

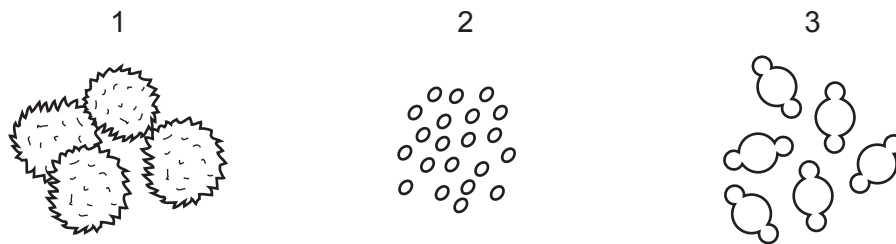
1 When a baby is born, these processes occur.

- 1 breaking of the amniotic sac
- 2 contraction of muscles in the uterus wall
- 3 cutting of the umbilical cord

In which order do these processes usually occur?

- A** 2 → 1 → 3 **B** 2 → 3 → 1 **C** 3 → 1 → 2 **D** 3 → 2 → 1

2 The diagrams show pollen grains from three different species of plant as they appear under the microscope. The diagrams are all to the same scale.

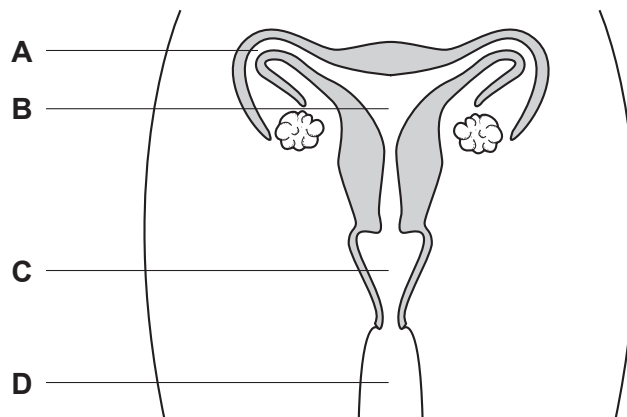


Which pollen grains are involved in insect-pollination?

- A** 1 and 2 **B** 1 only **C** 2 and 3 **D** 3 only

3 The diagram shows the human female reproductive system.

If a woman uses a femidom as a contraceptive, where would it be placed?



4 What are the characteristics of asexual reproduction?

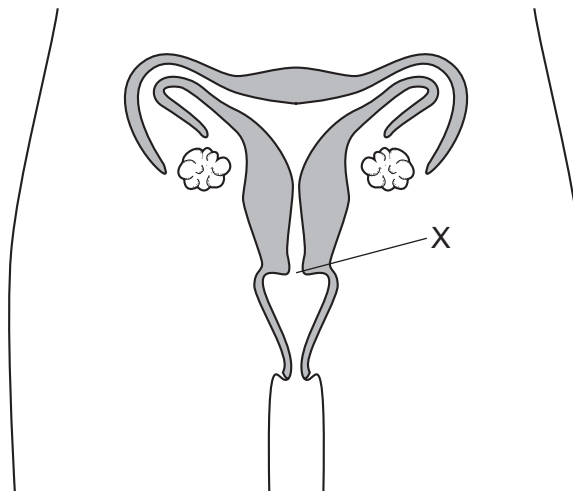
| | fusion of gamete nuclei | genetic variety in the offspring |
|----------|-------------------------|----------------------------------|
| A | ✓ | ✓ |
| B | ✓ | x |
| C | x | ✓ |
| D | x | x |

5 The table shows the conditions provided for four sets of seeds.

Which of the seeds germinate?

| | oxygen | water | carbon dioxide |
|----------|--------|-------|----------------|
| A | ✓ | ✓ | ✓ |
| B | ✓ | x | x |
| C | x | ✓ | ✓ |
| D | x | x | x |

6 The diagram shows a human female's reproductive organs.



What is the name of structure X?

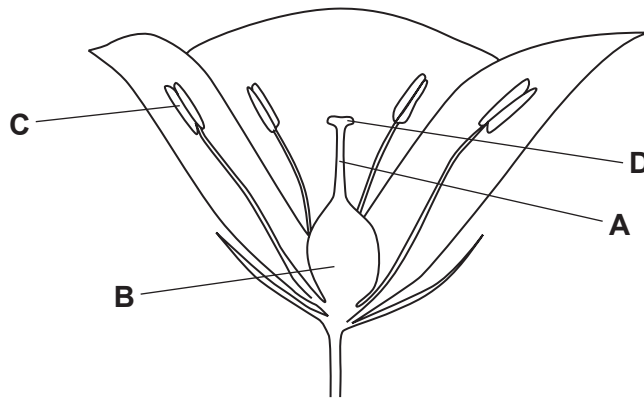
- A** cervix
- B** ovary
- C** oviduct
- D** ovule

7 What must always be available to allow seeds to germinate?

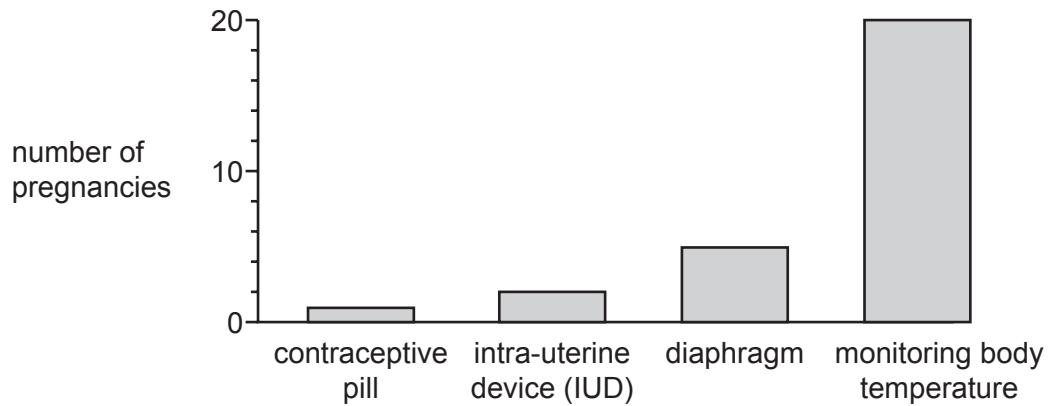
- A carbon dioxide
- B light
- C mineral salts
- D water

8 The diagram shows a flower.

In which structure do seeds develop?



9 The graph shows the number of pregnancies in four groups of 100 women. Each group used a different method of contraception.



The method of contraception which is the **least** effective is

- A barrier.
- B chemical.
- C natural.
- D surgical.

10 The following statements are about some hormones in the human body.

V causes changes in the ovaries during the menstrual cycle

W promotes the development of stronger muscles

X causes the voice to deepen at puberty

Y produced by the pancreas

Which statements are correct for testosterone?

A V and W

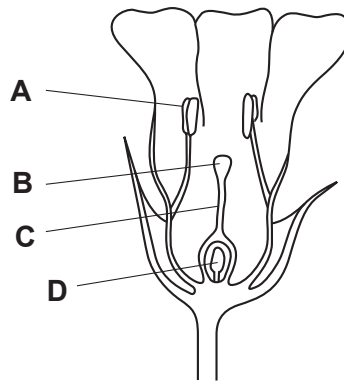
B V and Y

C W and X

D X and Y

11 The diagram shows half a flower.

On which structure would pollen be deposited in pollination?



12 In which region does diffusion of materials take place between mother and fetus?

A amniotic sac

B ovary

C placenta

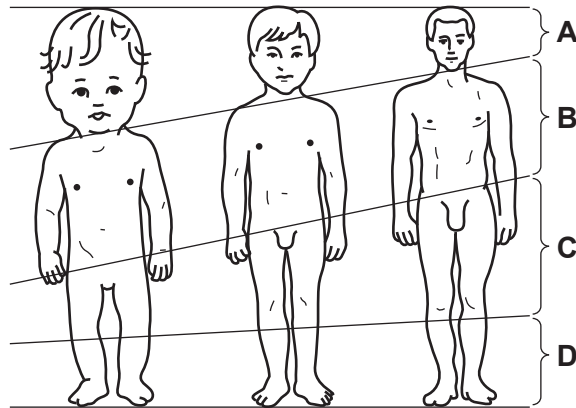
D umbilical cord

13 During childbirth, what must happen to the cervix and the uterus wall?

| | cervix | uterus wall |
|----------|-----------|-----------------------|
| A | contracts | contracts and relaxes |
| B | contracts | relaxes |
| C | dilates | contracts and relaxes |
| D | dilates | relaxes |

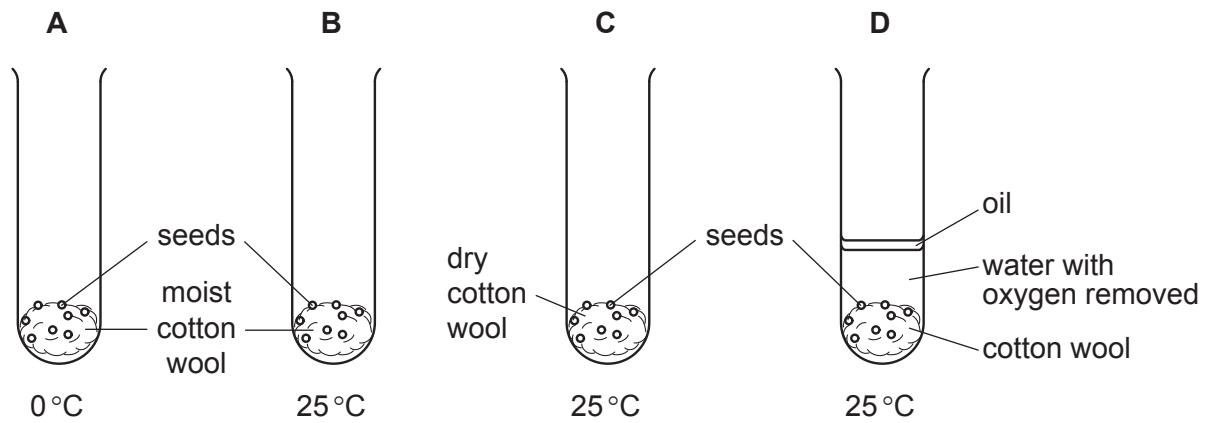
14 The diagram shows a baby, a child and an adult (not drawn to the same scale).

As a baby grows into an adult, which labelled region grows the **most**?

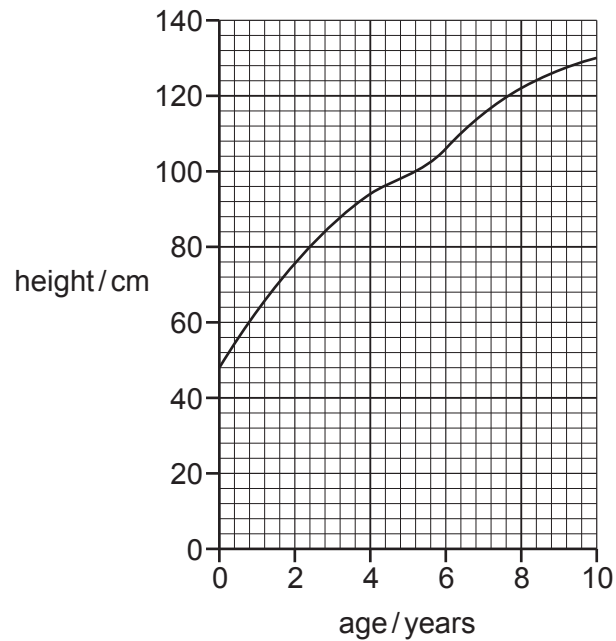


15 Four tubes were set up as shown and placed in the dark.

In which tube would the seeds germinate first?



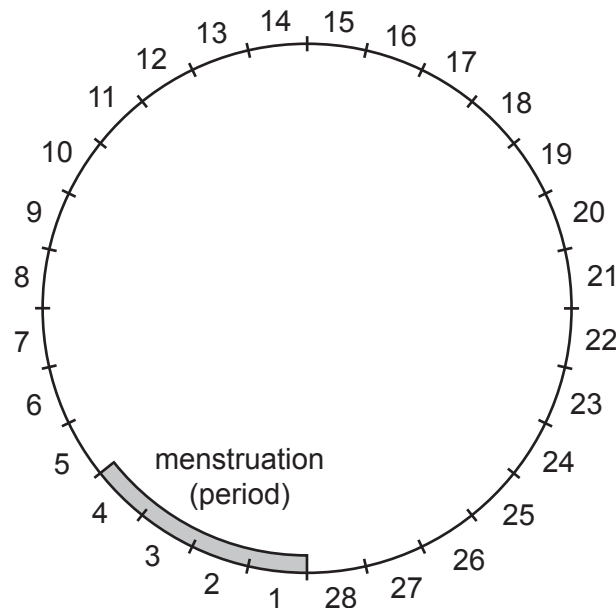
16 The graph shows the height of a child, from birth to the age of 10.



What was the approximate height of the child at 7 years of age?

- A** 106 cm **B** 116 cm **C** 122 cm **D** 130 cm

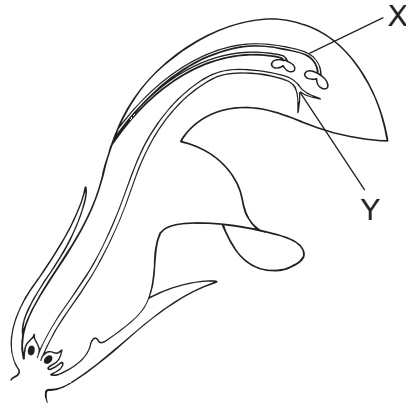
17 The diagram shows a timeline of a woman's menstrual cycle, which lasts for 28 days.



On which days of the menstrual cycle is a woman most likely to become pregnant?

- A** days 1 - 4
B days 7 - 10
C days 13 - 16
D days 20 - 23
- PhysicsAndMathsTutor.com

18 The diagram shows a vertical section through a flower.



What are X and Y?

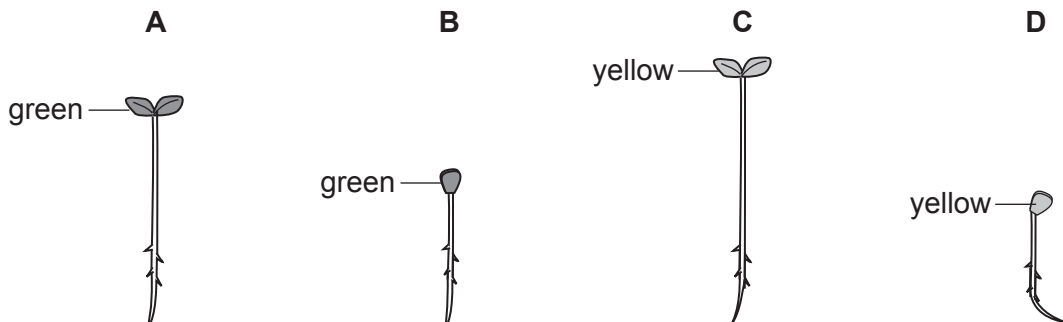
| | X | Y |
|----------|--------|--------|
| A | anther | stigma |
| B | anther | style |
| C | stamen | stigma |
| D | stamen | style |

19 Four samples of seeds germinated in different conditions of temperature and light, as shown in the table.

| sample | temperature / °C | light |
|--------|------------------|---------|
| 1 | 20 | absent |
| 2 | 20 | present |
| 3 | 5 | absent |
| 4 | 5 | present |

A typical seedling from each sample was removed after seven days.

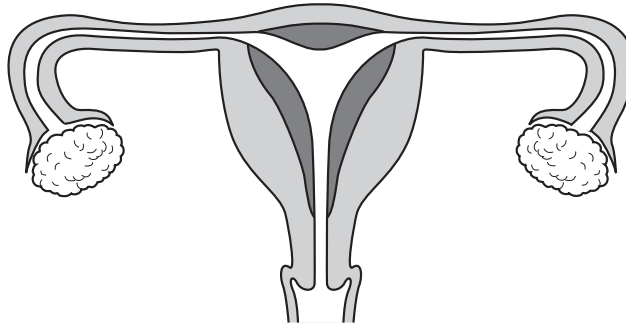
Which seedling was from sample 2?



20 Which structure is involved in the transfer of dissolved nutrients from the mother to the fetus?

- A kidney
- B liver
- C placenta
- D stomach

21 The diagram shows the human female reproductive system.



After ejaculation, along which route does a male gamete travel to fuse with an egg?

- A ovary → oviduct → uterus → cervix
- B ovary → uterus → cervix → vagina
- C vagina → cervix → uterus → oviduct
- D vagina → uterus → cervix → oviduct

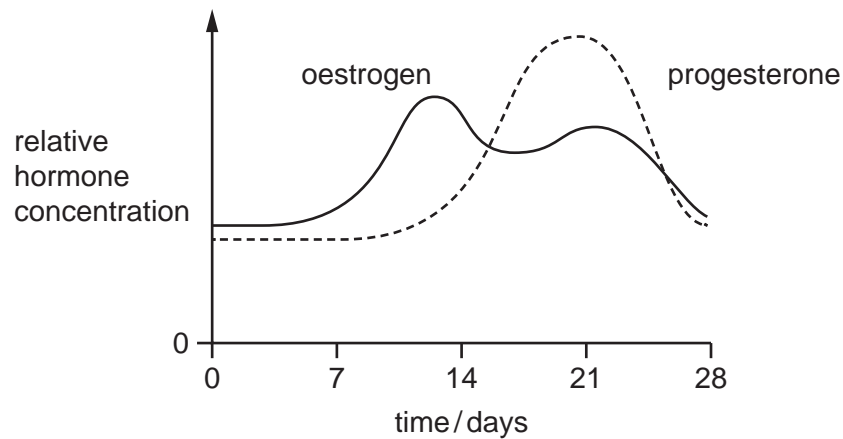
22 Which set of conditions is required for seed germination?

| | oxygen | warmth | water |
|---|--------|--------|-------|
| A | ✓ | x | ✓ |
| B | ✓ | ✓ | x |
| C | x | ✓ | ✓ |
| D | ✓ | ✓ | ✓ |

23 Which method of birth control is based on knowing the stage of a woman's menstrual cycle?

- A condom
- B contraceptive pill
- C diaphragm
- D rhythm method

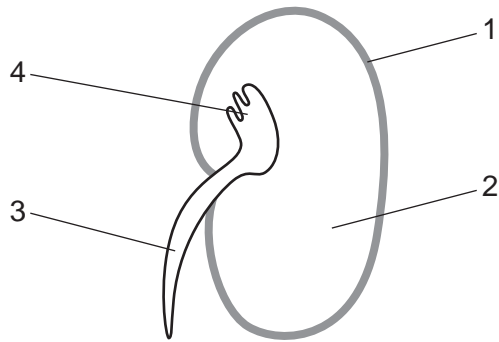
24 The diagram shows some changes which take place during a woman's menstrual cycle.



Assuming ovulation occurs on day 14, what is occurring at the time of ovulation?

- A a fall in the levels of oestrogen and progesterone
 - B a fall in the level of progesterone only
 - C a rise in the level of oestrogen
 - D a rise in the level of progesterone and fall in the level of oestrogen
- 25 Development is defined as an increase in
- A complexity.
 - B dry mass.
 - C number of cells.
 - D size.
- 26 In addition to a suitable temperature, what else is always necessary for seed germination?
- A carbon dioxide and sunlight
 - B mineral ions
 - C sunlight and water
 - D water and oxygen

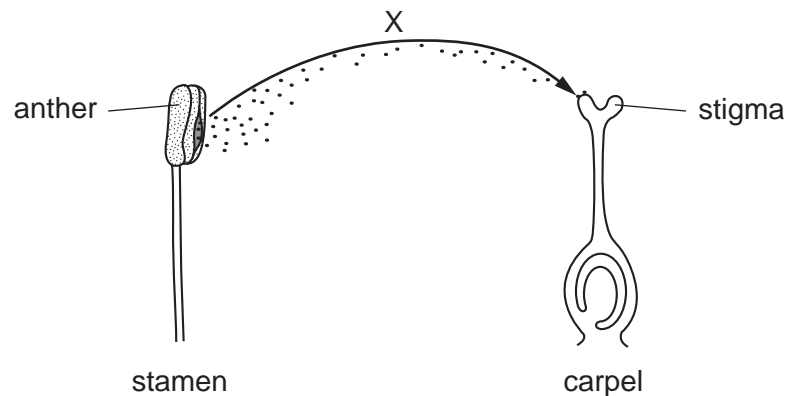
27 The diagram shows a germinating broad bean seed which has been cut in half.



Which labels show the cotyledon and the plumule?

| | cotyledon | plumule |
|----------|-----------|---------|
| A | 1 | 3 |
| B | 1 | 4 |
| C | 2 | 3 |
| D | 2 | 4 |

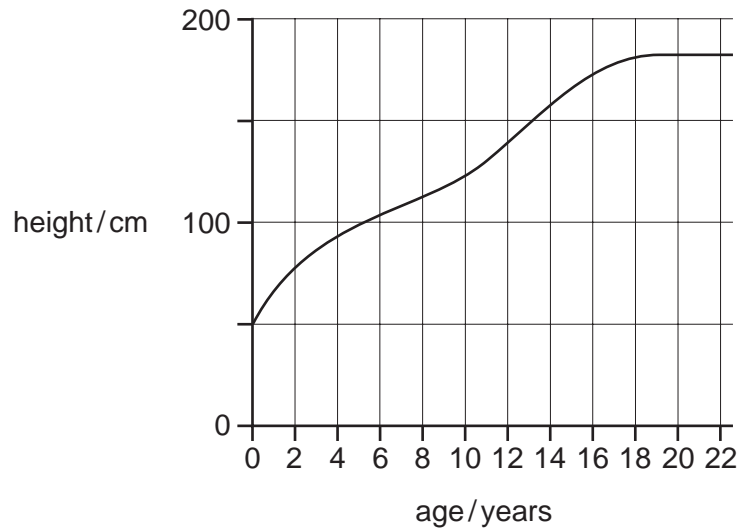
28 The diagram shows a process in plant reproduction.



Which process is represented by arrow X?

- A** fertilisation
- B** pollen tube growth
- C** pollination
- D** seed dispersal

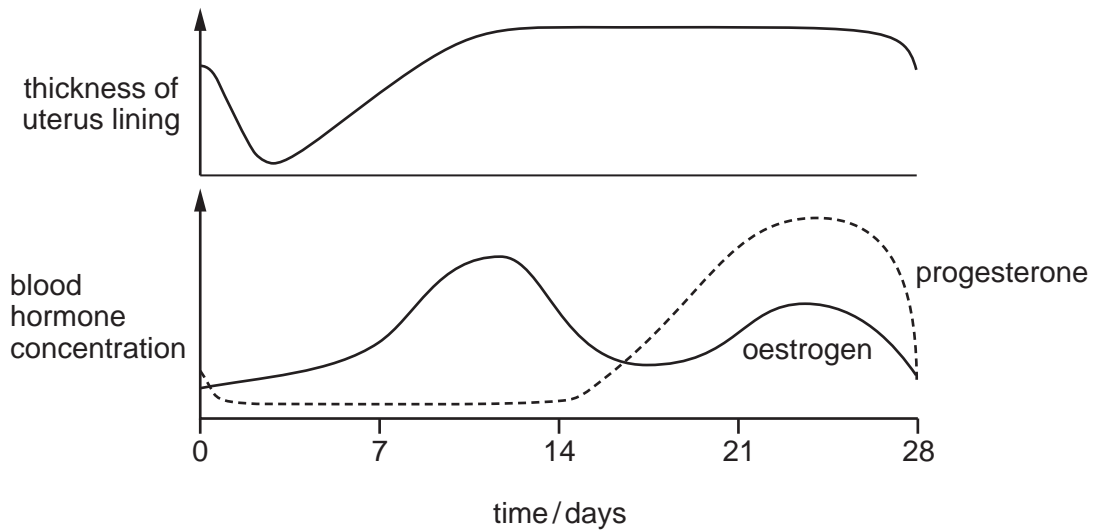
29 The graph shows how human height changes with age.



In which age range is the growth rate slowest?

- A 0–2 years
- B 8–10 years
- C 12–14 years
- D 18–20 years

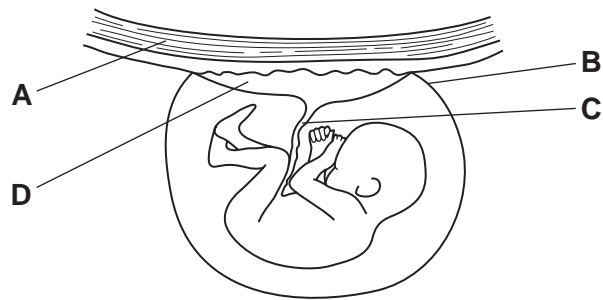
30 The graphs show changes that occur in a woman during the menstrual cycle.



Which statement is supported by evidence in the graphs?

- A A large increase in progesterone concentration always results in thickening of the uterus lining.
- B At ovulation, the uterus lining is at its thickest.
- C Each time the oestrogen concentration rises, the uterus lining becomes thicker.
- D Within 5 days of ovulation, the uterus lining gets thinner.

- 31 The diagram shows a developing fetus attached to the uterus of a pregnant woman.
Which part is normally cut immediately after birth?



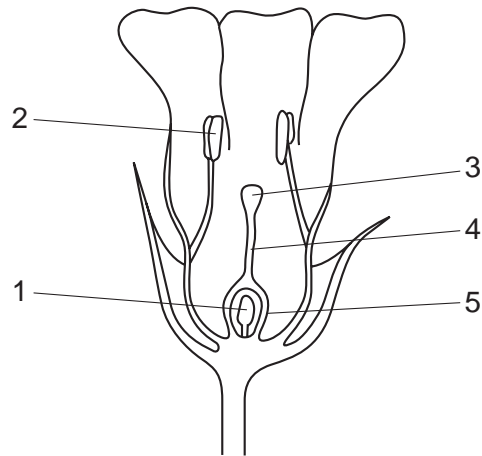
- 32 Which environmental condition is **not** essential for the germination of all seeds?

- A availability of light
- B availability of oxygen
- C availability of water
- D suitable temperature

- 33 What always increases during the development of an organism?

- A cell number
- B complexity
- C dry mass
- D volume

34 The diagram shows a flower in vertical section.



Which numbered parts of the flower continue to develop after fertilisation?

- A** 1 and 5 **B** 2 and 4 **C** 3 and 5 **D** 4 and 5

35 To avoid extinction of a rare plant species, a botanical garden keeps a collection of seeds, known as a seed bank.

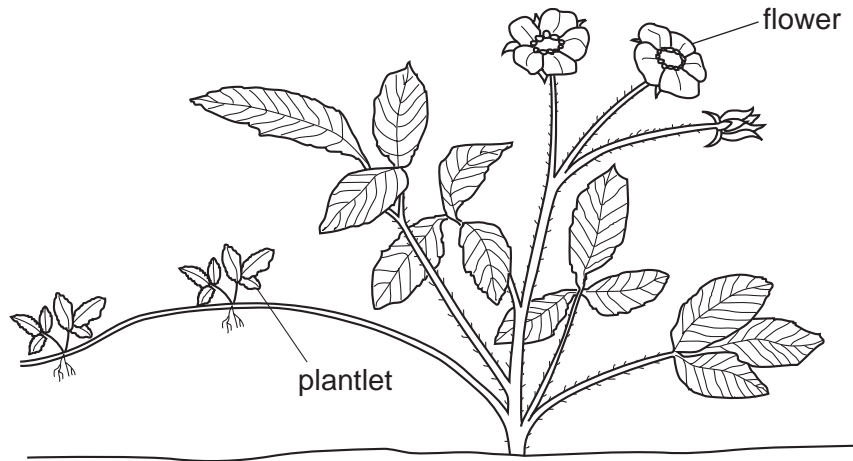
Which condition will prevent these seeds germinating whilst in storage?

- A** high humidity
B high oxygen levels
C low light intensity
D low temperature

36 What may be defined as 'an increase in dry mass'?

- A** growth
B nutrition
C reproduction
D respiration

37 The diagram shows a plant that is producing small plantlets.



Which statement about the plantlets is correct?

- A They are genetically different from the parent plant.
- B They are genetically identical to the parent plant.
- C They are produced as a result of the fusion of nuclei.
- D They are produced by fertilising the flowers.

38 Which response is a result of geotropism?

- A flowers being produced
- B growing bigger leaves
- C roots growing downwards
- D seeds germinating

39 Some bean seeds are planted 2 cm below the surface of some soil in a tray.

Which process will **not** occur as the seeds start to germinate?

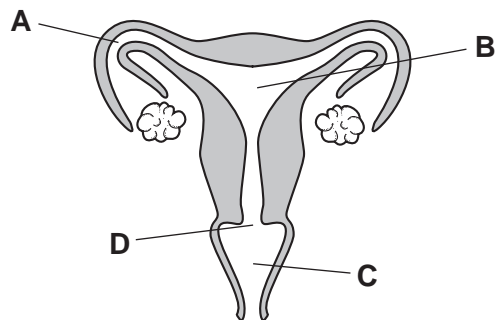
- A growth
- B osmosis
- C photosynthesis
- D respiration

40 What are involved in reproduction in **both** animals and plants?

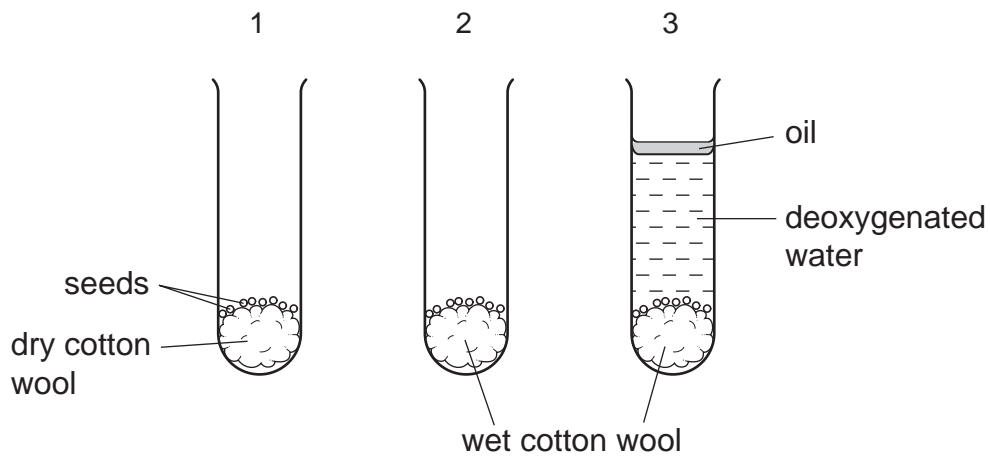
- A ovary and embryo
- B ovary and testes
- C ovule and stigma
- D uterus and embryo

41 The diagram shows different parts of the female reproductive organs where different methods of birth control can be used.

Where should a diaphragm be placed before intercourse if a couple do **not** want a baby?



42 The diagram shows an experiment on germination. Groups of test-tubes were set up as shown. The groups were placed in different conditions.



Which table shows the results?

| | | | | |
|----------|--------------|---|---|---|
| A | condition | 1 | 2 | 3 |
| | in the dark | x | ✓ | x |
| | in the light | x | ✓ | x |

| | | | | |
|----------|--------------|---|---|---|
| B | condition | 1 | 2 | 3 |
| | in the dark | x | ✓ | ✓ |
| | in the light | x | x | ✓ |

| | | | | |
|----------|--------------|---|---|---|
| C | condition | 1 | 2 | 3 |
| | in the dark | ✓ | ✓ | x |
| | in the light | x | ✓ | x |

| | | | | |
|----------|--------------|---|---|---|
| D | condition | 1 | 2 | 3 |
| | in the dark | ✓ | ✓ | ✓ |
| | in the light | ✓ | x | x |

key

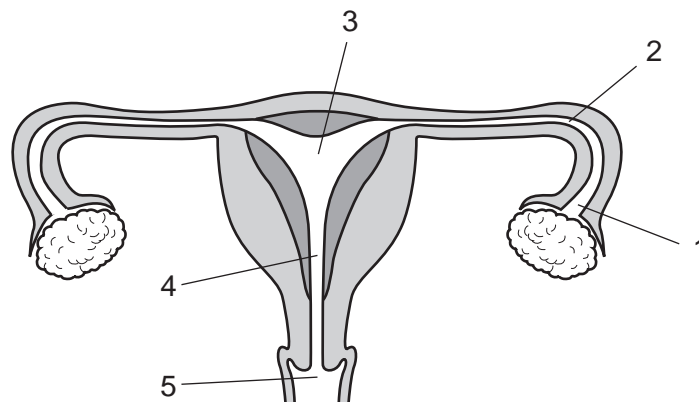
✓ = seeds germinate

x = seeds do not germinate

43 How will the composition of a pregnant woman's blood change as it passes through the placenta?

| | concentration of dissolved nutrients | concentration of urea |
|----------|--------------------------------------|-----------------------|
| A | decreases | decreases |
| B | decreases | increases |
| C | increases | decreases |
| D | increases | increases |

44 The diagram shows the female reproductive system.

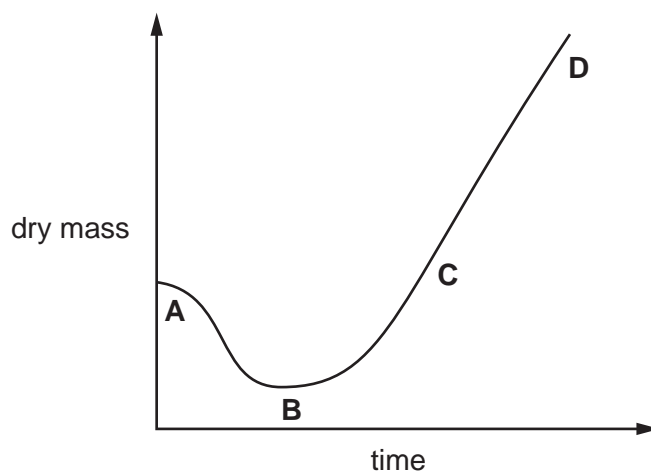


At which labelled points are sperms and ova released?

| | sperms | ova |
|----------|--------|-----|
| A | 3 | 2 |
| B | 4 | 2 |
| C | 5 | 1 |
| D | 5 | 3 |

45 The graph shows changes in dry mass as a seed germinates and becomes a seedling.

At which point is it respiring and photosynthesising at the same rate?



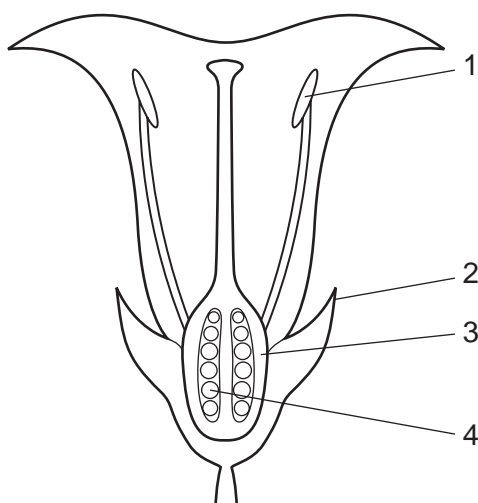
46 A mango tree can reproduce by seed and by asexual reproduction.

Trees produced by each of these methods produce mango fruits.

When comparing these fruits genetically, what is the correct result?

| | fruits of trees grown from seeds | fruits of trees produced by asexual reproduction |
|----------|----------------------------------|--|
| A | identical | identical |
| B | identical | non-identical |
| C | non-identical | identical |
| D | non-identical | non-identical |

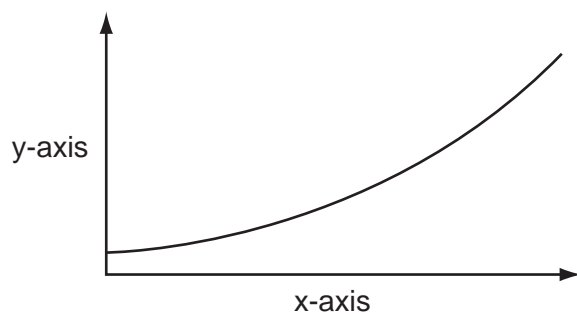
47 The diagram shows a section through a flower.



After the flower is fertilised, which parts will develop into the fruit and the seed?

| | fruit | seed |
|----------|-------|------|
| A | 1 | 2 |
| B | 1 | 4 |
| C | 2 | 3 |
| D | 3 | 4 |

48 The graph is a record of the growth of a plant.



Which labels should be used for the x-axis and the y-axis?

| | x-axis | y-axis |
|----------|------------|-----------------|
| A | dry mass | number of cells |
| B | time | cell size |
| C | time | dry mass |
| D | total mass | time |

49 Which environmental factor is **not** always a requirement for seed germination?

- A light
- B oxygen
- C suitable temperature
- D water

50 Which method of birth control works by preventing an egg from being released?

- A condom
- B contraceptive pill
- C rhythm method
- D vasectomy