



Haywood
Academy
Inspiring Creativity & Achievement

SCIENCE REVISION – BIOLOGY EXAM 1

CARD #1/36

Topic: Cell Structure – Eukaryotes

What are eukaryotes?

Draw and label a simple example from an animal and a plant.

Animal cells should have 5 labels.

Plant cells should have the same 5, plus 2 extra labels.



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SCIENCE REVISION – BIOLOGY EXAM 1

CARD #2/36

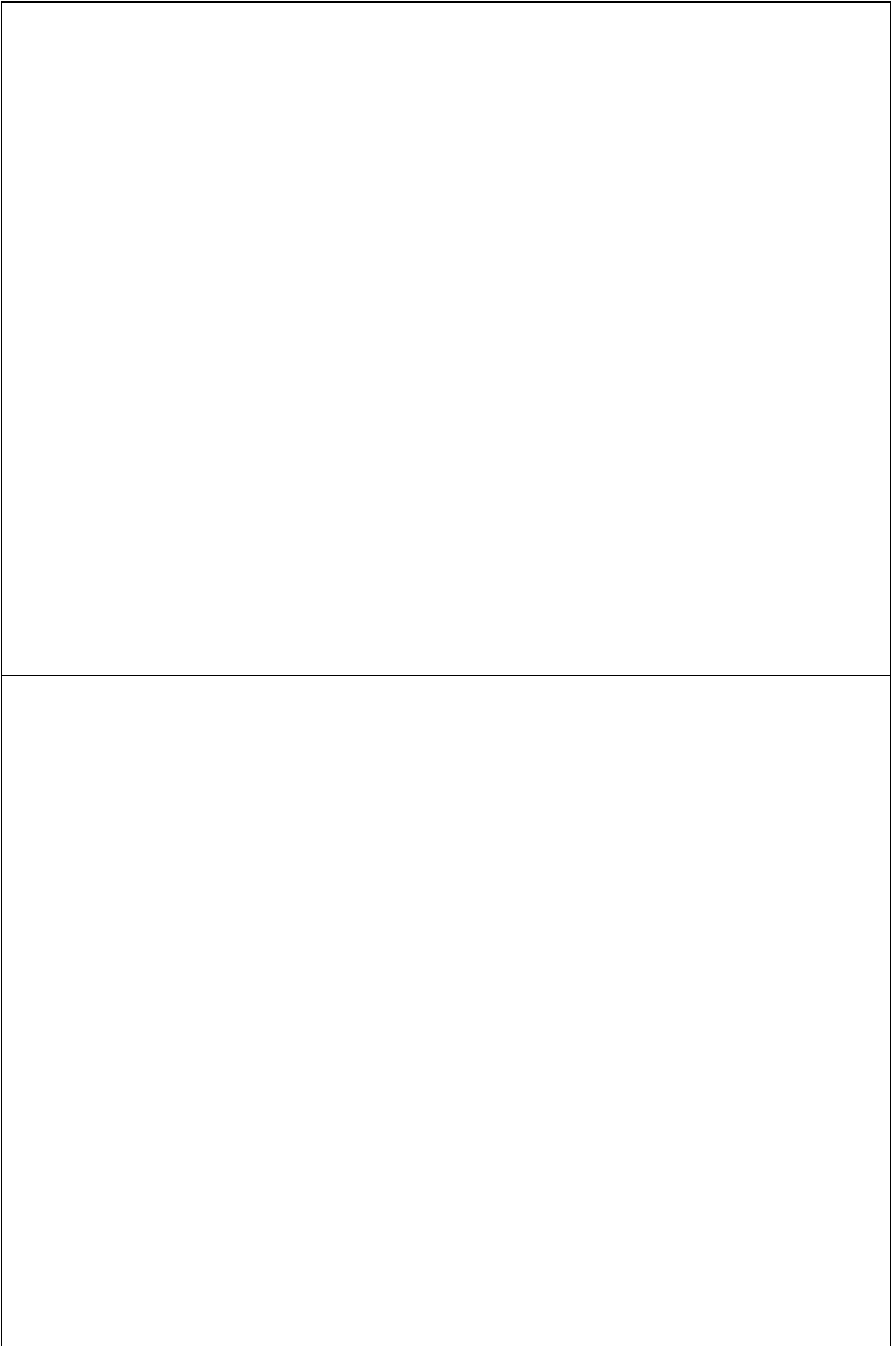
Topic: Cell Structure – Prokaryotes

What are prokaryotes?

Draw and label a simple example.

How does the size of a prokaryote compare to a eukaryote?

Skill: Order of Magnitude Calculations



Topic: Cell Structure – Functions of cell parts

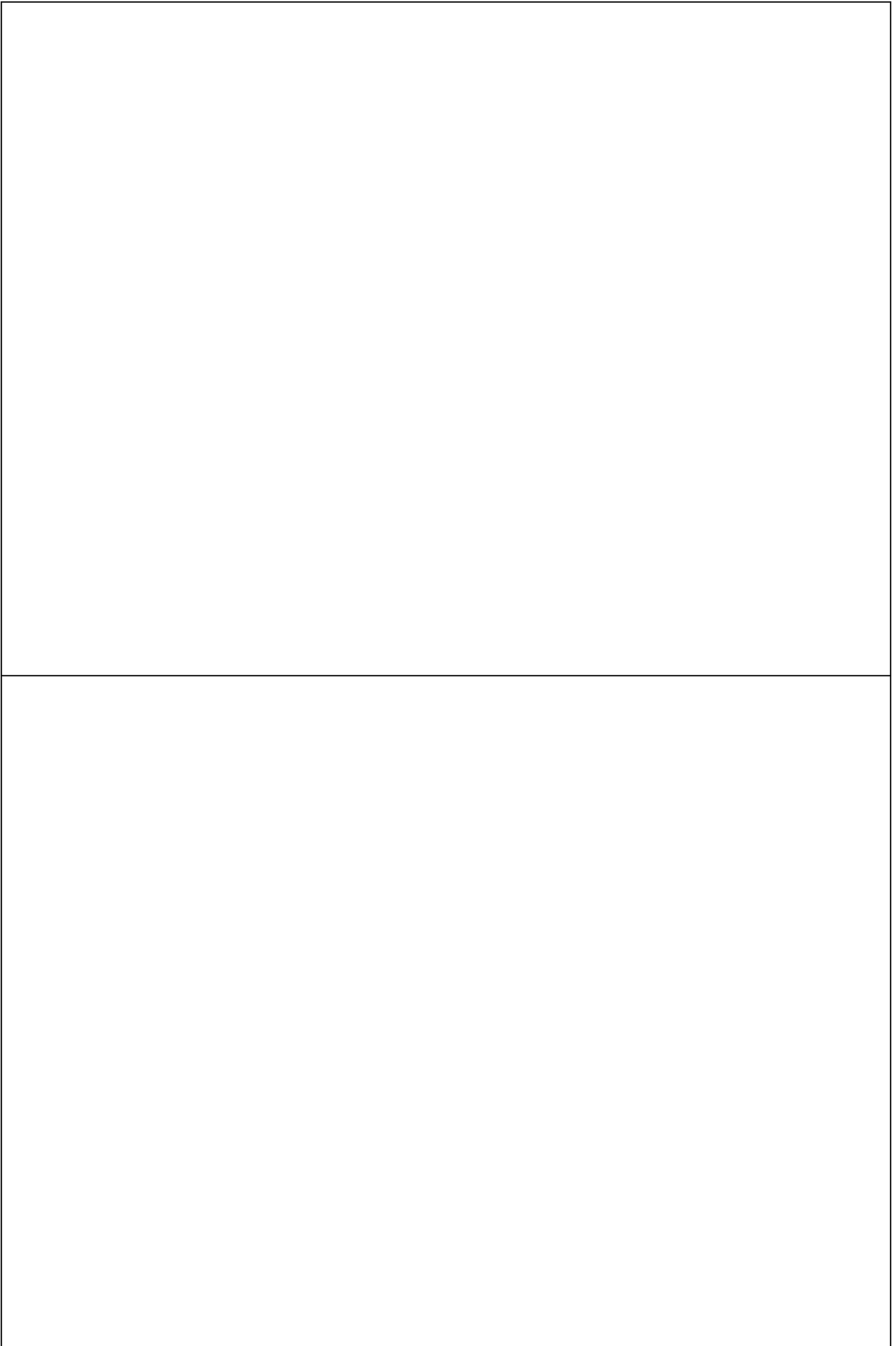
State the function of each of the following cell parts:

| | |
|---------------|--|
| Nucleus | |
| Cytoplasm | |
| Cell Membrane | |
| Mitochondria | |
| Ribosomes | |
| Chloroplast | |
| Vacuole | |
| Cell Wall | |
| Plasmid | |

Topic: Cell Structure – Cell Specialisation

Detail how and why each of these cells are specialised

| | | |
|--------|-----------|--|
| ANIMAL | Sperm | |
| | Nerve | |
| | Muscle | |
| PLANT | Root Hair | |
| | Xylem | |
| | Phloem | |



Topic: Cell Structure - Differentiation

What does differentiation mean?

How is differentiation related to specialised cells?

When can animal cells differentiate?

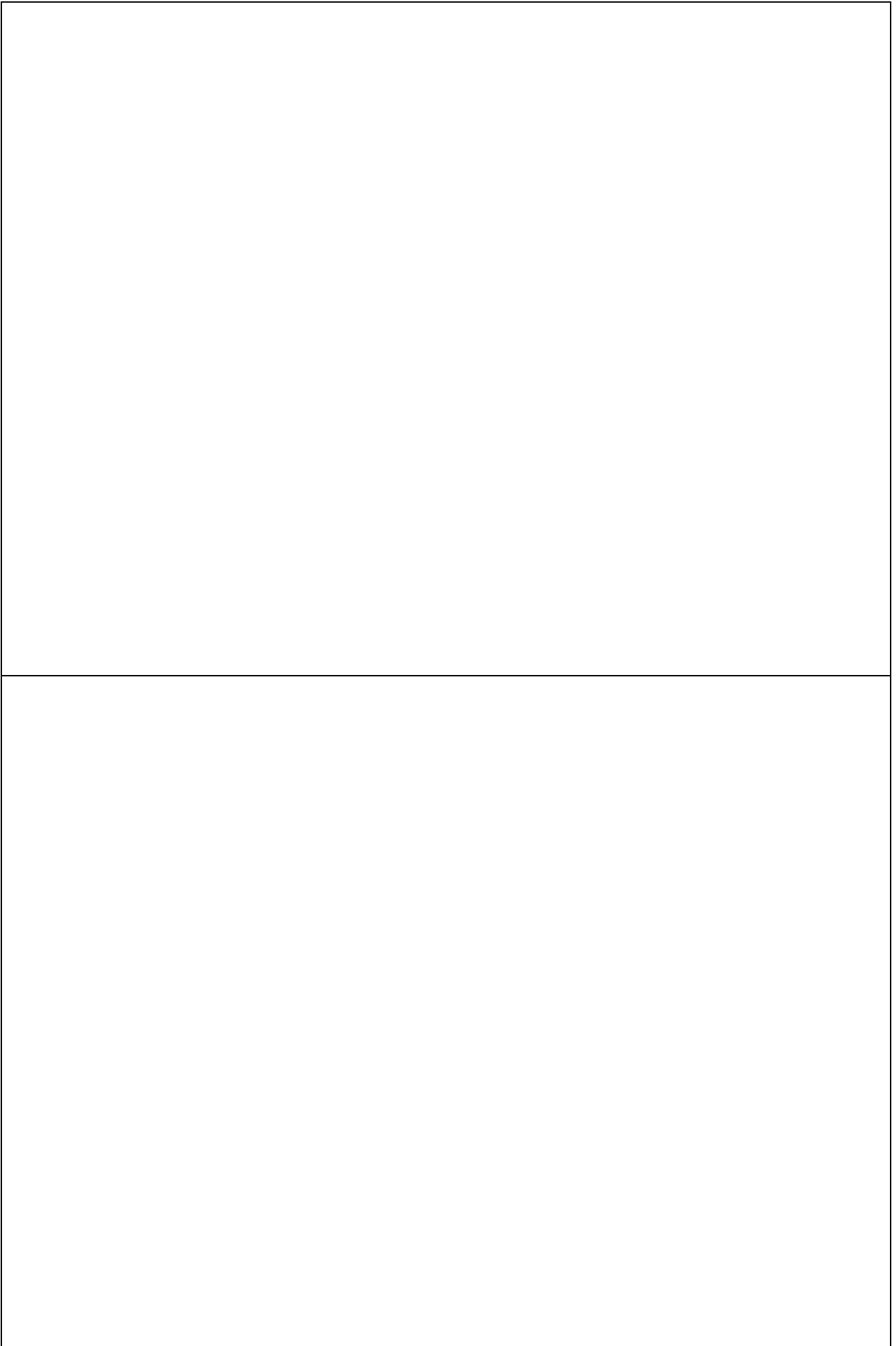
When can plant cells differentiate?

Topic: Cell Structure - Microscopy

Describe the magnification techniques:

- Light microscopy
- Electron microscopy

Which technique has the better magnification and resolving power? Why is this important?



Topic: Cell Division – Cell Cycle and Mitosis

Explain what chromosomes are and where they are found

Describe the 3 different stages of the cell cycle.

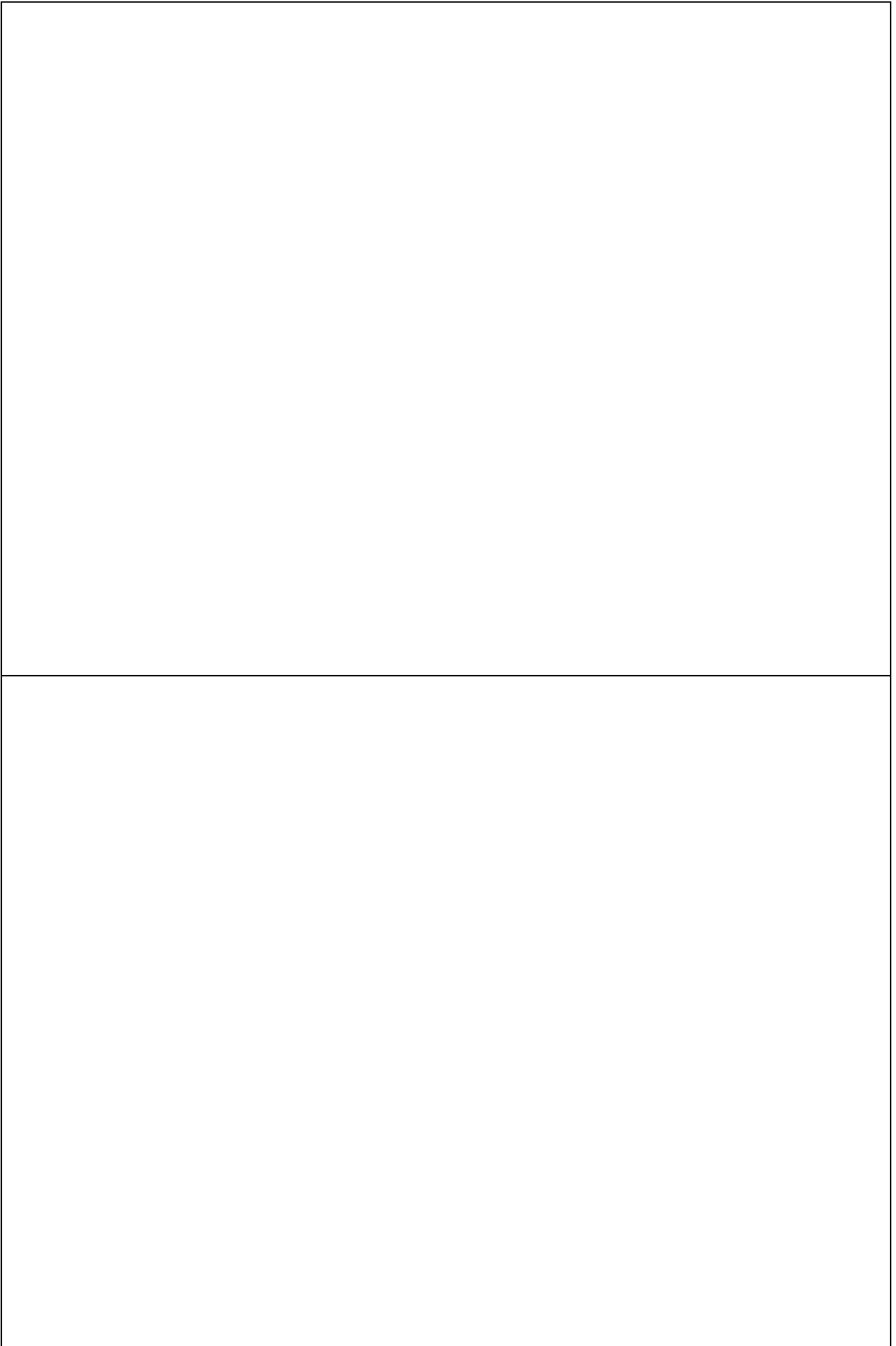
Explain why mitosis is important in multicellular organisms

Topic: Cell Division – Stem Cells

What are stem cells and why are they important in:

- Embryos
- Adult animals
- Meristem tissue in plants

Why are doctors using stem cells in medicine?



Topic: Cell Division – Therapeutic Cloning

What is therapeutic cloning and why is it useful?

What risks with the use of stem cells?

Why do some people object to the use of stem cells?

What are the commercial benefits of stem cells in plants?

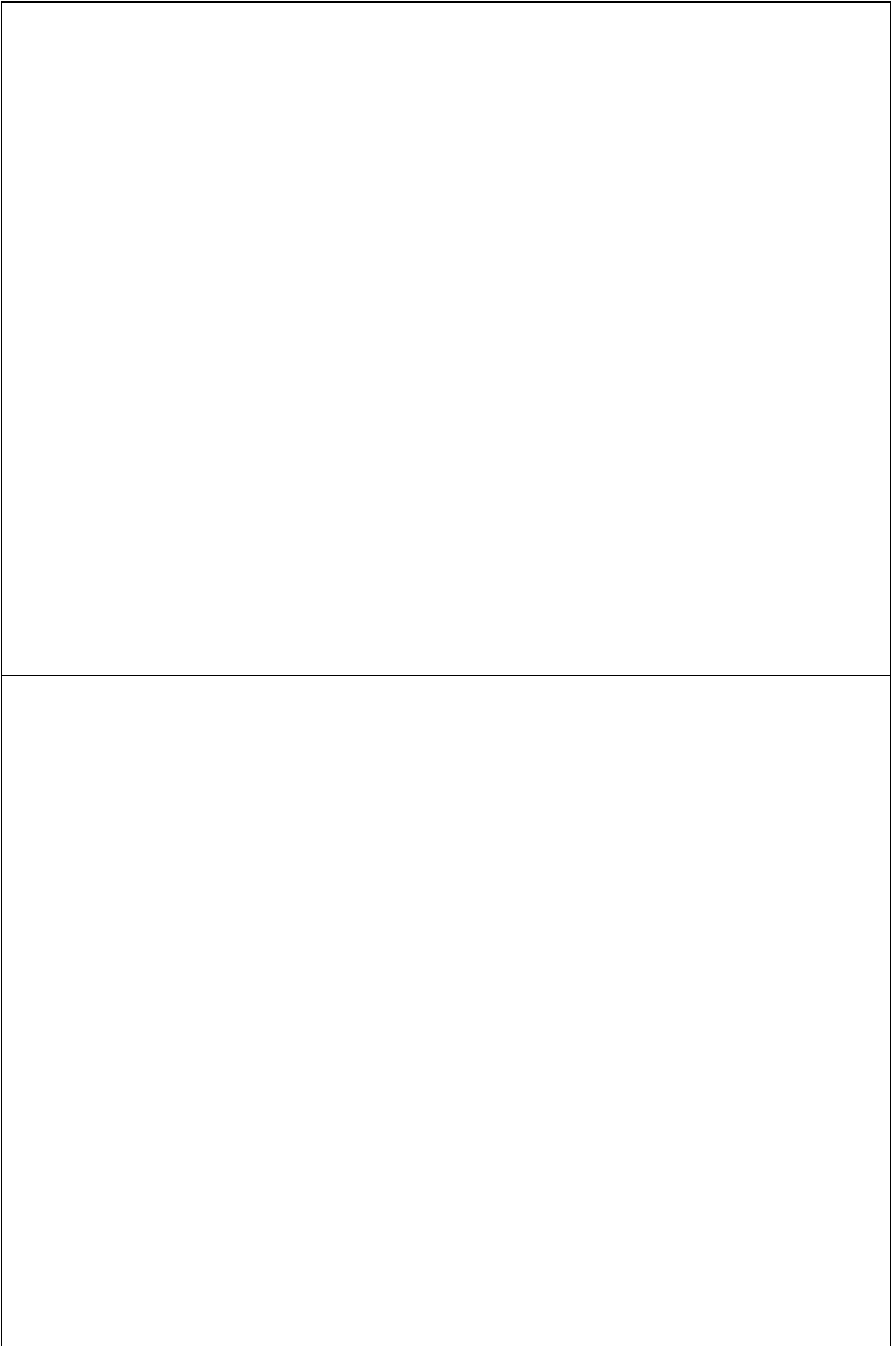
Topic: Transport in Cells - Diffusion

What is diffusion?

What substances move in and out of cells by diffusion?

How do the following factors affect diffusion?

- Concentration gradient
- Temperature
- Surface area of membrane



Topic: Transport in Cells - Osmosis

What is osmosis?

What is the difference between osmosis and diffusion?

Topic: Transport in Cells – Active Transport

What is active transport?

How is active transport different from diffusion?

Give a specific example of active transport working in:

- Plants
- Animals

