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FREE GCSE Biology Paper 1 Sample Pack

A real taste of the GradeFuel revision system

Inside this free sample:

Revision notes | Flashcards | Exam Booster | Exam-style questions | Answers | Confidence check

Topic focus: Cell Biology

Designed to help you revise actively - not just read and hope it sticks.

1. Sample Revision Notes

Cell Biology - the essentials

Cell structure

Animal and plant cells are eukaryotic: their genetic material is enclosed inside a nucleus. Bacterial cells are prokaryotic and are much smaller; their DNA is not enclosed in a nucleus.

Structure	What you need to know
Nucleus	Contains genetic material and controls the activities of the cell.
Cytoplasm	Where many chemical reactions take place.
Cell membrane	Controls movement of substances into and out of the cell.
Mitochondria	Site of aerobic respiration.
Ribosomes	Site of protein synthesis.
Cell wall	In plant cells; made mainly of cellulose and strengthens the cell.
Chloroplasts	Contain chlorophyll and absorb light for photosynthesis.
Permanent vacuole	Contains cell sap and helps support plant cells.

Microscopy: Magnification = image size / real size. Make sure image size and real size use the same units before calculating.

Exam tip: If a question asks for a function, state what the structure actually does - not just where it is.

2. Active Recall

Can you explain these without looking back?

1. Why are bacterial cells described as prokaryotic?

2. Which organelle is the site of aerobic respiration?

3. What is the role of ribosomes?

4. Which structures are found in plant cells but not animal cells?

5. What equation is used to calculate magnification?

6. Why must units be converted before using the magnification equation?

If you cannot explain an answer clearly, mark it as a revision priority.

3. Sample Flashcards

Cover the answer side and test yourself.

QUESTION What is the function of the nucleus?	**ANSWER** It contains genetic material and controls the cell's activities.
QUESTION Where does aerobic respiration occur?	**ANSWER** In the mitochondria.
QUESTION Where are proteins made?	**ANSWER** At ribosomes.
QUESTION What does the cell membrane do?	**ANSWER** Controls movement of substances into and out of the cell.
QUESTION What is the function of chloroplasts?	**ANSWER** They contain chlorophyll and absorb light for photosynthesis.
QUESTION What is magnification?	**ANSWER** How many times larger the image is than the real object.

4. Exam Booster

Cell Biology - marks are often lost on the small details

Command words matter

State: Give a short factual answer. No long explanation needed.

Describe: Say what happens or identify a pattern. Use data when provided.

Explain: Give a reason - link cause and effect.

Calculate: Show your working, use the correct equation and include units.

Compare: Give a similarity and/or difference using both things named in the question.

Common Cell Biology traps

• Mixing up mitochondria and ribosomes.
• Forgetting that bacteria do not have a nucleus.
• Using different units in magnification calculations.
• Naming a structure when the question asks for its function.
• Giving a description when the question asks you to explain.

Booster rule: underline the command word before you start your answer.

5. Exam-Style Practice

Try these without looking at the answers.

1. Name the organelle where aerobic respiration takes place. *(1 mark)*

2. Give two structures found in a plant cell that are not found in an animal cell. *(2 marks)*

3. Explain why bacterial cells are described as prokaryotic. *(2 marks)*

4. An image of a cell is 45 mm long. The real cell is 0.15 mm long. Calculate the magnification. *(2 marks)*

5. Explain one way the structure of a root hair cell helps it carry out its function. *(2 marks)*

6. A student says: 'A larger cell always has a larger surface-area-to-volume ratio.' Explain why this statement is incorrect. *(3 marks)*

Total: 12 marks

6. Answers & Mark Scheme

Mark it, then fix anything you missed.

1. Mitochondrion / mitochondria. **[1]**

2. Any two: cell wall, chloroplasts, permanent vacuole. **[2]**

3. Their genetic material is not enclosed in a nucleus **[1]**; it is free in the cytoplasm / includes circular DNA **[1]**.

4. 45 / 0.15 = **300x**. **[2]**

5. Example: a root hair cell has a long projection, increasing surface area **[1]**, so water/mineral ions can be absorbed more effectively **[1]**.

6. As a cell gets larger, its volume increases faster than its surface area **[1]**; therefore its surface-area-to-volume ratio becomes smaller **[1]**, not larger **[1]**.

Score guide: 10-12 = strong | 7-9 = nearly there | 0-6 = revisit the topic and try again

7. Confidence Check

Use your score to decide what happens next.

Area	Needs work	Nearly there	Exam ready
Cell structures	[ ]	[ ]	[ ]
Functions of organelles	[ ]	[ ]	[ ]
Prokaryotic vs eukaryotic cells	[ ]	[ ]	[ ]
Magnification calculations	[ ]	[ ]	[ ]
Applying knowledge to exam questions	[ ]	[ ]	[ ]

What to revise next:

My next action:

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