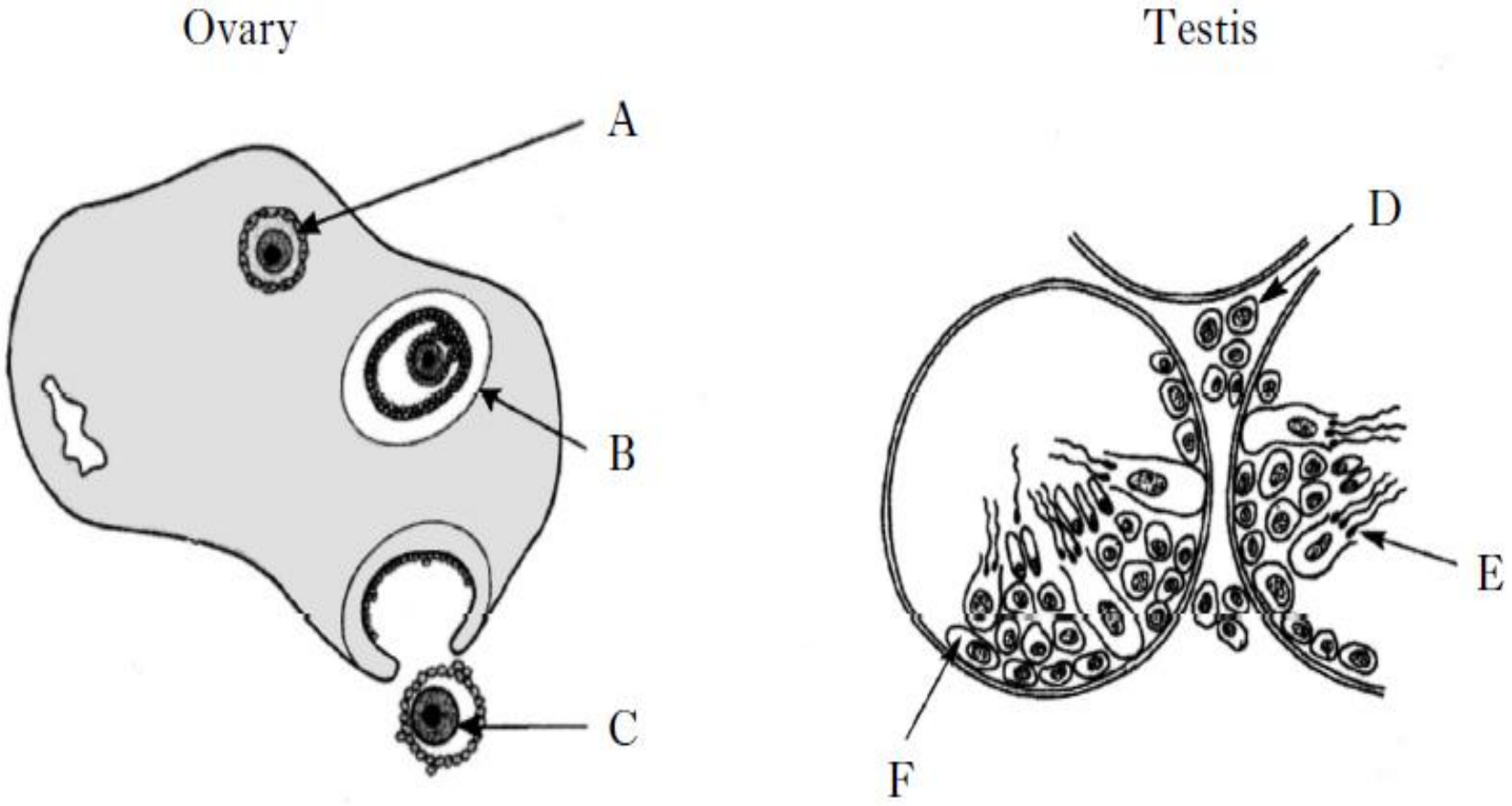
Unit 2 – Homework 1

Reproductive Organs and Hormonal Control

1. The diagrams represent gamete production in an ovary and part of a testis.



1. (i) Which letter represents a mature ovum?

_____ 1

(ii) Identify **one** labelled part of each organ which is affected by FSH.

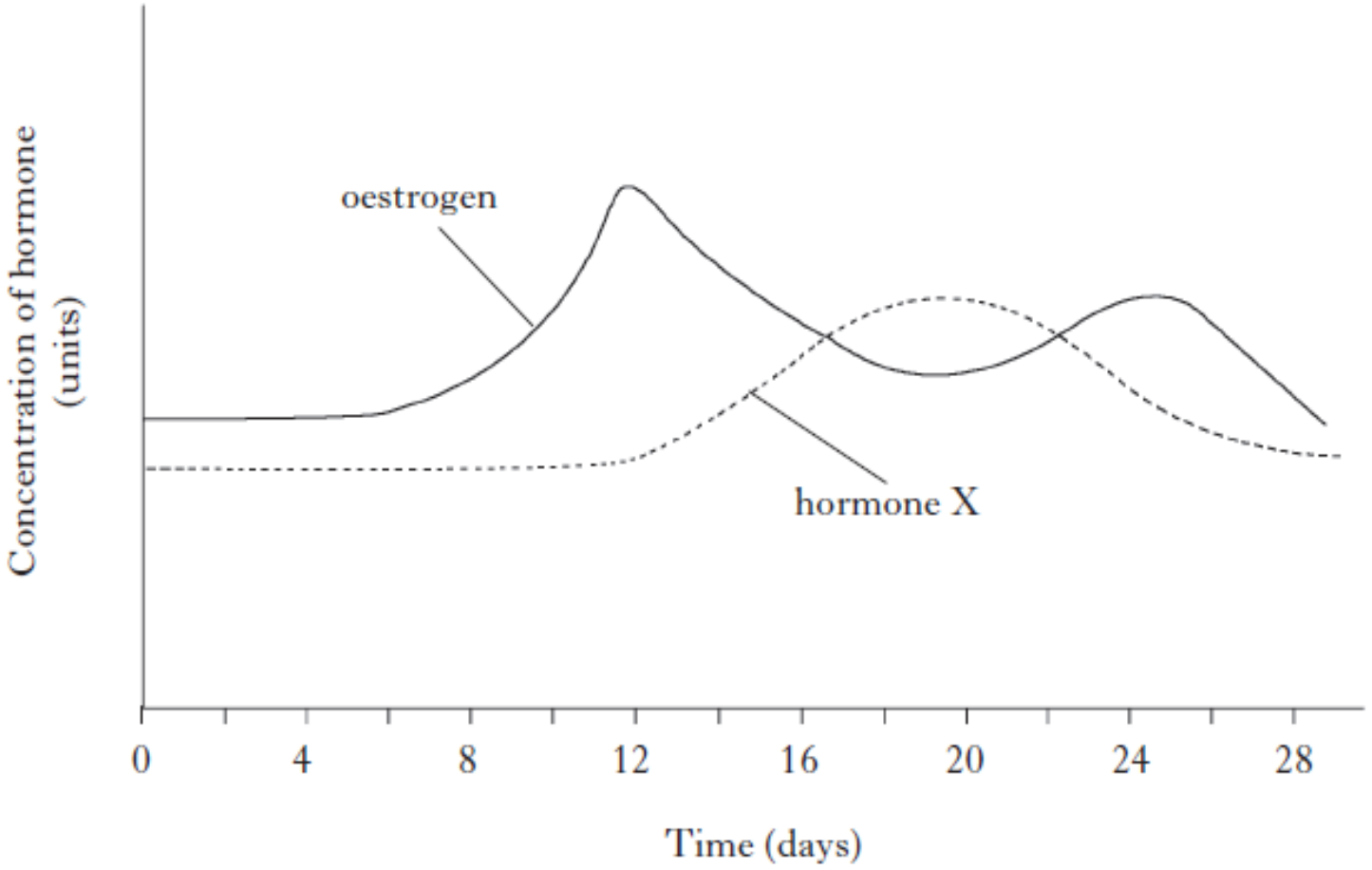
Letter	*Name*

2

(iii) Describe the effect of testosterone on the testes of an adult.

_____ 1

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



2. (*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.

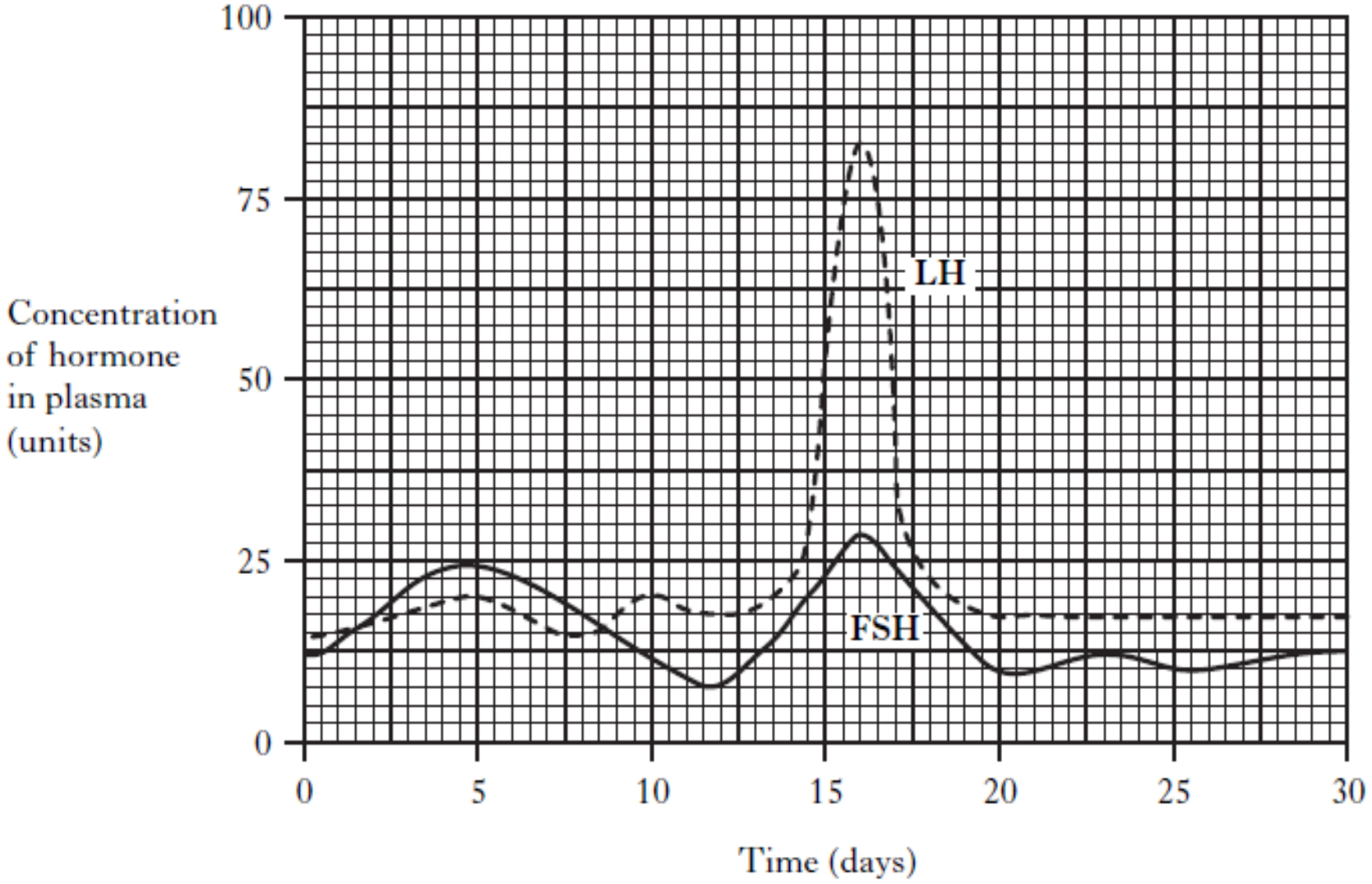
_____

_____ **1**

3. **Graph 1** shows the concentrations of FSH and LH.

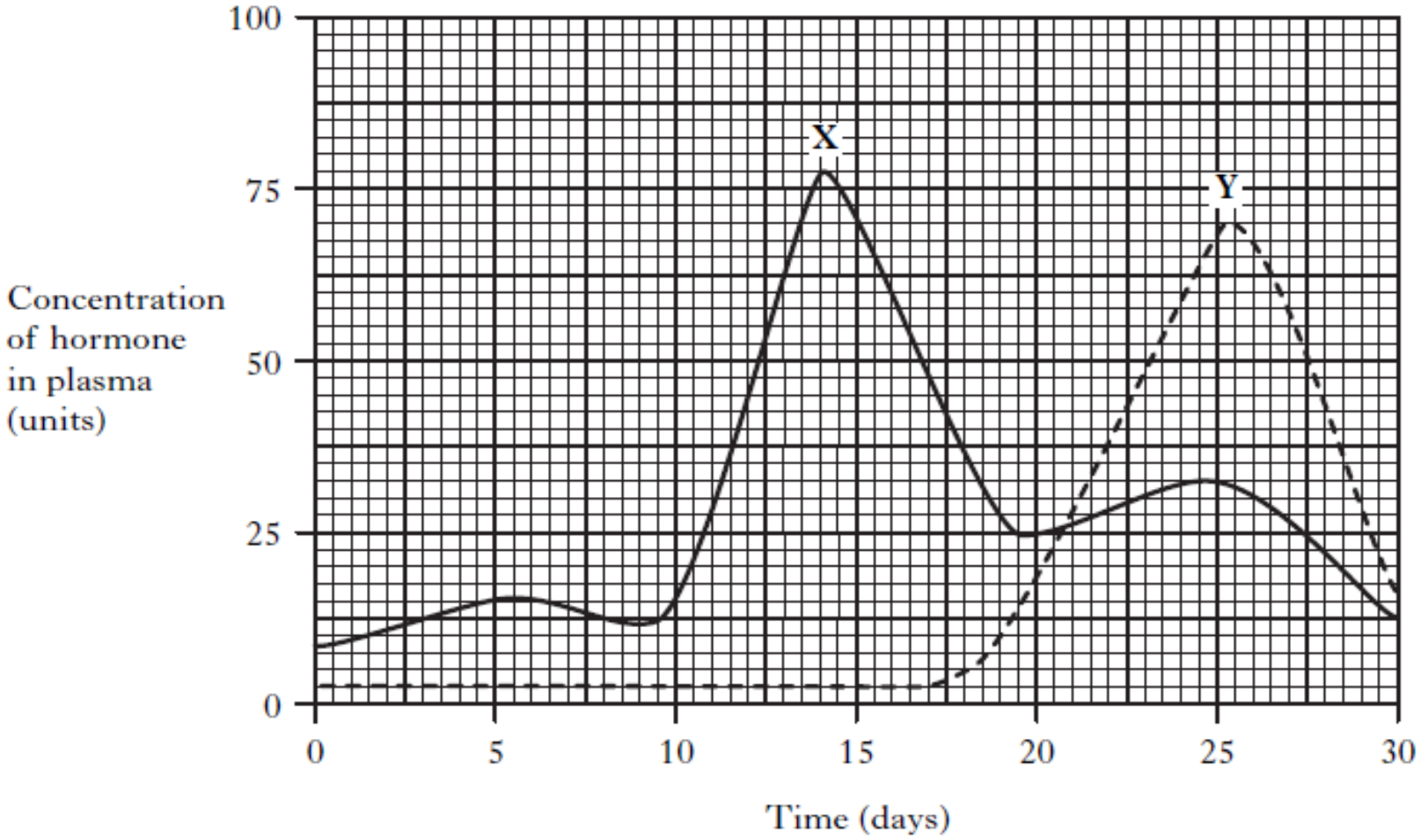
Graph 2 shows the concentration of two other hormones, X and Y.

Graph 1



3.

Graph 2


100
75
50
25
0
X
Y
Concentration of hormone in plasma (units)
0
5
10
15
20
25
30
Time (days)

3. (*a*) Where in the body are FSH and LH produced?

_____ 1

(*b*) Name hormones X and Y.

X _____

Y _____ 1

(*c*) What is the maximum concentration of hormone Y?

_____ units 1

(*d*) On which day did ovulation occur? Give a reason for your answer.

Day _____ 1

Reason _____

_____ 1

3. (*e*) 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.

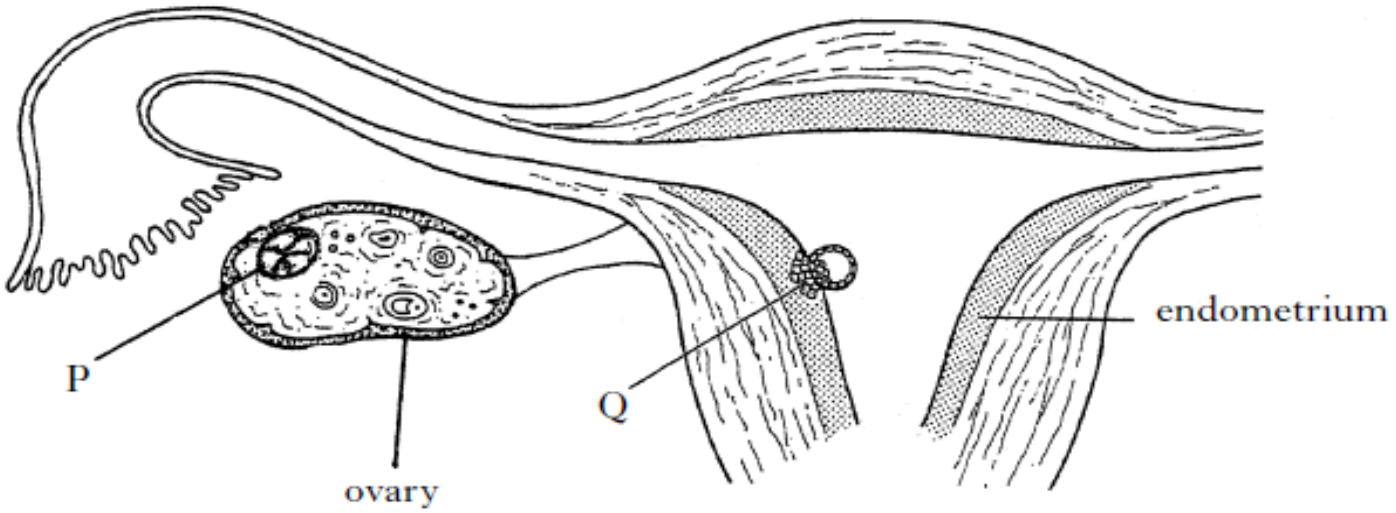
FSH _____

_____ 1

Hormone Y _____

_____ 1

4. 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. **1**

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

(i) Name structure P.

_____ **1**

(ii) State **one** function of progesterone during early pregnancy.

_____

1

4. (*c*) Structure Q will develop into the placenta.

Name the processes involved in the transfer of oxygen, glucose and antibodies across the placenta.

Oxygen _____

Glucose _____

Antibodies _____ **2**

(*d*) In the early stages of pregnancy the cells of the embryo are starting to differentiate.

Describe what happens during differentiation.

_____

_____ **1**

4. (*e*) Name a stage of embryo development that comes between fertilisation and differentiation.

_____ **1**

(*f*) A woman gives birth to monozygotic twins.

State whether monozygotic twins are identical or non-identical and give a reason for your answer.

Monozygotic twins _____

Reason _____

_____

_____ **1**

1 One function of the seminal vesicles is to

A produce testosterone

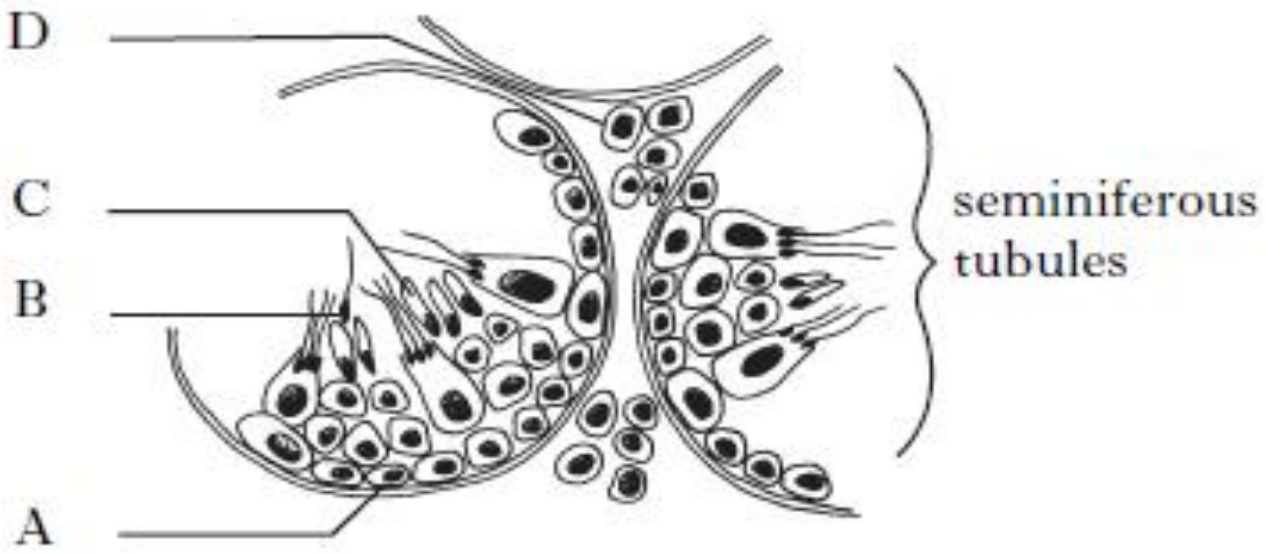
B allow sperm to mature

C store sperm temporarily

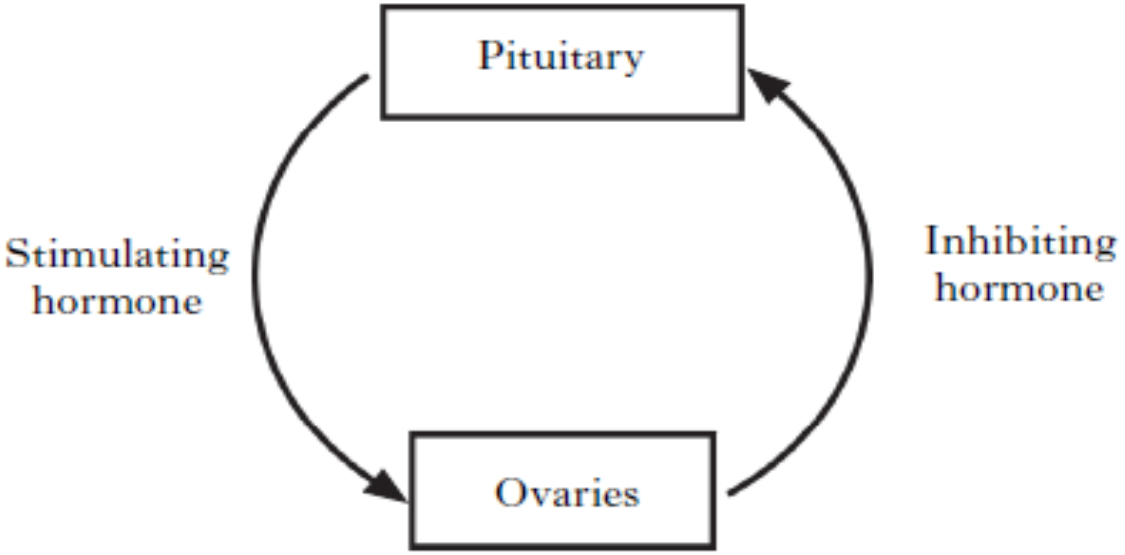
D produce nutrients for sperm.

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

Which cell produces testosterone?



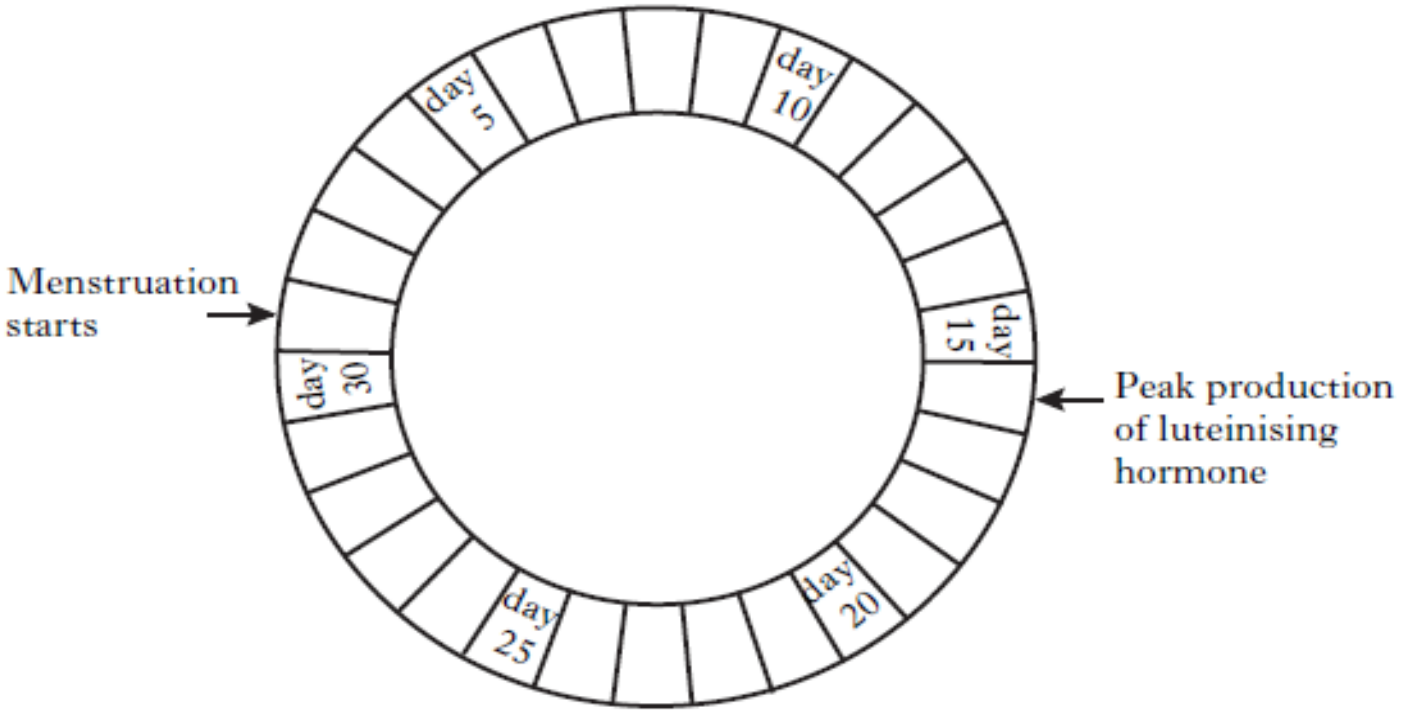
3. The diagram below represents part of the mechanism which controls ovulation.



The hormones indicated above are

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

4. On which day in the following menstrual cycle could fertilisation occur?



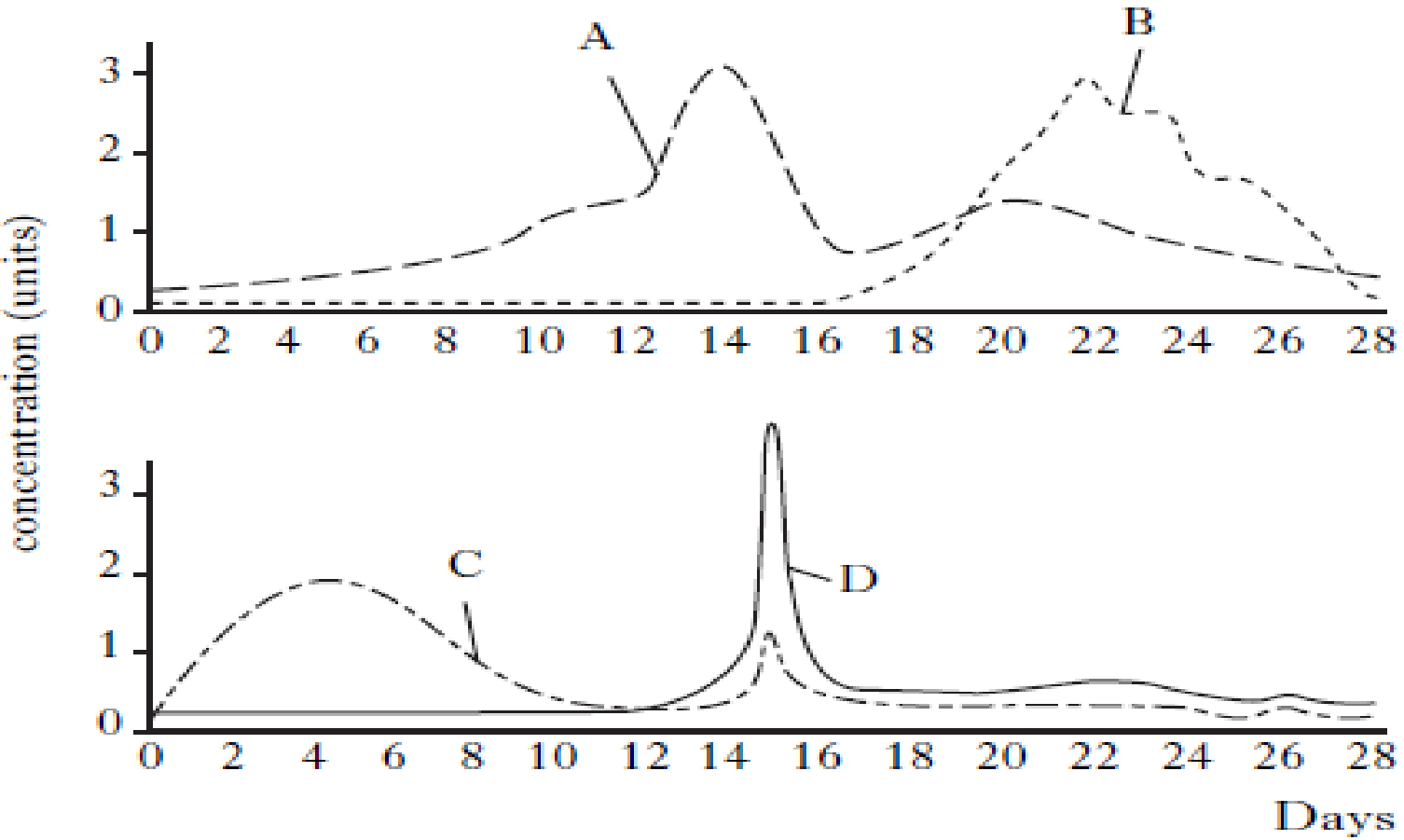
A Day 30

B Day 17

C Day 14

D Day 2

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



Which line represents oestrogen?

6. A function of the interstitial cells in the testes is to produce

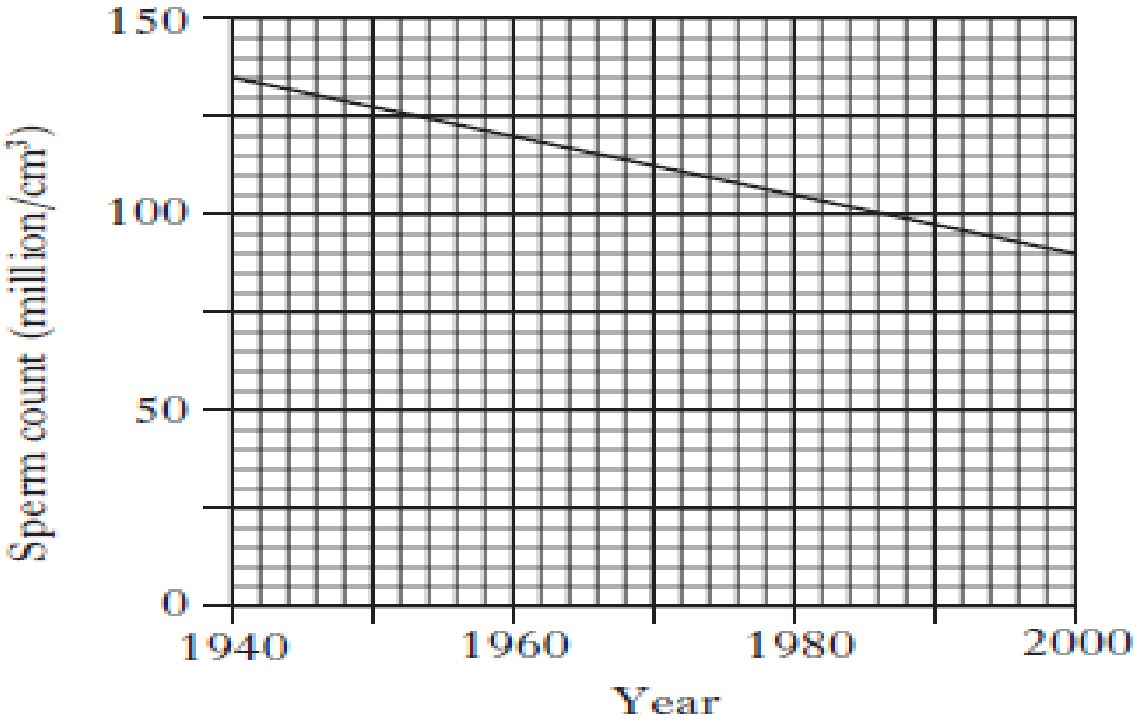
A sperm

B testosterone

C seminal fluid

D follicle stimulating hormone (FSH).

7. The sperm counts of a sample of men taken between 1940 and 2000 are shown in the graph below.



What is the average reduction in sperm count per year?

A 0·67 million/cm^3/year

B 0·75 million/cm^3/year

C 0·92 million/cm^3/year

D 45 million/cm^3/year