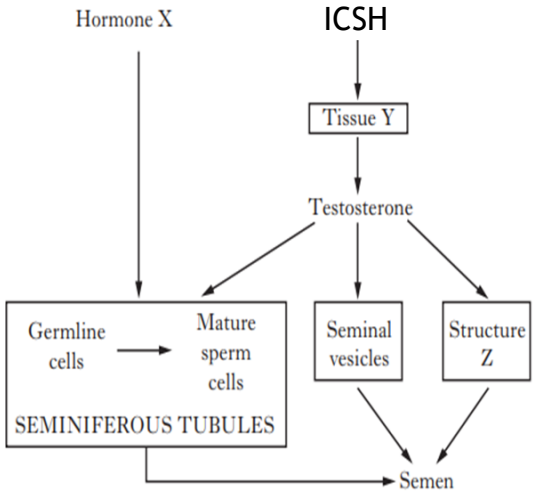
10 The diagram below represents connections between parts of the male reproductive system.

Which arrow in the diagram does **not** represent a male reproductive hormone?



Male Hormones

1 The flowchart summarises the processes involved in the production of semen.



(*a*) Name hormone X and tissue Y.

Hormone X _____

Tissue Y _____ **2**

(*b*) Semen contains substances secreted by structure Z.

(i) Identify structure Z.

_____ **1**

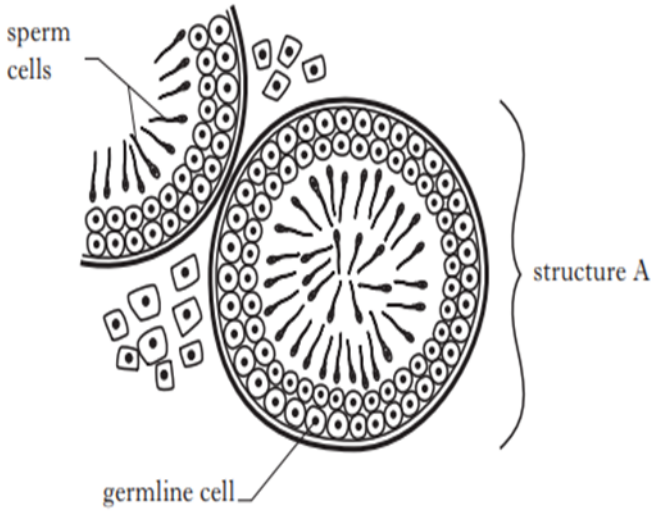
(ii) Describe the role of the secretions from the seminal vesicles and structure Z.

_____

_____ **1**

2 **6.** The diagram below represents sperm production in a cross section through part of a testis.

Marks



(*a*) (i) Name structure A.

_____ **1**

(ii) Describe **two** ways that the pituitary gland stimulates sperm production in structure A.

1 _____

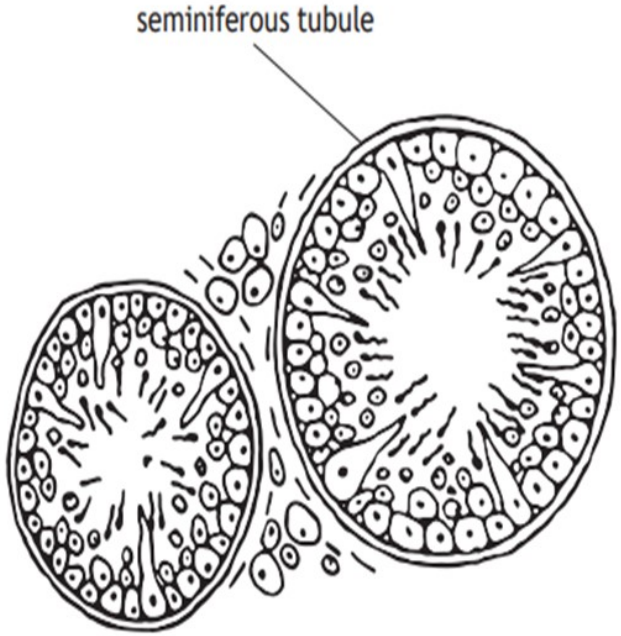
_____

2 _____

_____ **2**

Male Hormones

3 (a) The diagram shows part of a testis.



(i) **Use the letter T** to label a cell in the diagram that produces testosterone. 1

(ii) Describe two functions of testosterone. 2

1 _____

_____

2 _____

_____

(iii) Describe how negative feedback control raises the concentration of testosterone in the blood if it has fallen to a low level. 2

_____

_____

_____

_____

Male Hormones Answers

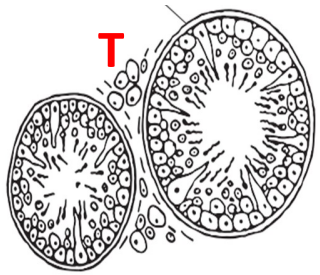
1. B
2. B
3. D
4. B
5. D
6. C
7. D
8. A
9. A
10. A

1a X—FSH Y–Interstitial Cells

B (i) prostate (ii) maintain mobility/viability of sperm Or sugar provides energy for sperm to swim OR enzymes keep semen at the correct viscosity

2a (i) Seminiferous Tubules (ii) FSH produced by pituitary stimulates sperm production in seminiferous tubules

ICSH produced by pituitary stimulates testosterone in the interstitial cells which also stimulates sperm production in seminiferous tubules.

3a 

(ii) stimulates production of seminal fluid in prostate/seminal vesicle

Stimulates seminiferous tubules to make sperm

Inhibits FSH & ICSH production in the pituitary

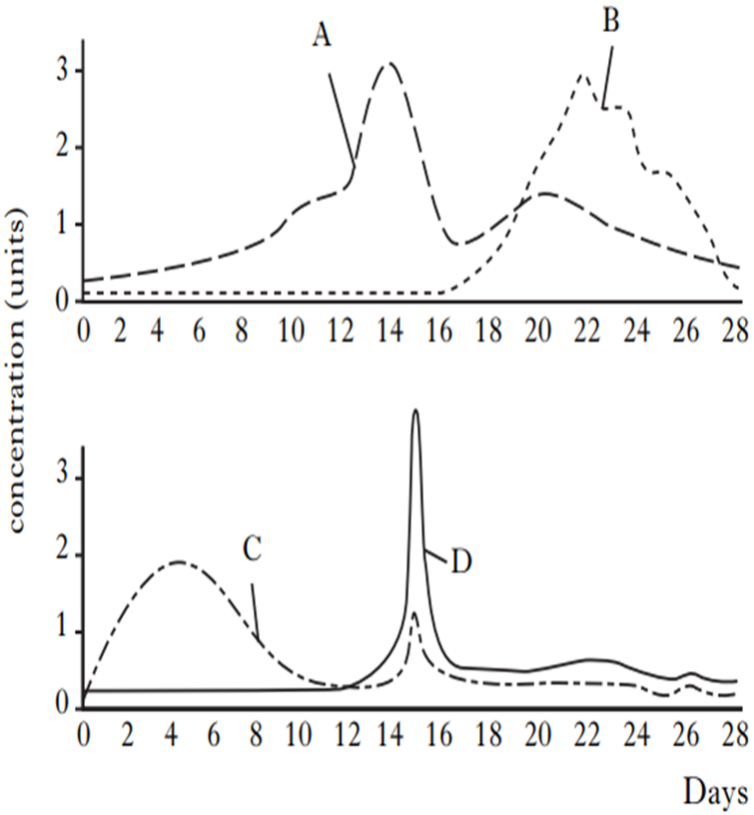
b) Low levels of testerone fail to inhibit pituitary gland (1 mark)

ICS released by pituitary gland (1 mark)

Interstitial cells produce testosterone (1 mark)

Female Hormones

1. The graphs below show the hormones involved in the menstrual cycle.



Which line represents oestrogen?

2 Changes in the ovary during the menstrual cycle are described below.

1 Corpus luteum forms
2 Ovulation occurs
3 Progesterone is produced
4 Corpus luteum degenerates
5 Follicle develops

The sequence in which these changes occur following menstruation is

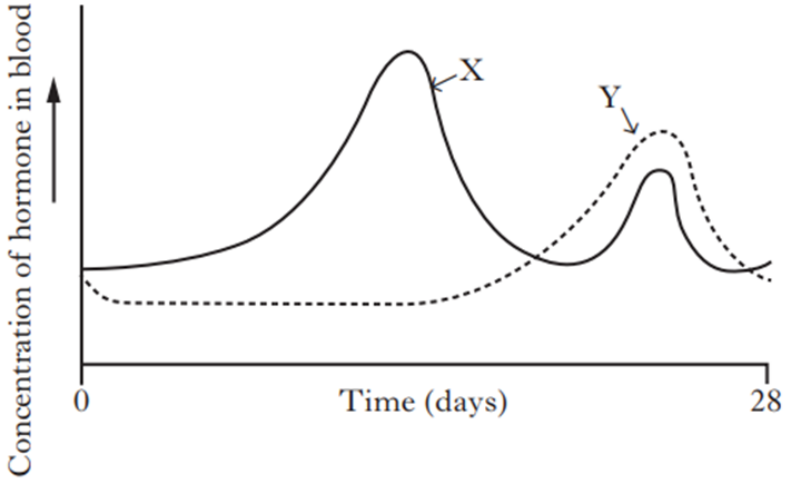
A 2, 3, 1, 5, 4
B 2, 1, 3, 4, 5
C 5, 3, 2, 1, 4
D 5, 2, 1, 3, 4.

3. From which structure in the female reproductive system does a corpus luteum develop?

A Endometrium
B Graafian follicle
C Fertilised ovum
D Unfertilised ovum

Female Hormones

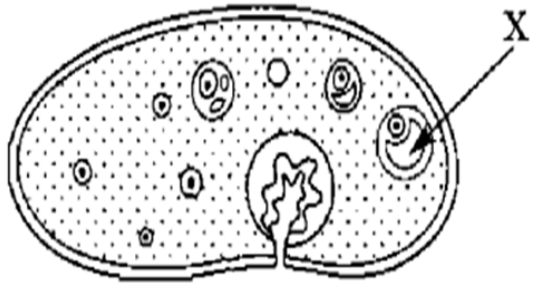
4 The graph below shows changes in the concentration of hormones X and Y in the blood during the menstrual cycle.



Which of the following correctly identifies hormones X and Y?

	Hormone X	*Hormone Y*
A	LH	Oestrogen
B	Oestrogen	FSH
C	Oestrogen	Progesterone
D	Progesterone	Oestrogen

5 The diagram below shows a section through an ovary which contains developing eggs.



The structure labelled X is

A the endometrium

B a Graafian follicle

C the amnion

D a corpus luteum.

6 How many days after ovulation is menstruation most likely to occur?

A 5

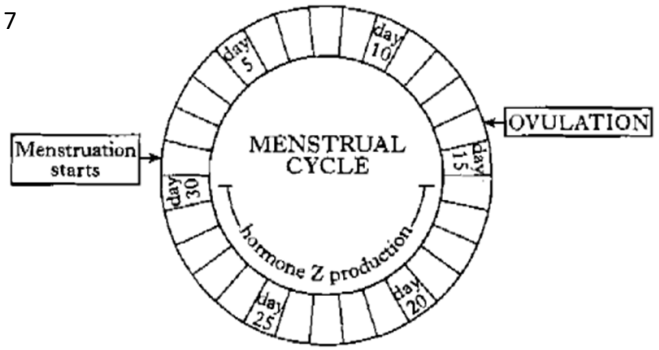
B 10

C 15

D 20

Female Hormones

7



Which line of the table identifies correctly hormone Z and the structure which produces this hormone?

	Hormone Z	*produced by*
A	LH	ovary
B	oestrogen	corpus luteum
C	progesterone	Graafian follicle
D	progesterone	corpus luteum

8 After ovulation, the follicle develops into the

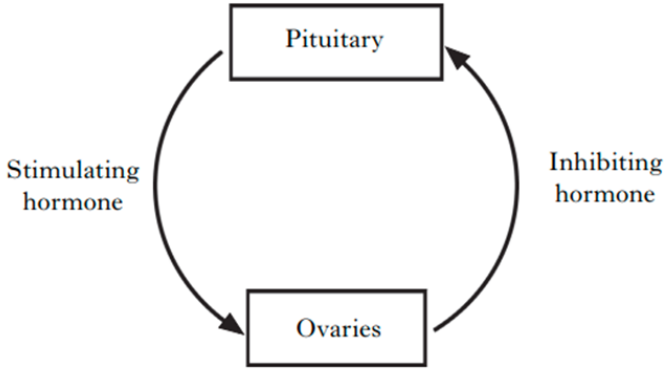
A corpus luteum

B fallopian tube

C endometrium

D zygote.

9 The diagram below represents part of the mechanism which controls ovulation.



The hormones indicated above are

	Stimulating hormone	*Inhibiting hormone*
A	FSH	oestrogen
B	progesterone	FSH
C	oestrogen	LH
D	LH	testosterone

10 As an ovum develops within the ovary, it is surrounded by

A a Graafian follicle

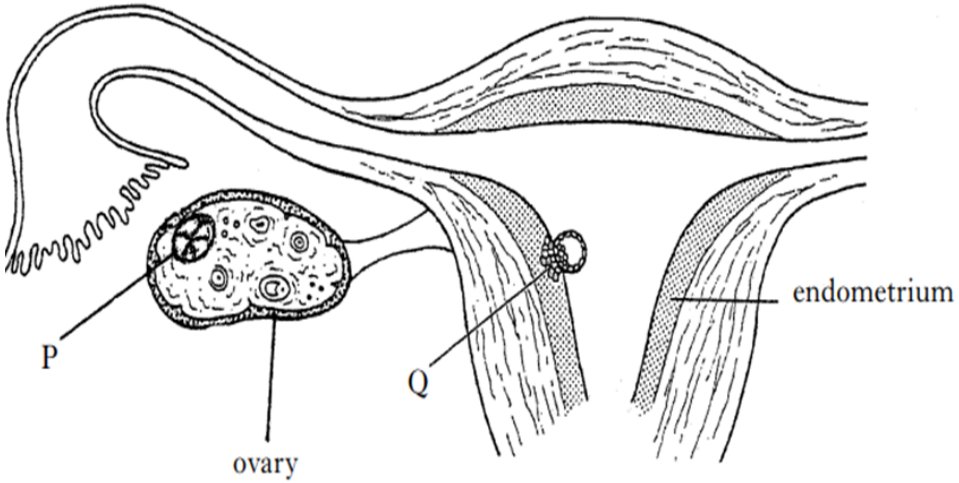
B seminal fluid

C a corpus luteum

D the endometrium.

Female Hormones

1 The diagram shows part of the reproductive system of a woman in early pregnancy.



(*a*) Place an **X** on the diagram to show where fertilisation occurred.

(*b*) Structure P produces progesterone at this stage in pregnancy.

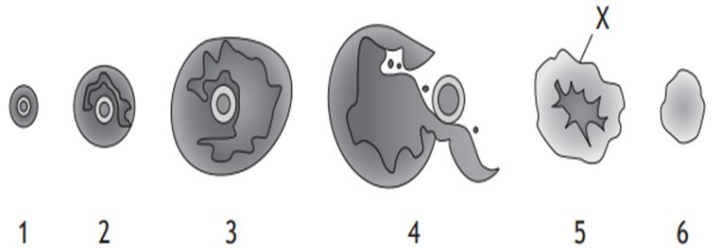
(i) Name structure P.

_____

(ii) Where in the body are FSH and LH produced?

_____

2 The diagram represents six developmental stages that may be seen within an ovary during a menstrual cycle.



(a) (i) State which of the numbered stages represents ovulation. 1

_____

(ii) Name structure X. 1

_____

(b) At the end of the menstrual cycle progesterone concentration decreases.

(i) Describe the process that leads to this decrease. 2

_____

_____

_____

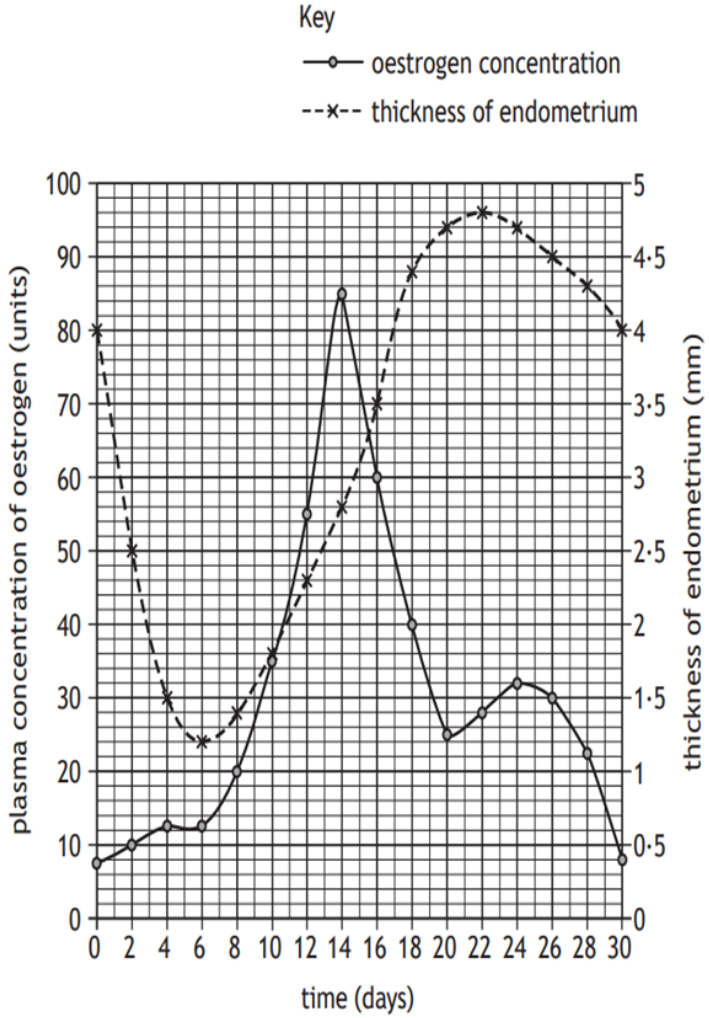
(ii) Describe one effect of the decrease in progesterone concentration. 1

_____

_____

Female Hormones

3



a) Explain why the thickness of the endometrium decreases after day 22 of this cycle. **1**

b) Name the part of the brain that produces the releaser hormone, which triggers FSH and LH secretion at puberty. **1**

c) Describe **one** role of FSH in females. **1**

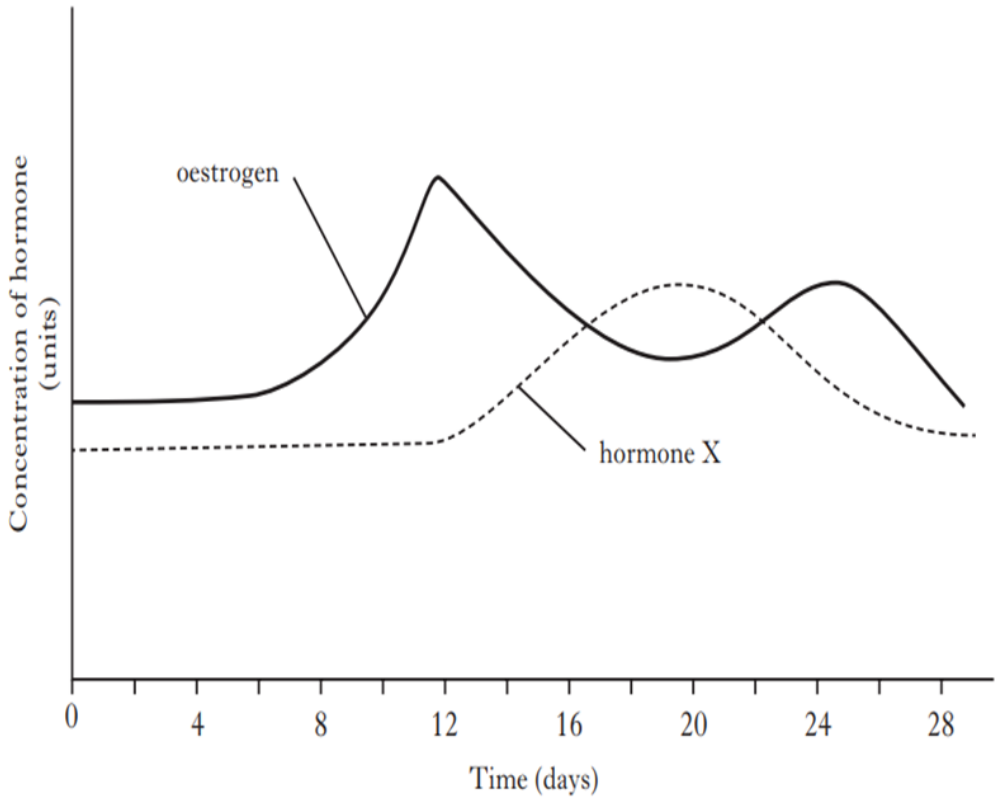
(d) A surge in LH triggers ovulation.

Name the phase of the menstrual cycle that takes place after ovulation. **1**

(e) Describe how a decrease in LH concentration leads to menstruation. **2**

Female Hormones

4. The graph below shows the concentration of two ovarian hormones in a woman's blood during her menstrual cycle.



(*a*) Name hormone X.

_____ 1

(*b*) What effect does oestrogen have on the following structures?

(i) The uterus between days 4 and 12 in the cycle.

_____

_____ 1

(ii) The pituitary gland on day 12 of the cycle.

_____

_____ 1

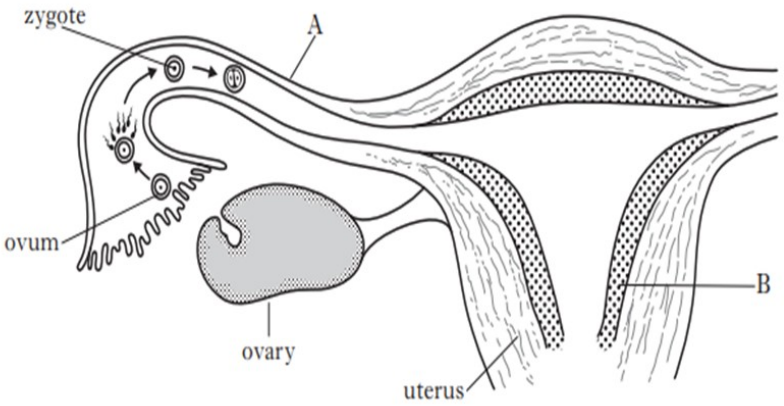
(*c*) Describe one way in which the graph would be different if the woman became pregnant during this cycle.

_____

_____ 1

Female Hormones

5. The diagram below shows the fertilisation of an ovum and its subsequent early development.



(a) Name structures A and B.

A _____

B _____ 2

(b) The ovum is released from a follicle in the ovary which then becomes the corpus luteum. These structures are affected by pituitary hormones.

Complete the table below to describe the effect of these hormones on the structures.

Structure	*Pituitary hormone*	*Effect on structure*
Follicle	FSH	
Corpus luteum	LH	

2

(c) Explain what prevents the further development of follicles when an embryo is developing in the uterus.

_____

_____

_____

_____ 2

6. A number of hormonal changes occur in a woman's body during the menstrual cycle.

(a) (i) State one function of each of the following hormones in the menstrual cycle. 2

FSH _____

_____

Oestrogen _____

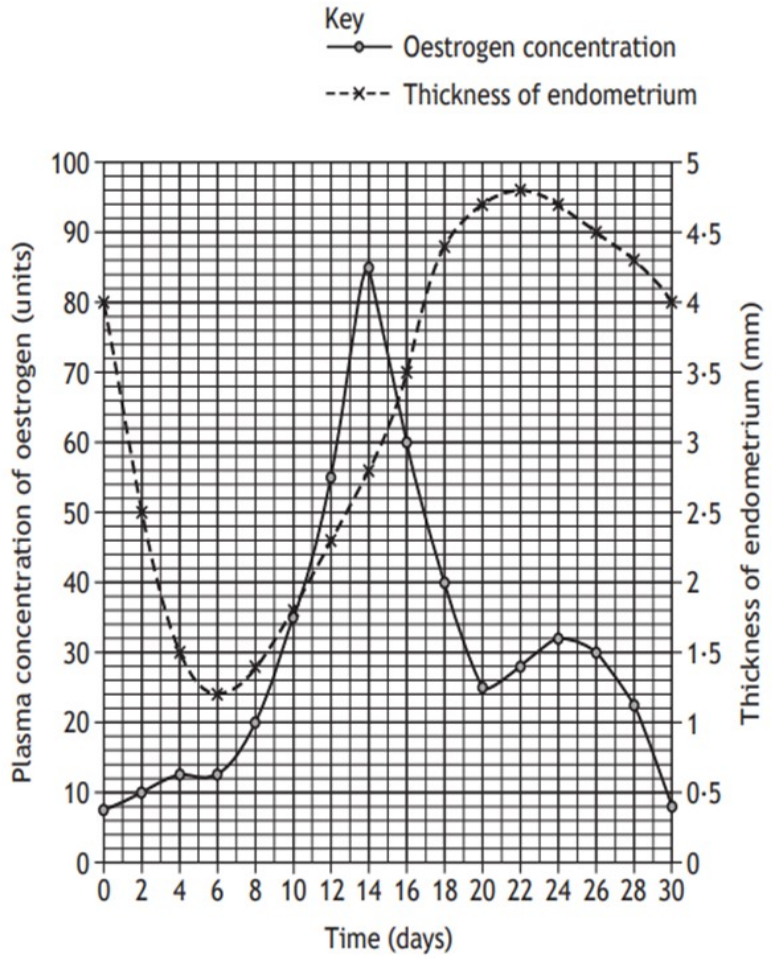
_____

(ii) Name the structure within an ovary that produces progesterone. 1

_____

Female Hormones

7)



(a) Ovulation occurs on day 15 of this cycle.

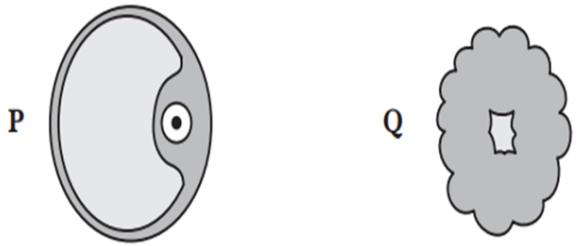
(i) Describe the role of oestrogen in triggering this event. 1

(ii) Oestrogen stimulates thickening of the endometrium.

Describe evidence from the graph which indicates that another factor also stimulates thickening of the endometrium. 1

b) Suggest **one** way in which the graph for the next menstrual cycle would differ from this one if the woman became pregnant during that cycle. 1

8) The diagrams below show sections through two structures found in the ovary at different times in the menstrual cycle.



(i) Name structures P and Q.

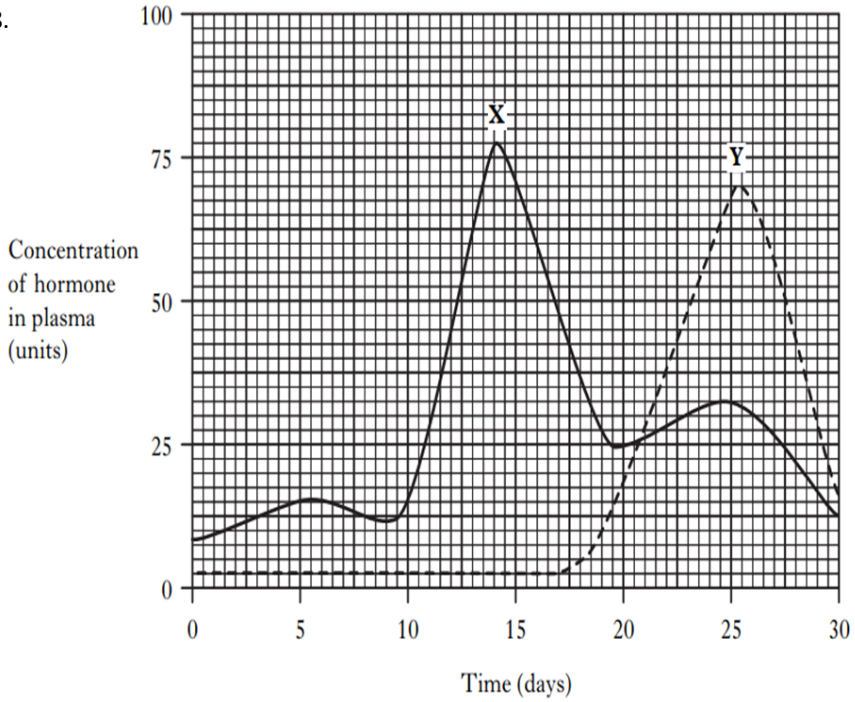
P _____ Q _____ 1

(ii) What key event in the menstrual cycle occurs before P develops into Q?

_____ 1

Female Hormones

8.



a) Name hormones X and Y.

X _____

Y _____ 1

b) On which day did ovulation occur? Give a reason for your answer.

Day _____ 1

Reason _____

_____ 1

c) During her next cycle, the woman became pregnant.

Describe any differences which would occur in the concentrations of FSH and hormone Y after day 25.

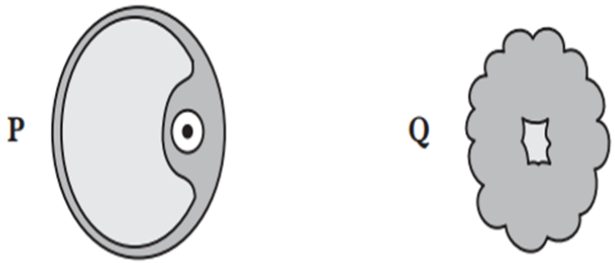
FSH _____

_____ 1

Hormone Y _____

_____ 1

(*d*) The diagrams below show sections through two structures found in the ovary at different times in the menstrual cycle.



(i) Name structures P and Q.

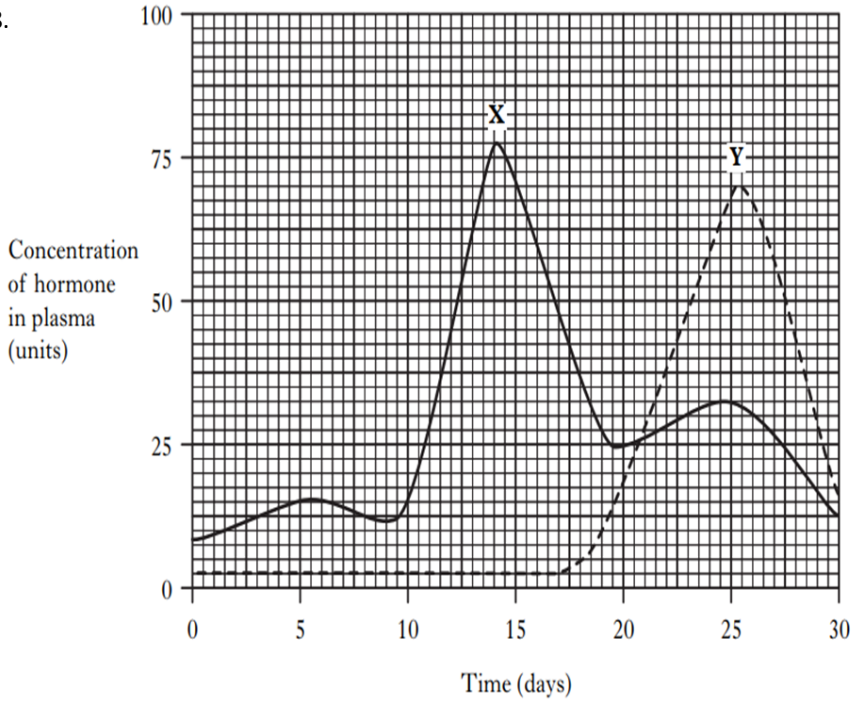
P _____ Q _____ 1

(ii) What key event in the menstrual cycle occurs before P develops into Q?

_____ 1

Female Hormones

8.



a) Name hormones X and Y.

X _____

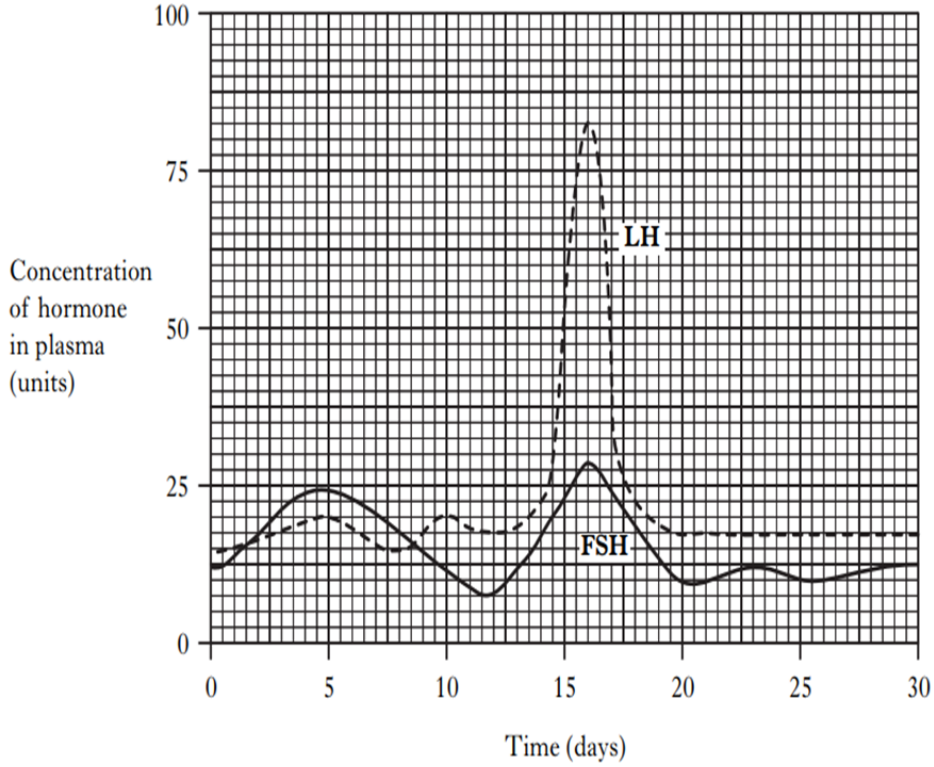
Y _____ 1

b) On which day did ovulation occur? Give a reason for your answer.

Day _____ 1

Reason _____

_____ 1



c) During her next cycle, the woman became pregnant.

Describe any differences which would occur in the concentrations of FSH and hormone Y after day 25.

FSH _____

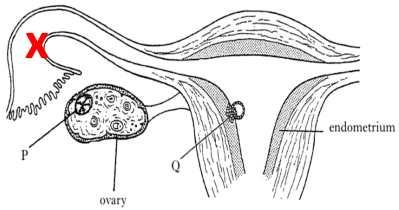
_____ 1

Hormone Y _____

_____ 1

Female Hormones Answers

1. A
2. D
3. B
4. C
5. B
6. C
7. D
8. A
9. A
10. A

1. a 

B (i) corpus luteum (ii) pituitary gland

2a (i) 4 (ii) corpus luteum

b) (i) LH decreases (1 mark) (ii) triggers menstruation

Corpus luteum breaks down (1 mark)

3a) The corpus luteum starts to break down so produces less progesterone b) releaser hormone

c) stimulates development of follicle OR stimulates production of oestrogen d) luteal phase

e) causes breakdown of corpus luteum (1 mark) Decrease in progesterone levels (1 mark)

4a) progesterone

b) (i) stimulates thickening/development of endometrium lining

(ii) stimulates production of LH

(iii) progesterone levels remain high

5a) A—fallopian tube/oviduct B– endometrium lining (NOT UTERUS)

b) FSH—stimulates development of follicle OR production of oestrogen

LH— develops corpus luteum OR production of progesterone

(NOT causes ovulation)

c) High levels of oestrogen/progesterone (1 mark)

Cause negative feedback/inhibit pituitary gland (1 mark)

Preventing production of FSH/LH from pituitary (1 mark)

6 a) (i) FSH stimulates development of follicle OR stimulates production of oestrogen

Oestrogen (any 1 from the list)

1. stimulates development/thickening of endometrium or
2. prepares endometrium for implantation
3. thins cervical mucus
4. causes the LH surge
5. High levels of oestrogen cause negative feedback/inhibition pituitary from producin

(ii) corpus luteum

Female Hormones Answers

7 a (i) oestrogen causes LH surge

(ii) endometrium thickness continues to increase after oestrogen concentration decreases

b) endometrium thickness would remain high OR oestrogen would not decrease

8a (i) X = follicle Y = corpus luteum

(ii) ovulation

9a) X = oestrogen Y = progesterone

b) Day 16/17

When LH is at its peak

C) FSH levels would stay at a low level/decrease further

Hormone y (progesterone) would stay high/increases further