

1.1 Cells: Theory

Question Paper

Course	DPIB Biology
Section	1. Cell Biology
Topic	1.1 Cells: Theory
Difficulty	Easy

Time allowed: 10
Score: /5
Percentage: /100

Question 1

Which of the following options is **not** a source of stem cells?

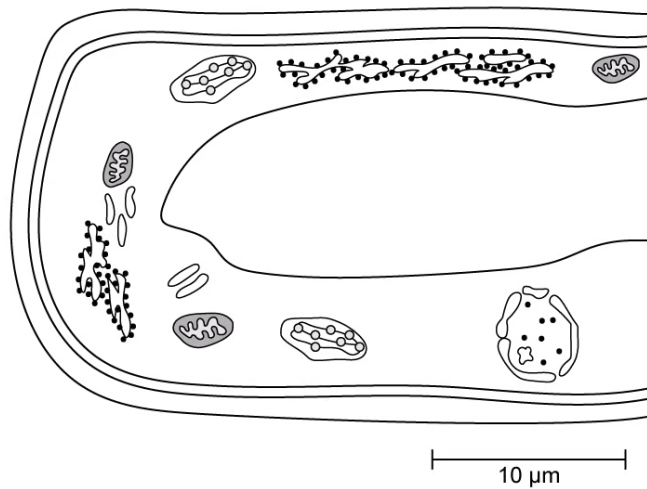
- A. Umbilical cord blood
- B. Bone marrow
- C. An embryo
- D. Blood plasma

[1 mark]

Question 2

The electron micrograph below shows a plant cell.

The scale bar (measuring 45 mm in length) on this drawing represents a length of 10 μm .



Which of the following correctly represents the magnification of the electron micrograph?

- A. x45000
- B. x4.5
- C. x4500
- D. x450

[1 mark]

Question 3

Paramecium is a genus of unicellular eukaryotic organisms which carry out several functions in order to stay alive. The table below lists four of these functions and descriptions on how *Paramecium* carry them out.

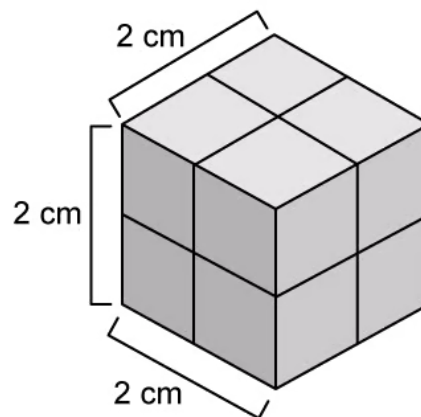
Which of the following rows correctly describes the processes of the *Paramecium*?

	Metabolism	Reproduction	Response	Nutrition
A.	Carry out photosynthesis in their chloroplasts	Commonly asexual	Beating cilia moves them through water in response to external stimuli	Get their nutrition from the products of photosynthesis
B.	Reactions such as respiration take place in the cytoplasm	Commonly asexual	Beating cilia moves them through water in response to external stimuli	Take in nutrients via their oral groove which they digest using enzymes
C.	Carry out photosynthesis in their chloroplasts	Mostly sexual	Beating 'tail' called a flagellum moves them through water in response to external stimuli	Get their nutrition from the products of photosynthesis
D.	Reactions such as respiration take place in the cytoplasm	Mostly sexual	Beating 'tail' called a flagellum moves them through water in response to external stimuli	Take in nutrients via their oral groove which they digest using enzymes

[1 mark]

Question 4

The cube below has sides that measure 2 cm in length.



Which of the following represents the correct surface area : volume ratio of this cube?

- A. 1:1
- B. 6:1
- C. 3:1
- D. 2:1

[1 mark]

Question 5

Which changes can occur when a cell differentiates from a stem cell into a specialised cell?

- I. The shape of the cell can change
- II. The number and type of proteins in the cell changes
- III. Enzymes cut out the DNA that is no longer needed

- A. I. and II.
- B. II. and III.
- C. I. and III.
- D. All of the options

[1 mark]