IGCSE BIOLOGY • EXERCISE SHEET

2.1 Cell structure

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

Objective

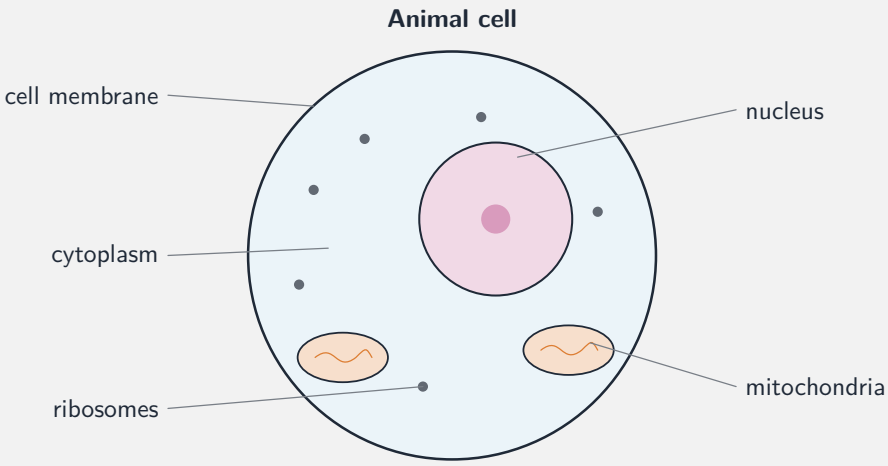
Build the skills to answer exam questions on **cell structure** 细胞结构—comparing plant, animal and bacterial cells, the function of each structure, and **specialised cells** 特化细胞.

You must be able to:

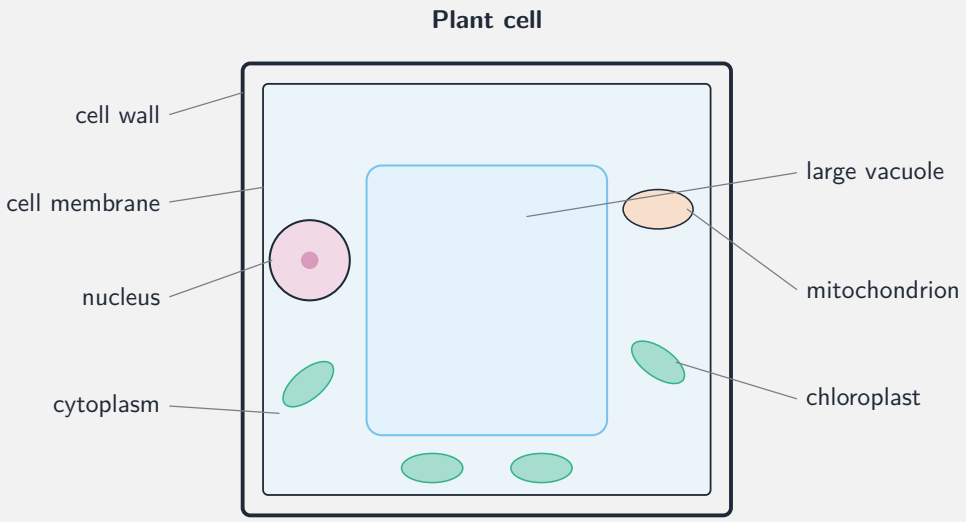
- state which structures are in plant, animal and bacterial cells
- give the function of each structure
- link a specialised cell to its feature, and order the levels of organisation

1 Worked examples

Comparing cells



Animal cell: membrane, cytoplasm, nucleus, mitochondria, ribosomes



A plant cell also has a cell wall, a large vacuole and chloroplasts

- **bacterium:** no nucleus (a loop of DNA), plus plasmids; no mitochondria.
- **levels:** cell → tissue → organ → organ system → organism.

2 Practice

2.1 Name three structures found in a plant cell but **not** an animal cell. [3]

2.2 State the function of mitochondria. [1]

3 Exam-style questions

3.1 A cell has no nucleus, but has a cell wall, a loop of DNA and plasmids. It is a: [1]

- **A** plant cell
- **B** animal cell
- **C** bacterial cell
- **D** red blood cell

3.2 A red blood cell is a specialised cell.

(a) State its job. [1]

(b) Explain how having no nucleus suits this job. [2]

3.3 Put these in order from smallest to largest: organ, cell, organism, tissue, organ system. [2]

4 Go further

You are now ready for the real exam questions on this subtopic. Open the **2.1 Cell structure** past-paper sheet in the Library, or try these in **Practice mode**:

- 0610/21 N25 —Q3 (cell structure)
- 0610/22 N25 —Q4 (comparing cells)

Solutions

2.1 cell wall; (large) vacuole; chloroplasts.

2.2 where respiration happens to release energy.

3.1 C. No nucleus + plasmids + a DNA loop → a bacterial cell.

3.2 (a) to transport oxygen.
(b) with no nucleus there is more room for haemoglobin, so it can carry more oxygen.

3.3 cell → tissue → organ → organ system → organism.