

Organisational Structure of an Organism – Year 8 Science: Sample Solutions

1. Name a type of tissue in the human body and describe its function.

Muscle tissue is a type of tissue that helps us move. Skeletal muscle contracts to move bones, allowing us to walk, lift, and run.

2. Why is it more efficient for cells to work together as tissues? Give an example.

When cells of the same type group together, they can perform a specific job more efficiently. For example, nerve cells form nervous tissue, which quickly sends messages through the body.

3. Give an example of a system in an animal and describe what it does.

The circulatory system in humans transports oxygen and nutrients to the body and removes waste like carbon dioxide. It includes the heart, blood, and blood vessels.

4. What does the digestive system do? Name two organs that are part of it and explain what each one does.

The digestive system breaks down food into nutrients the body can use.

- *Stomach: uses acid and enzymes to break food into smaller parts.*
- *Small intestine: absorbs nutrients into the bloodstream for use by the body.*

5. Why is it important for multicellular organisms to have organ systems?

Organ systems allow the organism to perform many functions at once. For example, while the respiratory system brings in oxygen, the muscular system lets us move.

6. What is the advantage of having specialised cells instead of all cells doing everything?

Specialised cells can do their jobs more efficiently. For example, red blood cells carry oxygen, while skin cells protect the body from infection.

7. In your own words, explain how cells, tissues, organs and systems are related.

Cells with similar functions group together to form tissues. For example, many flat epithelial cells form a tissue that makes up the outer layer of the skin. This tissue works as a barrier to protect the body from germs and injury. The skin is an organ, and it is part of the body's defence system, helping to keep harmful microorganisms out. So, cells form tissues, tissues make organs, and organs work together in systems to keep the body safe and working properly.