Multicellular plants and animals contain many different types of cell. Each type of cell is designed for a particular function.

Here are examples of cells and their functions in tissues:

1. **Ciliated cells** in respiratory tract
   - **Features:** tiny hairs called cilia which can move mucus.
   - **Function:** waft mucus with bacteria and dust away from the lungs.

2. **Muscle cells**
   - **Features:** cells merge together to form fibres that can **contract**.
   - **Function:** cause movement

3. **Red blood cells**
   - **Features:** have no nucleus, contain hemoglobin
   - **Function:** **transport** oxygen around the body
Common misconceptions

Xylem and phloem tissue are often confused. Xylem carries water and mineral salts, while Phloem transports sugars and amino acids. In a vascular bundle in a stem, Phloem is on the outside and Xylem is on the inside.

Examiner's tips

1. You need to be able to give examples of tissues, organs and organ systems in both plants and animals. A leaf is an organ made up of a number of tissues, e.g. upper epidermis, palisade, mesophyll.
2. If you draw a diagram to support an exam answer, make sure you refer to its in your written answer. Annotation is more likely to help you gain extra mark.

Example of annotation

Action of phagocyte
Try this

Figure above shows root hair cells.

1. Explain how the presence of root hair cells on roots enables the efficient absorption of water and minerals. [2 marks]
2. Root hair cells can absorb mineral ions by diffusion and active transport.
   a) Define the term active transport [2 marks]
   b) Explain why respiration rates may increase in root hair cells during the uptake of mineral ions [1 mark]

Answers

1. - Large number of root hair cells give a large surface area to the root.
   - Mitochondria are present to provide energy for active transport.
2. a) active transport is absorption of a substance into a cell or across a membrane
   - against (up) a concentration gradient.
   - using energy
   b) active transport requires energy