17. Inheritance

17.2 Mitosis

Paper 1 and 2

Question Paper

Paper 1

Questions are applicable for extended candidates only

1 Which are functions of mitosis?

1 growth
2 production of gametes
3 repair of damaged tissue
4 replacement of cells
5 asexual reproduction

A 1, 3, 4 and 5
B 1 and 3 only
C 2, 3 and 4
D 2 only

2 Part of a tree branch is broken off and planted in the soil. A new tree grows from the branch.

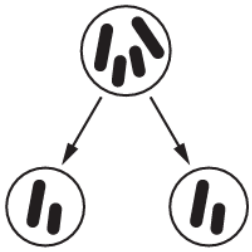
Which row is correct?

	the cells in the new tree are formed by		the cells in the original tree and in the new tree will be genetically	
	meiosis	mitosis	different	identical
A	✓	✗	✓	✗
B	✗	✓	✗	✓
C	✗	✓	✓	✗
D	✓	✗	✗	✓

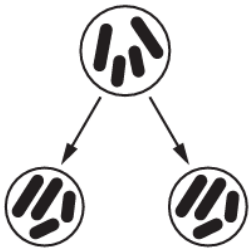
key
✓ = correct
✗ = not correct

3 Which diagram shows the results of the process of mitosis?

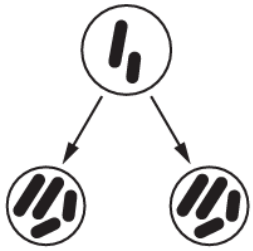
A



B



C



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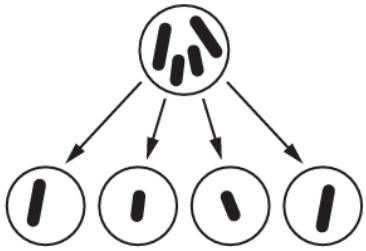


4 Mitosis is a type of cell division.

Which row about mitosis is correct?

	cells produced	functions
A	genetically different	growth and repair of tissues
B	genetically different	production of gametes
C	genetically identical	growth and repair of tissues
D	genetically identical	production of gametes

5 Which is a correct description of mitosis?

A It produces genetically identical cells called gametes.

B It produces genetically identical cells for growth and repair.

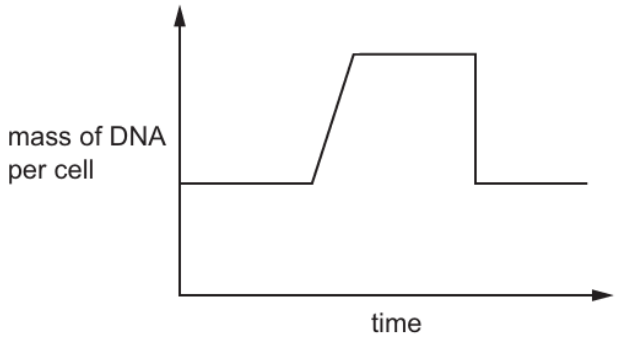
C It produces genetically different cells for growth.

D It produces genetically different cells called gametes.

Paper 2

Questions are applicable for extended candidates only

6 The graph shows how the mass of DNA per cell changes before, during and after a nuclear division in a diploid cell.

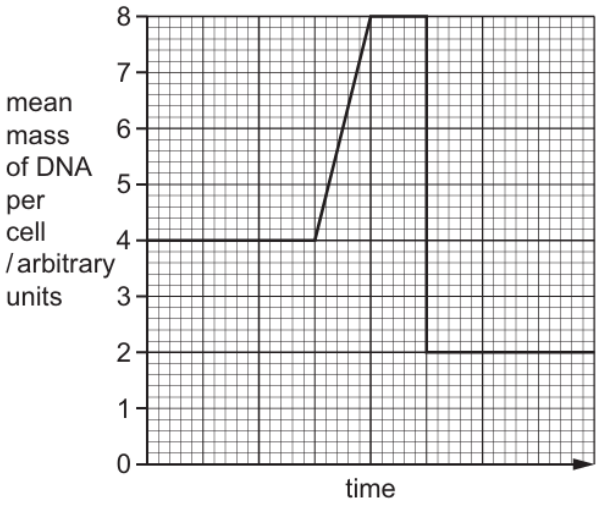


Which row describes the type of nuclear division and the chromosome number of the daughter cells shown in the graph?

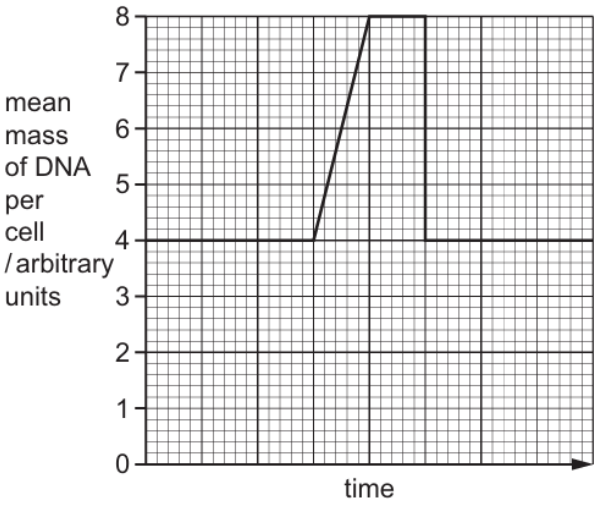
	type of nuclear division	chromosome number of daughter cells produced
A	meiosis	diploid
B	meiosis	haploid
C	mitosis	diploid
D	mitosis	haploid

7 Which graph shows the mean mass of DNA per cell before, during and after mitosis?

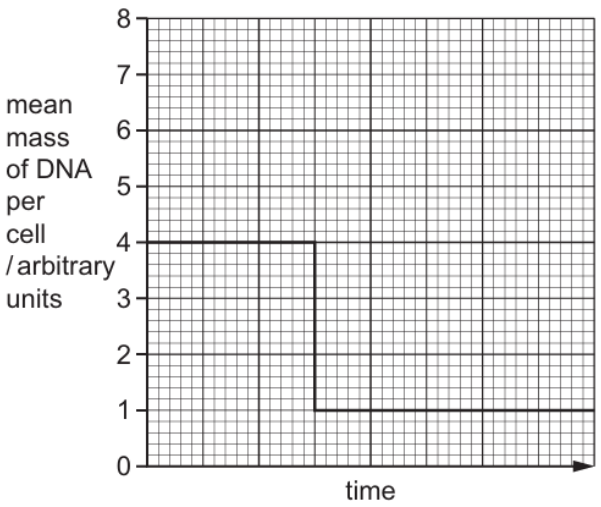
A



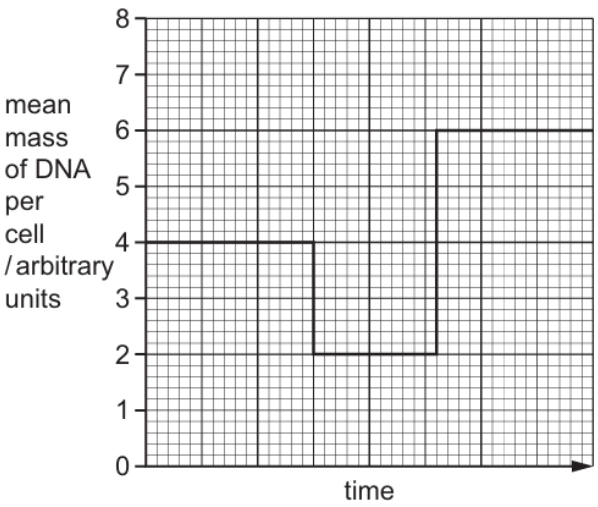
B



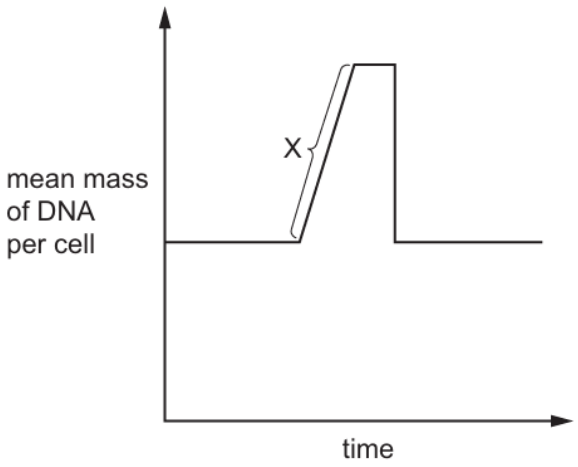
C



D



8 The diagram shows the changes in the mass of DNA in one cell before, during and after mitosis.



What is happening at X in the graph?

A the cell is changing from haploid to diploid

B the cell is dividing

C DNA replication

D reduction division

9 Which row shows correct information about mitosis?

	cells produced by mitosis	number of chromosomes in the daughter cells compared to the parent cell
A	are genetically different to the parent cell	half the number
B	are genetically different to the parent cell	the same number
C	are genetically identical to the parent cell	half the number
D	are genetically identical to the parent cell	the same number

10 Which statement is correct?

A Mitosis always produces offspring that are homozygous.

B Mitosis produces cells that are genetically identical.

C Mitosis produces gametes in animals.

D Mitosis only produces haploid cells.

11 Some statements about mitosis are listed.

1 Cells divide and produce new cells to repair damaged tissues.

2 Chromosomes are duplicated and the cell separates to form gametes.

3 Chromosomes are duplicated and the cell separates to form genetically identical cells.

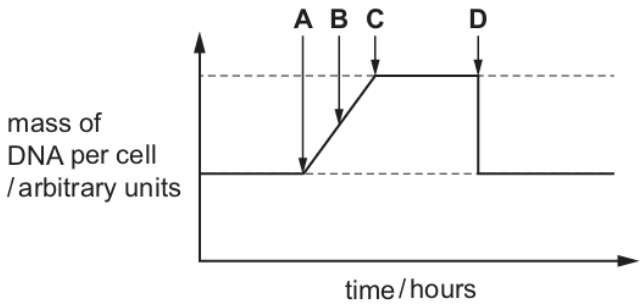
4 Mitosis is used in asexual reproduction.

Which statements are correct?

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

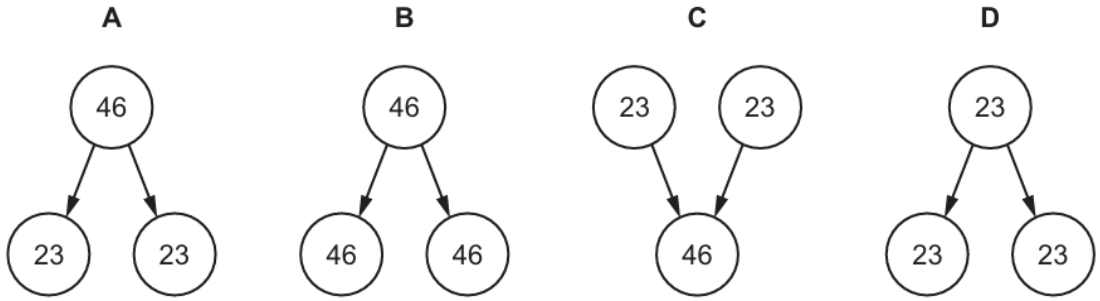
12 The graph shows how the mass of DNA changes during a mitotic cell division.

Where on the graph are two cells formed?



13 The diagrams show human nuclei and the number of chromosomes in each nucleus.

Which diagram represents nuclear division of skin cells for growth and repair?



14 When damaged tissues are repaired cells undergo division by

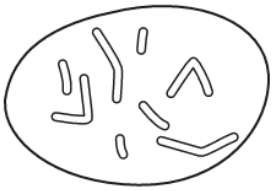
A meiosis to produce genetically identical cells.

B meiosis to produce genetically different cells.

C mitosis to produce genetically identical cells.

D mitosis to produce genetically different cells.

15 The diagram shows the chromosomes in the nucleus of a cell that divides by mitosis.



Which diagram shows the chromosomes in the nucleus of one of the daughter cells produced?