

Mitosis and meiosis exam questions

1. The table shows the number of chromosomes found in each body cell of some different organisms.

Animals		Plants	
Species	Number of chromosomes in each body cell	Species	Number of chromosomes in each body cell
Fruit fly	8	Tomato	24
Goat	60	Potato	44
Human	46	Rice	24

(a) Nearly every organism on earth has an even number of chromosomes in its body cells.

Suggest why.

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(1)

(b) Chromosomes contain DNA molecules.

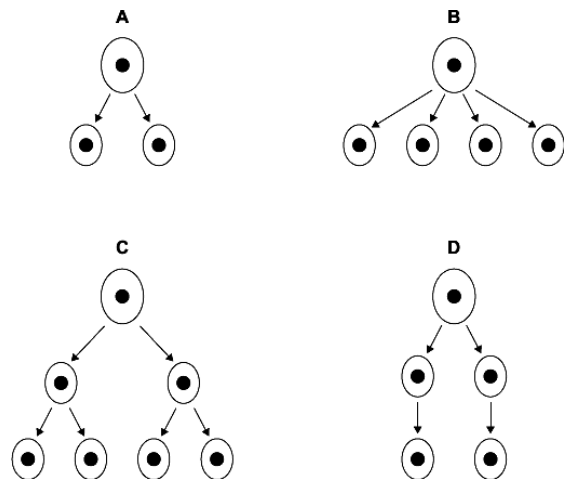
Describe the function of DNA.

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(2)

(c) Gametes are made in the testes by meiosis.

(i) Look at the diagrams.



Which diagram, **A**, **B**, **C** or **D**, represents how cell division by meiosis produces gametes in the testes?

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(1)

(ii) How many chromosomes will each goat gamete contain?

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(1)

(d) Body cells divide by mitosis.

(i) Why is the ability of body cells to divide important?

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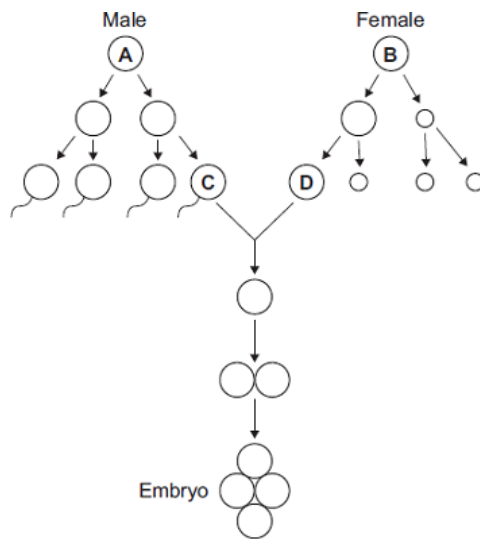
(1)

(ii) When a body cell of a potato plant divides, how many chromosomes will each of the new cells contain?

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(1)(Total 7 marks)

2. The diagram shows some of the cell divisions that occur during human reproduction.



(a) (i) Name the type of cell division that produces cell **D** from cell **B**.

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(1)

(ii) Which organ in the male body produces cell **C** from cell **A**?

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(1)

(b) (i) Cells **A** and **B** each contain 46 chromosomes. How many chromosomes would there be in the nucleus of cell **C**?

(1)

(ii) Why is it important that cell **C** has this number of chromosomes?

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(2)

(Total 5 marks)