SNC2D1 **Task-Organelle Summary Answers**

Answer each question below in the space provided.
For each organelle that you labelled in the animal cell and plant cell diagrams:

- Indicate if it is found in animal cells only, plant cells only, or both
- Describe its function(s). **Ensure the function is specific and described in detail**. This will require research.

Organelle	Found in Animal cell, Plant cell, or Both	Description (What is it?)	Functions (What does it do?)
cell membrane	both	• a thin layer that surrounds the cell and encloses the cell's contents • made up of a phospholipid bilayer	• separates and protects the cell from its surroundings • keeps some materials out and holds some materials in • allows certain materials to pass through it in order to enter the cell or exit the cell
cell wall	plant cell	• surrounds the cell membrane • is strong and fairly rigid • made up of a network of tough fibres made mainly of cellulose	• gives the plant shape • provides support for the cell • gives the cell strength and structure
cytoplasm	both	• also called the **cytosol** • a jelly-like fluid throughout the cell	• suspends all the organelles in a cell • gives a cell its shape • contains molecules such as enzymes which are responsible for breaking down waste and also aid in metabolic activity.
cytoskeleton	both	• it is a network of various types of protein fibers • it is located where the cytoplasm comes in contact with the cell membrane	• provides a framework for the cell, helping it maintain its shape and structure • provides "tracks" along which organelles and other substances can move • helps allow for cell movement

Nucleus	both	• the organelle that contains DNA • also known as the **information centre** of the cell	• controls the cell's activities which include growth, metabolism, protein synthesis, and reproduction (**cell** division) • contains all the information required to "run" the cell and control its functions
nucleolus	both	• it is a round body found inside the nucleus	• helps in the production of the organelles called *ribosomes*, therefore playing a vital role in the making of proteins in the cell
ribosomes	both	• they are very small organelles • *free ribosomes* float within the cytoplasm • other ribosomes are attached to the endoplasmic reticulum	• build proteins for cell structure and activities necessary for the cell's survival
rough endoplasmic reticulum	both	• a network of tubes and chambers connected to the nucleus • has ribosomes attached to it • appears rough or pebbled	• involved in protein production and packaging
smooth endoplasmic reticulum	both	• network of tubes and chambers • do not have ribosomes attached to it • appears smooth	• produces lipids (fats) and steroids • detoxification of harmful metabolic by-products (toxins) • stores, metabolizes, and releases calcium
Golgi Body	both	• also called **Golgi complex** or **Golgi apparatus** • made up of a stack of flattened pouches or sacs	• processes, stores, sorts, packages, and transports materials, such as proteins and lipids, produced in the cell

Vacuoles	both	• a fluid-filled pocket • One large one in plant cells and many small ones in animal cells	• Store macromolecules, such as proteins, and ions, such as potassium and chloride • Helps keep the plant cell firm • Serves as a disposal site for substances that could harm the cell • May contain coloured substances that attract pollinating insects • May contain substances that are harmful or bad-tasting to animals
lysosomes	both	• containers, or sacs, surrounded by membrane • contain enzymes • made in the Golgi body	• Digest or break down - engulfed bacteria or viruses - food particles (cell's "digestion") - macromolecules - excess or worn out organelles
mitochondria	both	• made up of a smooth outer membrane and an inner membrane that has many folds • also known as the **powerhouse** of the cell	• carry out a series of chemical reactions known as ***cellular respiration*** which produces energy that animal and plant cells need to carry out their functions
chloroplasts	plant cell	• oval-shaped organelle • contain a pigment called *chlorophyll* that gives plants their green colour	• trap energy from the Sun to make glucose sugar in the process known as ***photosynthesis***
centrioles	animal cell	• made of protein strand called *microtubules* that are arranged in a cylinder	• develop spindle fibers that are required during cell division
vesicles	both	• are small spherical compartments	• store materials • transport materials inside the cell • sometimes help these materials cross the membrane to enter or exit the cell

Put a check in the appropriate column(s) to indicate whether the following organelles are in found in plant cells, animal cells, or both.

Organelle	Plant Cells	Animal Cells
Cell Wall	√	
Vesicle	√	√
Chloroplast	√	
Centriole		√
Cytoplasm	√	√
Cytoskeleton	√	√
Endoplasmic reticulum	√	√
Golgi body	√	√

Organelle	Plant Cells	Animal Cells
Mitochondria	√	√
Nucleolus	√	√
Nucleus	√	√
Cell membrane	√	√
Central vacuole	√	
Ribosome	√	√
Vacuoles		√
Lysosome	√	√