Your Science Online

Cambridge IGCSE Biology 0610 style

CELLS

Topic practice paper (exam style)

CANDIDATE NAME	
CLASS	
DATE	

45 minutes

You will need: a pen, a pencil, a ruler and a calculator.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes or in the margins.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

- The total mark for this paper is 41.
- The number of marks for each question or part question is shown in brackets [ ].
- Questions or parts marked **[Extended]** are for Extended-tier candidates. Core candidates may leave them out (Core total: 38 marks).
- Topics: plant, animal and bacterial cells, functions of cell structures, specialised cells, levels of organisation, magnification and preparing a slide.

For teacher's use	
Question	**Mark**
1	
2	
3	
4	
5	
6	
Total	

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1 Fig. 1.1 shows a plant cell from a leaf, as seen with a light microscope.

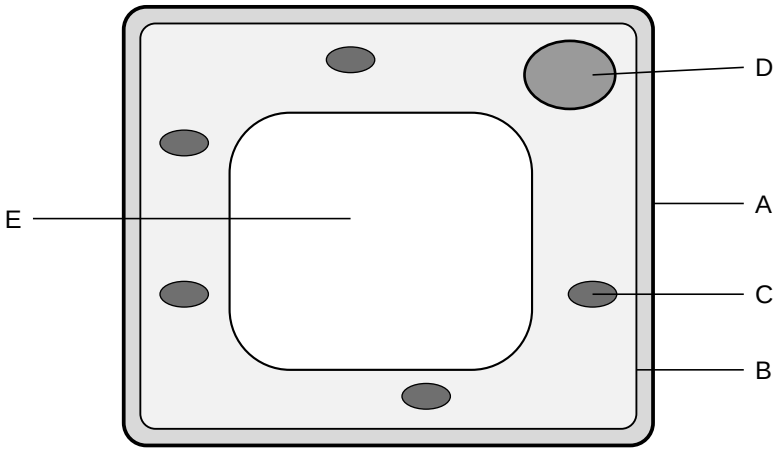

Fig. 1.1

(a) Name the structures labelled A, B, C and D.

A .....

B .....

C .....

D ..... [4]

(b) Structure E contains cell sap. Name structure E.

..... [1]

(c) State **two** structures shown in Fig. 1.1 that are **not** found in an animal cell.

1

.....

2

..... [2]

(d) State the function of structure C.

.....

..... [1]

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2 Fig. 2.1 shows a bacterial cell.

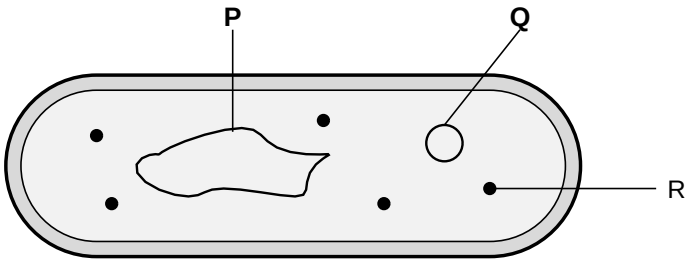

Fig. 2.1

(a) Name the structures labelled P, Q and R.

P .....

Q .....

R ..... [3]

(b) State **one** way in which the genetic material of a bacterial cell is different from that of a plant cell.

.....

..... [1]

(c) Both bacterial cells and animal cells contain ribosomes. State the function of ribosomes.

..... [1]

(d) Animal cells contain mitochondria. Bacterial cells do not. State the function of mitochondria.

.....

..... [2]

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3 Cells are specialised to carry out particular functions.

(a) Complete Table 3.1.

Specialised cell	Function
ciliated cell	
root hair cell	
	carries oxygen around the body
palisade mesophyll cell	
	conducts electrical impulses

Table 3.1

[4]

(b) Explain how the shape of a root hair cell is adapted to its function.

.....

.....

[2]

(c) Red blood cells do not have a nucleus. Suggest how this helps them to carry out their function.

.....

.....

[1]

(d) A sperm cell contains many mitochondria. Explain why.

.....

.....

[2]

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4 Living organisms are organised into levels.

(a) Put these levels of organisation in order, starting with the smallest.

organ cell organism tissue organ system

smallest ..... largest [1]

(b) State what is meant by a *tissue*.

.....

..... [1]

(c) State what is meant by an *organ*.

.....

..... [1]

(d) Name **one** organ found in a plant.

..... [1]

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5 A student draws a cheek cell seen under a light microscope. Fig. 5.1 shows the drawing. The magnification of the drawing is ×1500.

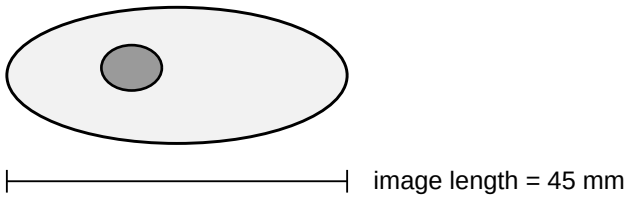

Fig. 5.1

(a) Calculate the actual length of the cell in mm. Show your working.

.....

.....

actual length = ... mm [2]

(b) ***[Extended]*** Convert your answer to (a) into micrometres.

actual length = ... micrometres [1]

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(c) A pollen grain has an actual diameter of 0.020 mm. In a drawing, its diameter is 60 mm. Calculate the magnification of the drawing.

.....

.....

magnification = × ..... [2]

(d) ***[Extended]*** A mitochondrion is 2.0 micrometres long. On a photograph it is 10 mm long. Calculate the magnification of the photograph.

.....

.....

magnification = × ..... [2]

6 A student prepares a slide of onion epidermis cells to look at with a light microscope.

(a) Describe how the student should prepare the slide.

.....

.....

.....

..... [4]

(b) The student adds a drop of iodine solution. Suggest why.

..... [1]

(c) The student lowers the cover slip slowly, at an angle, using a mounted needle. Suggest why.

..... [1]

END OF PAPER

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