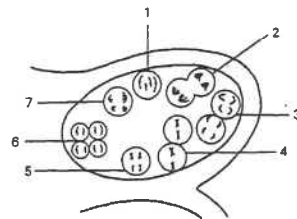


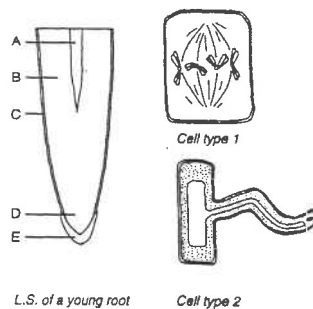
Past HKCEE Questions
Cell Division
Paper I

1. The diagram below shows stages of cell division in part of a transverse section of an anther. (The parts are not drawn to scale.)



- Using the numbers marked on the diagram, list the stages of cell division in their correct order.
 - Name this type of cell division and state one other region in a plant where you can find the same type of cell division.
 - Name the daughter cells produced by the cell division shown in the diagram.
 - What is the importance of this type of cell division in the life history of a flowering plant?
 - Name two structures where this type of cell division is found in a mammal.
- (HKCEE 1981)

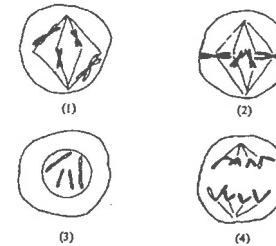
2. The diagrams below show the longitudinal section of a young root and two types of cells taken from it:



- Using letters in the diagram, state the region where the following can be found:
(1) cell type 1
(2) cell type 2 (2 marks)
 - (1) Name the process occurring in cell type 1 as shown in the diagram. (1 mark)
(2) What is the significance of this process in the root? (2 marks)
 - (iii) Explain how cell type 2 is structurally adapted to its function. (3 marks)
- (HKCEE 1995)

Past HKCEE Questions
Cell Division
Paper II

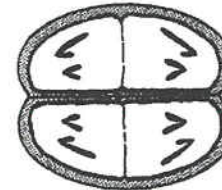
- 90-2.
The following diagrams show four different stages during a cell division:



The correct sequence of the stages is

- (1), (2), (3), (4)
- (2), (4), (1), (3)
- (3), (1), (2), (4)
- (4), (2), (1), (3)

- 91-7.
The diagram below shows a single cell undergoing cell division:



This type of cell division can be found

- in the mother.
- in the testis.
- at the root tip.
- in the bone marrow.

- 91-8.
Which of the following statements concerning cell divisions are correct?

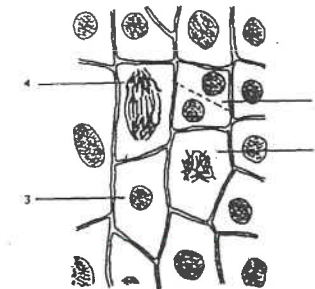
- Two daughter cells are formed in mitosis.
- Chromosomes replicate once in mitosis and twice in meiosis.
- The daughter cells formed in meiosis have the same number of chromosomes.

- (1) and (2) only
- (1) and (3) only
- (2) and (3) only
- (1), (2) and (3)

- 92-39.
If the diploid chromosome number of a flowering plant is 24, which of the following structures has 12 chromosomes?

- an anther
- an embryo
- a stigma
- a pollen grain

93.
Directions: Questions 3 and 4 refer to the diagram below which shows cells in the root tip in various stages of cell division:



- 93-3.
Which of the following is a correct sequence of the different stages of the cell division?

- 1→2→3→4
- 1→3→4→2
- 3→2→4→1
- 3→4→2→1

- 93-4.
This type of cell division occurs during the formation of

- skin cells.
- sperm cells.
- red blood cells.

- A. (1) only
B. (2) only
C. (1) and (3) only
D. (2) and (3) only

95-4.

Below are three different stages of a cell division

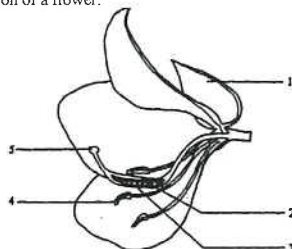
- (1) Chromosomes separate.
(2) Chromosomes arrange themselves at equator of the spindle.
(3) Chromosomes duplicate.

Which of the following shows the correct sequence?

- A. (1)→(2)→(3)
B. (1)→(3)→(2)
C. (2)→(1)→(3)
D. (3)→(2)→(1)

95.

Directions: Questions 46 and 47 refer to the diagram below which shows the longitudinal section of a flower:



95-46

Haploid cells are formed in

- A. 2 and 3.
B. 2 and 4.
C. 3 and 5.
D. 4 and 5.

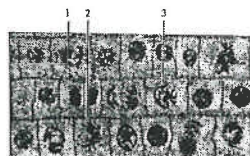
95-47.

Which structure is responsible for receiving the pollen grains?

- A. 1
B. 2
C. 4
D. 5

96-9.

The photomicrograph below shows some plant cells at different stages of mitosis:

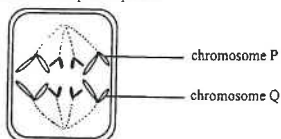


Which cells contain the same amount of DNA?

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

03-11

The diagram below shows a dividing cell found at the root tip of a plant:



Which of the following statements is correct?

- A. The parent cell has eight chromosomes.
B. P and Q are homologous chromosomes.
C. The daughter cells will be haploid.
D. Each daughter cell will have four chromosomes.

03-57

The photomicrographs below show four stages in the cell division of plant cells:



The correct sequence of the four stages is

- A. Q→S→R→P
B. R→P→Q→S
C. S→Q→R→P
D. S→R→P→Q

04-30

Which of the following is a correct statement about meiosis occurring in the human testis?

- A. DNA replicates before the start of meiosis I.
B. The pair of chromatids separates in meiosis I.
C. Homologous chromosomes pair up in meiosis II.
D. All daughter cells contain the Y chromosome.

Past HKCEE Questions

Cell Division

Suggested Answers

Paper I

- | | | |
|--------|--|-----|
| 1. (i) | 1,5,7,2,4,3,6 | 2/0 |
| (ii) | meiosis | 1 |
| | ovary / ovule | 1 |
| (iii) | pollen grains | 1 |
| (iv) | to reduce the chromosome number of the cell by half so that as a result of fertilization the chromosome number can be restored | 1 |
| (v) | ovary | 1 |
| | testis | 1 |
| 2. (i) | (1) cell type 1 - D | 1 |
| | (2) cell type 2 - C | 1 |
| (ii) | (1) Mitosis / cell division | 1 |
| | (2) to increase the cell number for growth / repair of the root | 1 |
| (iii) | It has an outgrowth / root hair to provide a large surface area | 1 |
| | Communication skill (c) | 1 |

Paper II

90-2	C
91-7	A
91-8	B
92-39	D
93-3	C
93-4	C
95-4	D
95-46	B
95-47	D
96-9	D
03-11	D
03-57	C
04-30	A