The Endocrine System (F)

1. When a woman reaches the age of about 50, eggs are released less often from her ovaries. To try and correct this, her body increases the production of one hormone.

Which hormone is this?

A Adrenaline
B FSH
C Progesterone
D Testosterone

Your answer ☐ **[1]**

2. Plants growing in swamps have special roots that grow **upwards** through waterlogged soil to get oxygen from air.

What type of response do these roots show?

A Negative germination
B Negative gravitropism
C Positive germination
D Positive gravitropism

Your answer ☐ **[1]**

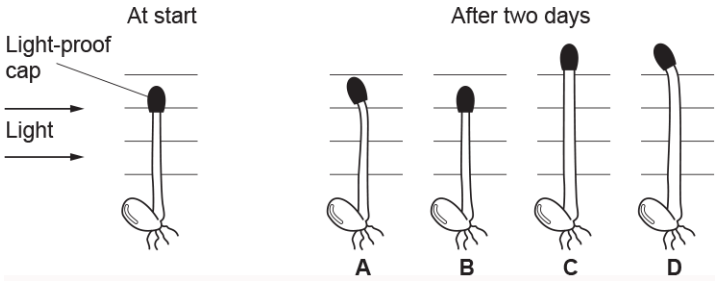
3. Plant roots respond to gravity by growing downwards.

What is this response called?

A Negative gravitropism
B Negative phototropism
C Positive gravitropism
D Positive phototropism

Your answer ☐ **[1]**

4. Seedlings were grown with a light-proof cap over the tip. The seedlings had light from one direction only.



Which diagram shows the correct growth of the seedling after two days in these conditions?

Your answer ☐ **[1]**

5 (a). Plant hormones are involved in controlling some processes in plants.

Which processes in plants are controlled by plant hormones?

Tick (✓) **three** boxes.

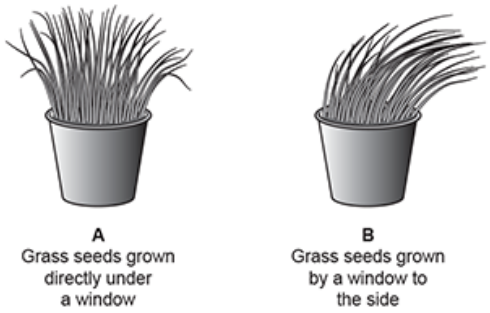
- Flower opening ☐
- Germination ☐
- Photosynthesis ☐
- Pollination ☐
- Respiration ☐
- Shedding of leaves ☐

[3]

(b). A child sets up an experiment to grow grass seeds in a plastic cup.

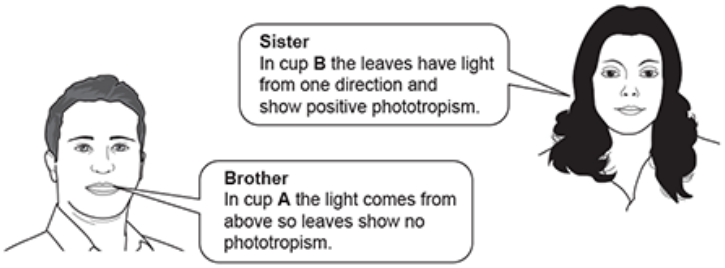
The grass seeds in cup **A** are grown directly under a window.
The grass seeds in cup **B** are grown by a window to the side.

Look at the results.



The child's older brother and sister try to explain what has caused the results.

They make different conclusions.



i. Explain why the sister has given the better conclusion.

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[2]

ii. Name the hormone that causes phototropism.

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[1]

(c).

i. Different hormones control the human menstrual cycle.

Complete the sentences to describe how the menstrual cycle is controlled.

Use words from the list.

Each word can be used once, more than once, or not at all.

fetus **follicle** **FSH** **oestrogen** **progesterone**

The hormone released by the pituitary gland is called ..... .

This hormone acts on the ovary and causes the growth of a ..... .

The hormone that maintains the lining of the uterus is called ..... .

[3]

ii. The table shows the concentration of oestrogen in the blood during the first 7 days of the menstrual cycle.

Time in days	Oestrogen (mg/100 cm^3 of blood)
1	20
2	20.5
3	25
4	27.5
5	30
6	32.5
7	34

Put a (ring) around the days below which show a steady increase in the concentration of oestrogen.

Days 1–4 **Days 2–5** **Days 3–6** **Days 4–7**

[1]

(d). The lining of the uterus is shed during menstruation.

New cells are needed to replace the lining of the uterus.

Describe the processes that occur to make these new cells.

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[3]

6 (a).

Finish these sentences to explain what is happening in the body of a female during the menstrual cycle.

The pituitary gland in the _____ releases the hormone FSH.

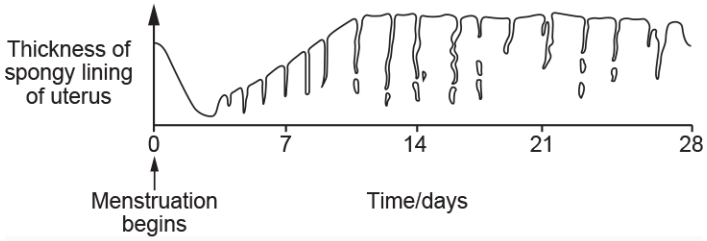
FSH causes an _____ releases the hormone FSH.

FSH also causes the follicle to release the hormone _____ .

After ovulation, the empty follicle releases another hormone called _____ .

[4]

(b). The diagram shows how the lining of the uterus changes during the menstrual cycle.



a. Mark on the diagram with the letter **E** the most likely point when ovulation occurs. **[1]**

b. If a fertilised egg is **not** present, a change happens to the uterus lining after 28 days.

How does the uterus lining change?

_____ **[1]**

(c). The table shows the effectiveness of some different forms of contraception.

Form of contraception	**Percentage pregnancies per year (%)**
Hormonal	
Injection	<1

Patch	<1
Pill	2
Non-hormonal	
Diaphragm	6
Male condom	2
Male sterilisation	<1

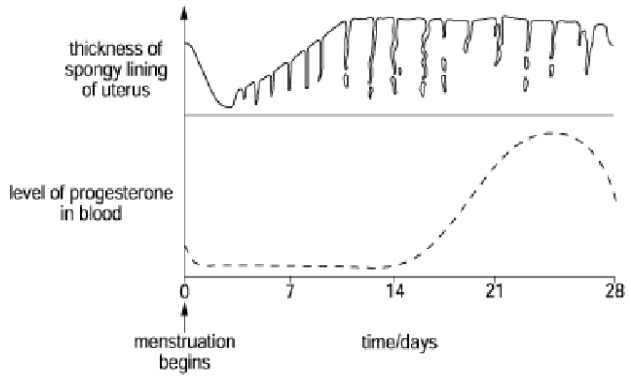
Suggest explanations for the differences in the effectiveness of the methods of contraception and explain why the pill is a popular method.

[6]

(d). How are hormones transported around the body?

[1]

7 (a). The graph shows how the level of progesterone changes during the menstrual cycle.



i. Draw another line on the lower graph to show how the level of oestrogen changes during the menstrual cycle.

[2]

ii. Describe how oestrogen and FSH interact during the menstrual cycle.

_____

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_____ **[2]**

(b). * Endometriosis is a condition where the cells that normally line the uterus (womb) can move to other parts of the body.

During the menstrual cycle the cells that have moved can react in the normal way to the hormones controlling menstruation.

This can cause a number of problems including fatigue and pain.

Using the information from the graph as well as your own knowledge explain what happens to the cells that have moved and how doctors could treat the condition using sex hormones.

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_____ **[6]**

8. Which hormone is used to increase metabolic rate?

A. insulin
B. luteinising hormone
C. testosterone
D. thyroxine

Your answer ☐

[1]

9. Which hormone is used to ripen fruit?

A. adrenaline
B. auxin
C. ethene
D. gibberellin

Your answer ☐

[1]

10. The image shows plant shoots growing towards sunlight.

What is this an example of?

A. negative gravitropism
B. negative phototropism
C. positive gravitropism
D. positive phototropism

Your answer ☐

[1]

11. Which of these hormones is involved in the control of the menstrual cycle?

A. insulin
B. progesterone
C. testosterone
D. auxin

Your answer ☐

[1]

END OF QUESTION PAPER