



CLASS 9 SCIENCE · 2026-27

The cell and tissues

Biology

33

QUESTIONS

30

MINUTES

3

EXERCISES

This belongs to _____ Date _____

WHAT YOU'LL GET GOOD AT

- Names each organelle and states its specific function
- Distinguishes the three simple plant tissues by structure and role
- Distinguishes xylem from phloem in what they carry and which is living
- Names the four animal tissue types with an example of where each is found

Take your time, and have a go at every one. If you get stuck, look at the orange box — Ollie has already done one for you.

The cell and tissues

Biology · 33 questions · tick each box as you finish

Exercise 1 of 3 · 10 questions Name the organelle, and say what it does.



WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

Mitochondria release energy as ATP, and the detail worth adding is that they have their own DNA and ribosomes. That extra clause is what turns a one-mark answer into a two-mark one, and it is a fact the paper asks about directly. In Class 9 biology, the specific detail is nearly always where the second mark lives.

1) Releases energy for the cell and has its own DNA

2) Called the suicide bags of the cell

3) The site of protein synthesis

4) Modifies, packages and stores substances made by the cell

5) Controls what enters and leaves the cell

6) A network of membranes that transports material inside the cell

7) The organelle that contains the chromosomes

8) The fluid-filled space that gives a plant cell its turgidity

9) The rigid outer layer found in plant cells but not animal cells

10) The plastid that stores starch

Exercise 2 of 3 · 11 questions Name the plant tissue and give one place it is found.

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

Collenchyma is the flexibility tissue - living, with corners thickened, found in leaf stalks and young stems. Note that all three simple tissues are best remembered by what they do rather than by what they look like: parenchyma packs, collenchyma bends, sclerenchyma stiffens. A child who has those three verbs can reconstruct the whole comparison table without having learned it.

1) Living, thin-walled packing tissue that fills most of the soft parts of a plant

2) Living tissue with corners thickened, giving flexibility

3) Dead tissue with lignified walls, giving strength and stiffness

4) Carries water and minerals upward, and is mostly made of dead cells

5) Carries food in both directions, and is living except for one component

6) The tissue at the tip of a root or shoot where growth in length happens

7) The tissue that adds girth to a stem, found in the cambium

8) Dead tissue with thick lignified walls, found in the husk of a coconut

9) The outermost protective layer of a leaf, bearing stomata

10) The tissue that stores food in fleshy fruits

11) The tissue that forms cork on an old stem

Exercise 3 of 3 · 12 questions Name the tissue type and give one place it is found in the body.

WRITE THE ANSWER

HERE'S ONE DONE FOR YOU

Ligament connects bone to bone and tendon connects muscle to bone - and these two are swapped more often than anything else in the chapter. The way to keep them apart is the property: a ligament is elastic, because joints need to move; a tendon is strong and much less flexible, because it has to transmit a pull without stretching. The function explains the property, which is what the paper asks about.

1) Covers the surface of the body and lines its internal organs

2) Connects bone to bone

3) Connects muscle to bone

4) A fluid connective tissue

5) Muscle that we control at will

6) Muscle found only in the heart, which never tires

7) Carries messages rapidly from one part of the body to another

8) Muscle found in the walls of the stomach and intestine

9) The tissue that stores fat beneath the skin

10) The tissue that forms the framework of the ear and the nose tip

11) The tissue that lines the kidney tubules

12) The cells that carry oxygen in the blood

**All done? How did that feel?**

Colour in a star. Three stars means you could teach it to someone else.



Tricky · Getting there · Easy now



Answer key

For grown-ups

The cell and tissues · keep this page back until your child has finished.

1. Name the organelle, and say what it does.

- 1) Mitochondria. They release energy in the form of ATP, and they carry their own DNA and ribosomes, which is why they can make some of their own proteins.
- 2) Lysosomes. They contain digestive enzymes that break down worn-out organelles, and can burst to digest the whole cell when it is damaged.
- 3) Ribosomes. They are found free in the cytoplasm and attached to the rough endoplasmic reticulum.
- 4) The Golgi apparatus. It also forms lysosomes and is involved in making complex sugars.
- 5) The plasma membrane. It is selectively permeable, allowing some substances through and not others.
- 6) The endoplasmic reticulum. Rough ER carries ribosomes and makes protein; smooth ER makes fat.
- 7) The nucleus. It controls the cell's activities and carries the information passed to daughter cells.
- 8) The vacuole. Water in it presses out on the cell wall, which keeps the plant firm.
- 9) The cell wall. It is made of cellulose and gives the cell its fixed shape and support.
- 10) The leucoplast. It is a colourless plastid used for storage.

2. Name the plant tissue and give one place it is found.

- 1) Parenchyma - found throughout stems, roots and leaves. When it contains chlorophyll it is called chlorenchyma; with large air spaces in aquatic plants it is aerenchyma, which aids buoyancy.
- 2) Collenchyma - found in the stalks of leaves and just below the epidermis of young stems, letting them bend without breaking.
- 3) Sclerenchyma - found in the husk of a coconut, the stems of many plants, and around vascular bundles.
- 4) Xylem - made of tracheids, vessels, xylem parenchyma and xylem fibres.
- 5) Phloem - made of sieve tubes, companion cells, phloem parenchyma and phloem fibres, of which only the fibres are dead.
- 6) Apical meristem. Lateral meristem increases girth and intercalary meristem is found at the base of leaves or internodes.
- 7) Lateral meristem. It divides to increase the thickness of stems and roots.
- 8) Sclerenchyma. It is dead at maturity and gives hardness and strength.
- 9) Epidermis. It protects the leaf and its stomata control gas exchange and water loss.
- 10) Parenchyma. It is living, thin-walled and used for storage.
- 11) Cork cambium (phellogen). The cork it makes is impermeable and protects the stem.

3. Name the tissue type and give one place it is found in the body.

- 1) Epithelial tissue - found in the skin, the lining of the mouth, the alveoli and the kidney tubules.
- 2) Ligament - a connective tissue that is strong and elastic.
- 3) Tendon - a connective tissue with great strength but limited flexibility.
- 4) Blood - the plasma is the matrix, carrying red cells, white cells and platelets.
- 5) Striated or voluntary muscle - found attached to bones, which is why it is also called skeletal muscle.
- 6) Cardiac muscle - involuntary and rhythmic, contracting and relaxing throughout life without fatigue.
- 7) Nervous tissue, made of neurons - found in the brain, spinal cord and nerves.
- 8) Smooth (unstriated) muscle. It works involuntarily and does not tire quickly.
- 9) Adipose tissue, a connective tissue. It stores fat and acts as an insulator.
- 10) Cartilage, a connective tissue. It is firm but flexible.
- 11) Cuboidal epithelium. It provides mechanical support and takes part in absorption and secretion.
- 12) Red blood cells, part of blood, which is a fluid connective tissue.

WHILE YOUR CHILD WORKS

- Every biology answer here needs a name, a property and a location. Ask for all three.
- Parenchyma packs, collenchyma bends, sclerenchyma stiffens. Three verbs replace a whole comparison table.
- Ligament and tendon get swapped constantly. Bone to bone, muscle to bone - say it twice.

**Spotted a gap while marking?**

A free assessment is one live class with a matched teacher - no card, nothing to cancel. Afterwards you get an honest note on what they noticed.

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