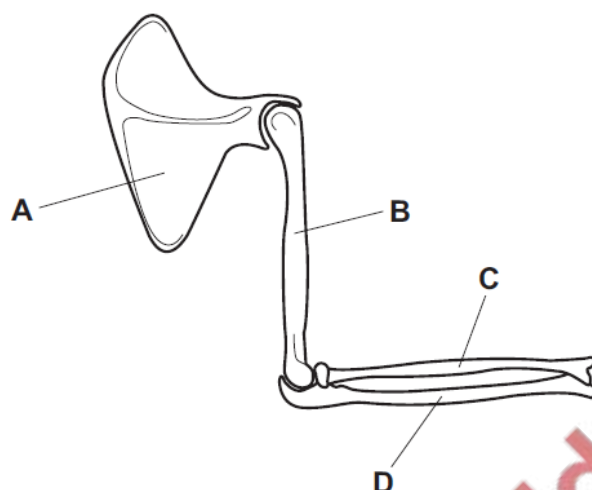


1. **Nov/2021/Paper_11/No.24**

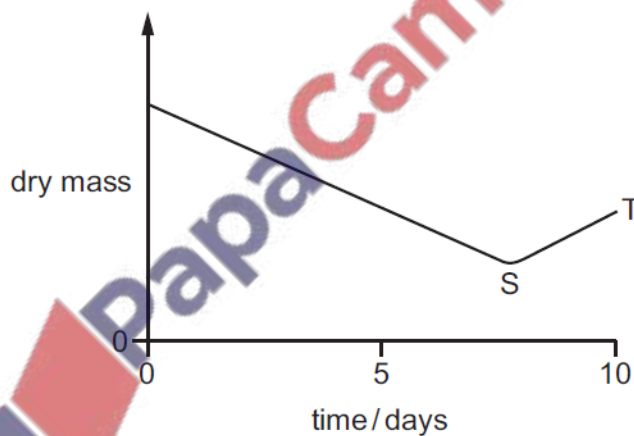
The diagram shows the bones of the arm.

Which label represents the radius?



2. **Nov/2021/Paper_11/No.34**

The graph shows changes in the dry mass of a seed as it germinates and grows.



What causes the change shown between points S and T?

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

3. Nov/2021/Paper_11/No.37

Some statements about chromosomes are listed.

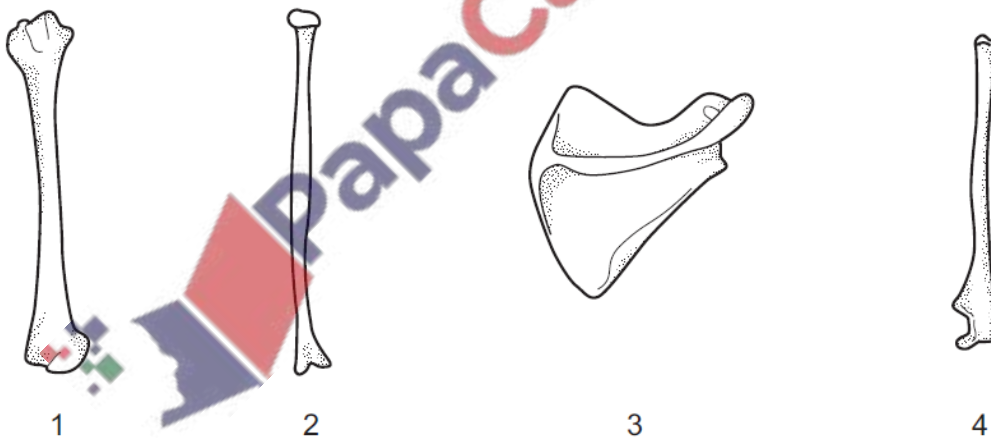
- 1 A chromosome includes a long molecule of DNA.
- 2 Genes are found in chromosomes.
- 3 In cell division, the chromosome number is kept the same by meiosis.
- 4 The normal human chromosome number is 46.

Which statements are correct?

- A 1, 2, 3 and 4
- B 1, 2 and 4 only
- C 2 and 3 only
- D 3 and 4 only

4. Nov/2021/Paper_12/No.24

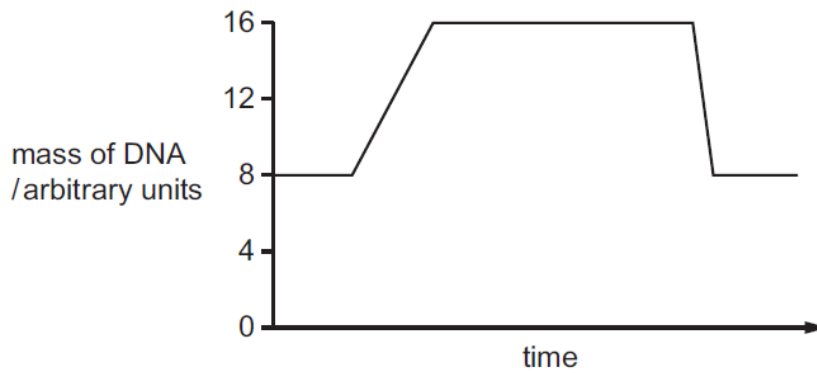
The diagram shows the bones of the forelimb.



Which bones form the hinge joint of the forelimb?

- A 1, 2 and 3
- B 1, 2 and 4
- C 1, 3 and 4
- D 2, 3 and 4

The diagram shows the mass of DNA in cells which are dividing.



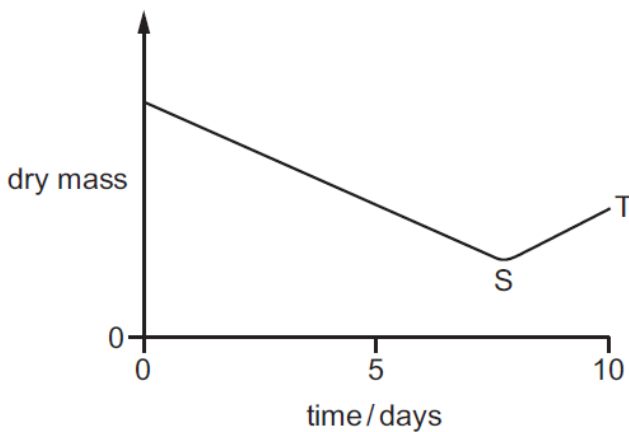
Which row describes this type of cell division?

	type of cell division	type of reproduction using this cell division	this type of cell division gives rise to
A	meiosis	asexual	genetically identical offspring
B	meiosis	sexual	genetically non-identical offspring
C	mitosis	asexual	genetically identical offspring
D	mitosis	sexual	genetically non-identical offspring



6. Nov/2021/Paper_12/No.34

The graph shows changes in the dry mass of a seed as it germinates and grows.

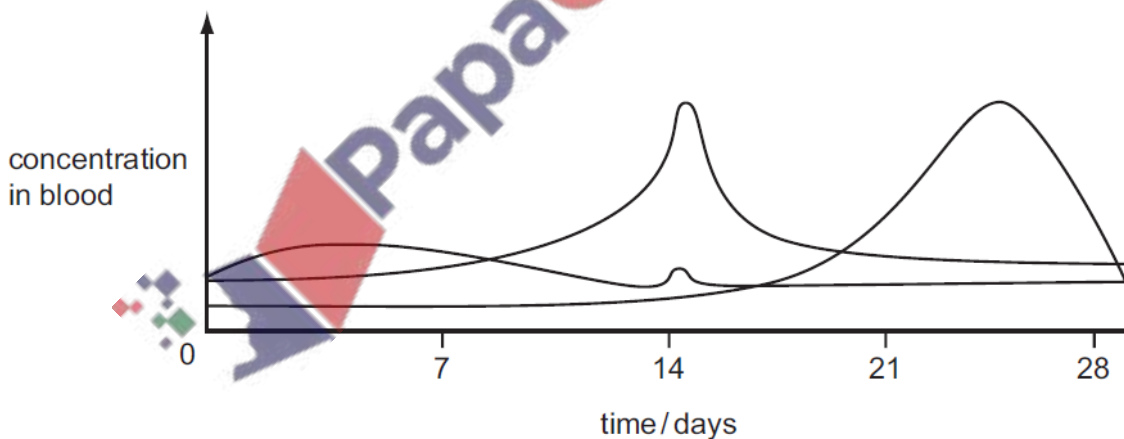


What causes the change shown between points S and T?

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

7. Nov/2021/Paper_12/No.35

The graph shows the concentration in the blood of three of the four hormones FSH, LH, oestrogen and progesterone during a menstrual cycle.



Which hormone is **not** shown?

- A FSH
- B LH
- C oestrogen
- D progesterone

(a) Explain the role of the nucleus and cell division in the inheritance of characteristics from parents to offspring.

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(b) If people are exposed to ionising radiation, this may affect the inheritance of characteristics by their children.

Suggest how this exposure to radiation may affect inheritance of characteristics.

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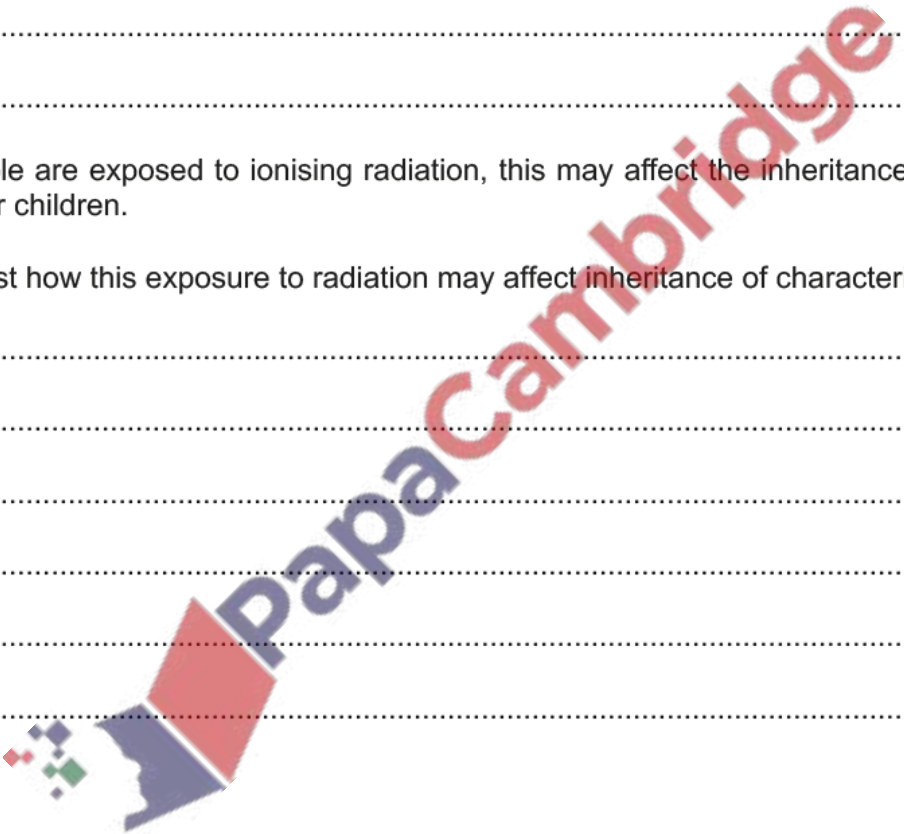
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[Total: 10]



(a) Sperm cells and pollen grains are both involved in sexual reproduction.

Compare the functions of a sperm cell and a pollen grain and describe how the structure of each is related to its function.

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(b) Suggest reasons why sexual reproduction may be better for the survival of a species than asexual reproduction.

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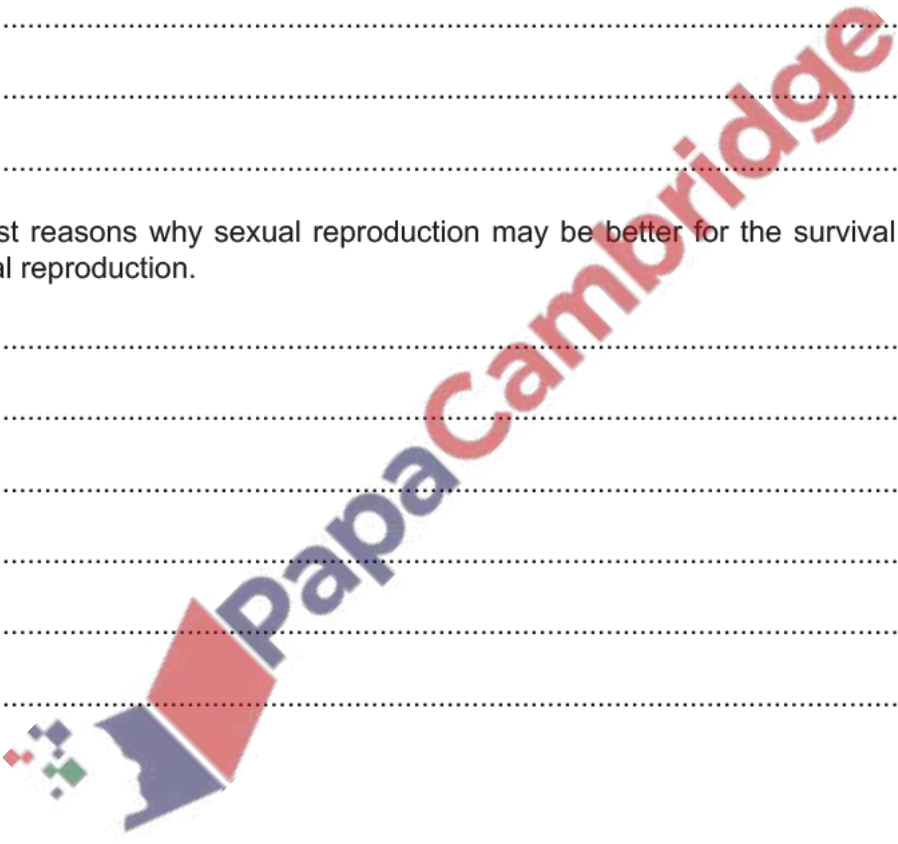
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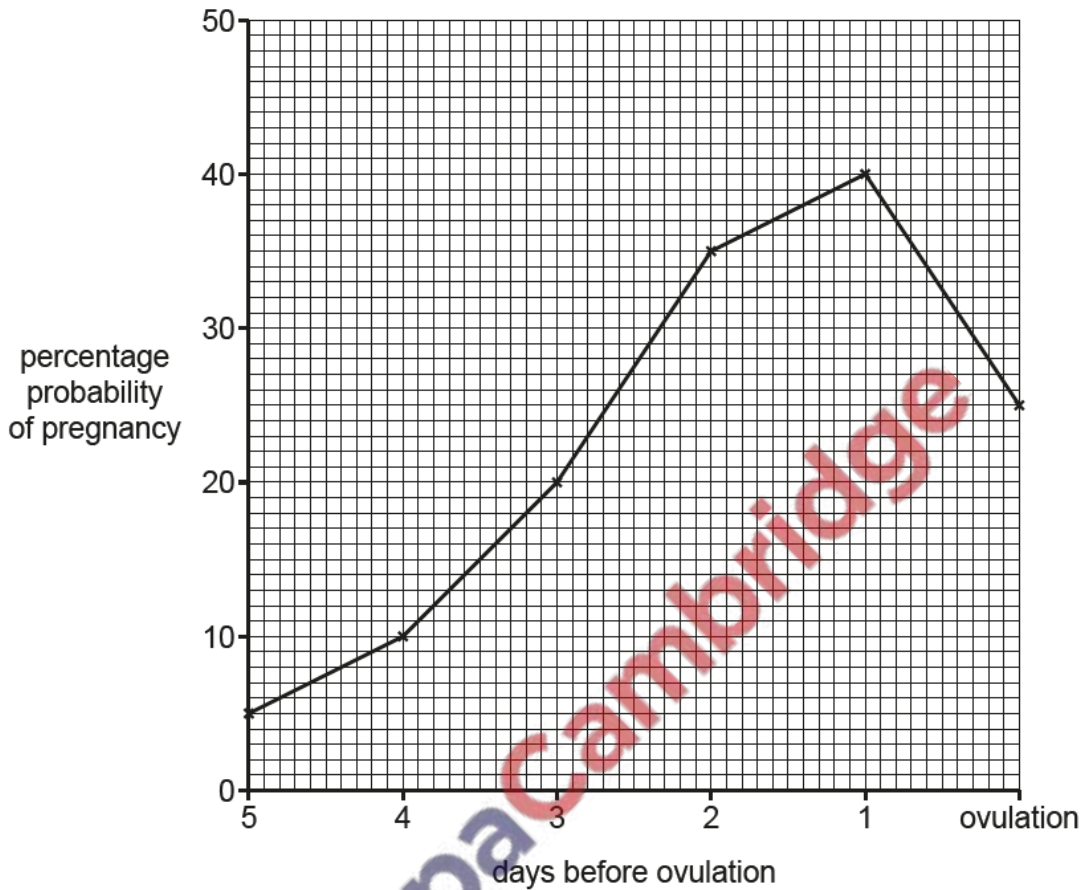
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[Total: 10]



A study investigated the probability of pregnancy resulting from sexual intercourse on specific days of the menstrual cycle.

The graph shows the results of this study.



- (a) (i) The study shows a probability of 20% that sexual intercourse three days before ovulation will result in pregnancy.

State how many times more likely pregnancy is if sexual intercourse takes place two days later.

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(ii) Explain the role of **named** hormones in the menstrual cycle during the days investigated by this study.

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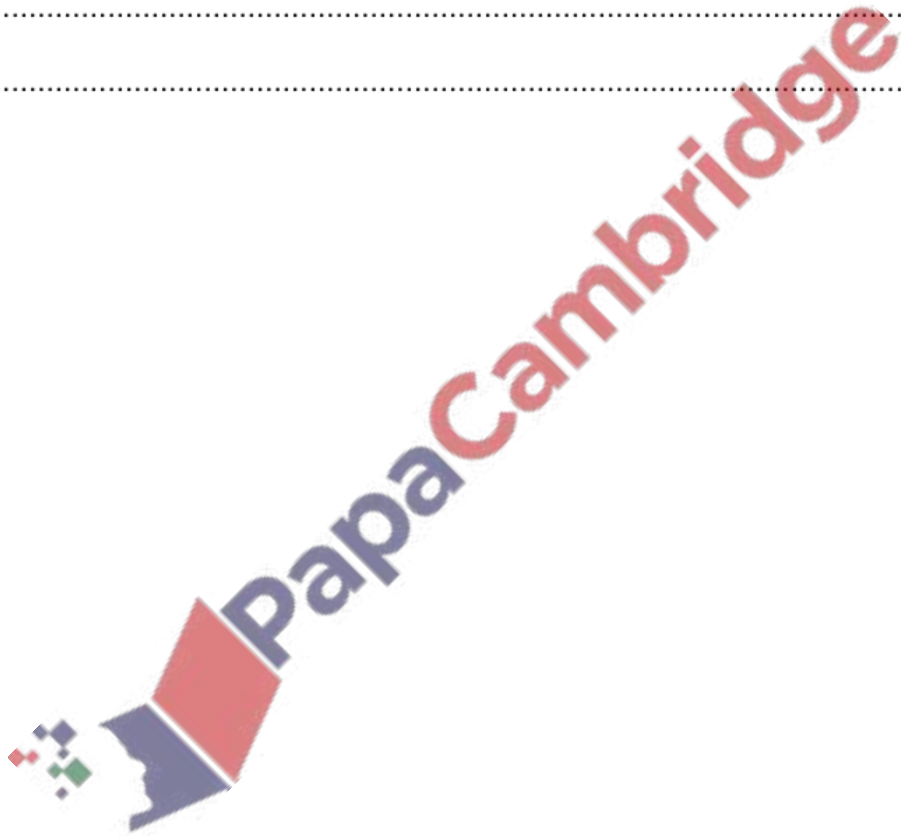
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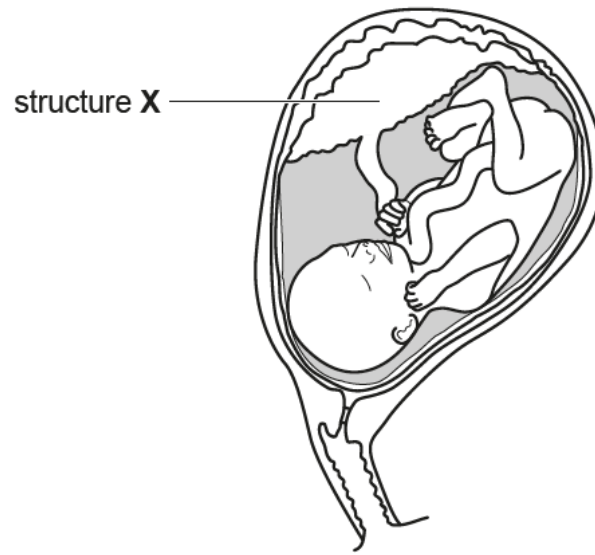
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[5]



(b) The diagram shows a fetus developing in the uterus of a pregnant female human.



Name structure X and describe the functions of this structure.

name

functions

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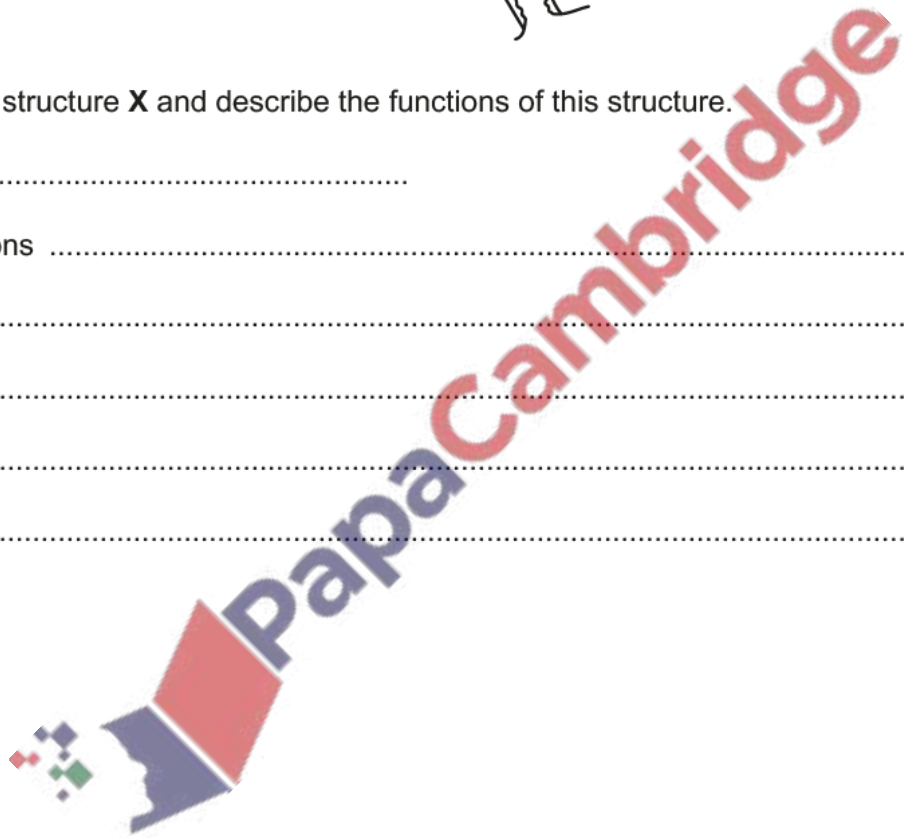
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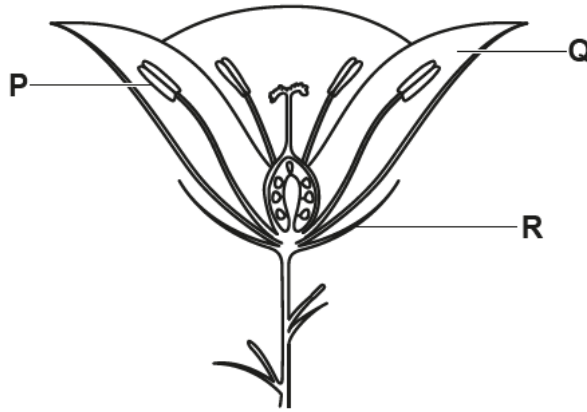
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[3]

[Total: 9]



The diagram shows a cross-section of an insect-pollinated flower.



- (a) Complete the table to show the name of structures **P**, **Q** and **R** and **one** function of each structure.

structure	name	function
P		
Q		
R		

[6]

- (b) (i) Describe the surface of a pollen grain from an insect-pollinated flower.

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Explain how **this feature** is an advantage in insect-pollination.

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[2]

- (ii) Explain how a pollen grain from a wind-pollinated flower is adapted for pollination.

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[Total: 10]

(a) Outline the importance of a seed being provided with a good supply of oxygen.

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(b) Outline the importance of a plant being provided with a good supply of water.

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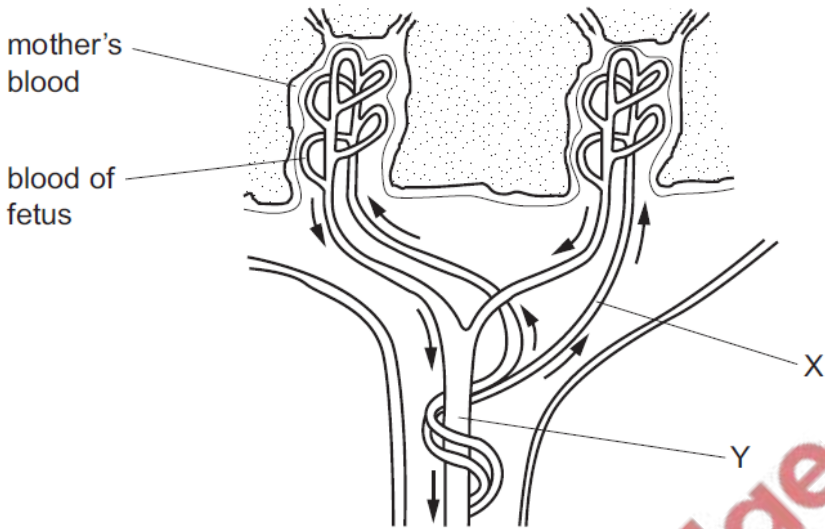
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[Total: 10]

13. Jun/2021/Paper_11/No.35

The diagram shows how the blood of a human fetus flows close to the mother’s blood in the placenta.



Which substances are present at X in higher concentrations than at Y?

- A carbon dioxide and glucose
- B carbon dioxide and urea
- C glucose and oxygen
- D glucose and urea

14. Jun/2021/Paper_21/No.6

(a) Yoghurt is a milk product.

Outline the role of microorganisms in the process of yoghurt production.

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(b) The diagram shows a food label from a pot of yoghurt.

contents	nutritional values in 100 g of yoghurt
energy	344 kJ
fat	4.5 g
total carbohydrates	5.5 g
sugar	5.5 g
fibre	0.0 g
protein	4.2 g
salt	0.1 g
calcium	0.125 g
water	81%

Yoghurt can contribute to a balanced diet but adult humans cannot survive by eating only yoghurt.

Explain this statement using the information on the label.

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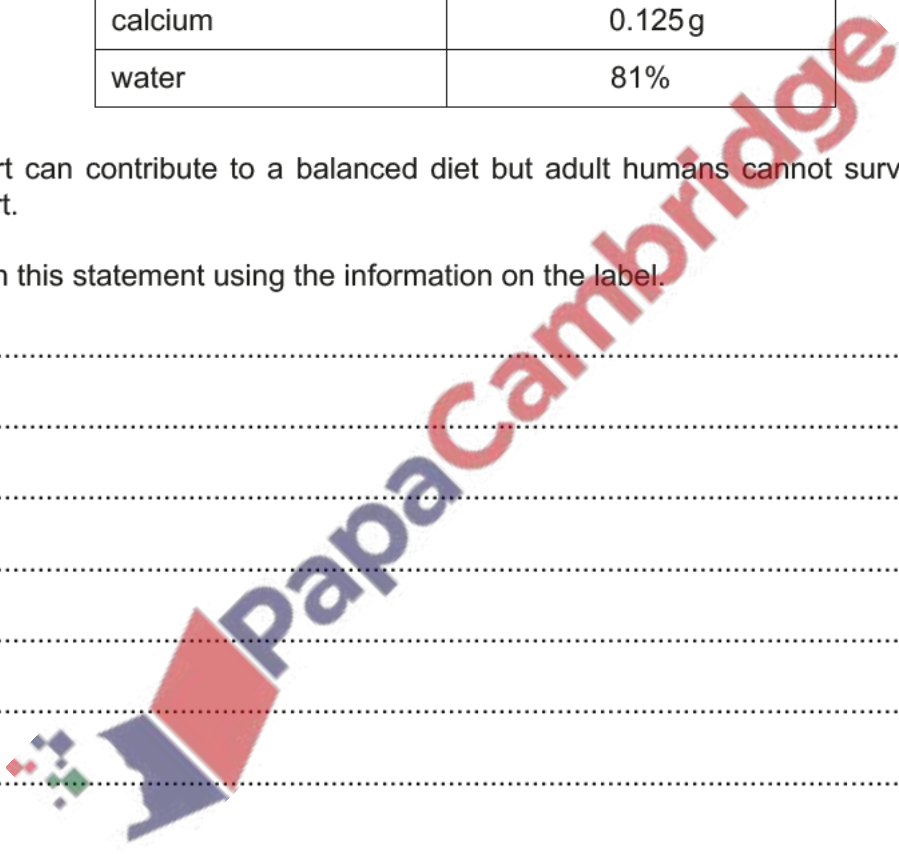
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[5]

[Total: 10]

A farmer is using a tool, called a mattock, to weed her crop.



(a) Explain how the muscles and bones in her right arm help her to lift the tool.

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(b) The farmer has not used any insecticides or artificial fertilisers on the crop. Explain ways in which this may help the local environment.

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[Total: 8]