

Salahaddin University-Erbil

College of Education

Department of Biology

Theoretical plant anatomy

Question Bank

Q/ Name each of the following structures or tissues:

- 1- Are the products of cell metabolism, appearing and disappearing at various stages of cell's life-cycle.
 - 2- Nitrogenous compounds, insoluble in water, found in storage organs of plants such as seeds and bark.
 - 3- Single layered of small cell found in outer region of plant part which divides only anticlinally, forms the epidermis and leaf primordia.
 - 4- Type of stomata location where the stomata found only on the lower surface of the leaf.
 - 5- Cells scattered in radicles and seedlings of several plant species, convert the glucosinolates into toxic compounds against the pest.
 - 6- A product of metabolism in peroxisomes which is harmful to the cell.
 - 7- A collenchyma tissue type when the thickenings are present on the walls that faces to the intercellular spaces.
 - 8- Type of fiber obtained from the leaves of monocotyledon plants used for twine.
 - 9- Type of parenchyma has large vacuole store carbohydrate, oil and protein.
 - 10- A sclereid found in the legume seed coat, responsible for restricting water uptake by hard-seeded.
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Q/ A- Draw with labeling the Plasma membrane.

Q/ B- Write the origin of:

- 1- Vascular cambium
 - 2- Rhizodermis
 - 3- leaves lamina
 - 4- Primary meristems
 - 5- Root cap
 - 6- Primary xylem
 - 7- Parenchyma tissue in mesophyll layer of leaf
 - 8- Scleride.
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Q / Write the:

1- Functions of Parenchyma tissues.

2-Characters of Meristematic tissues.

Q/ Fill the blanks with missing words:

- 1-The opening -----joins the pit with the cell cavity.
 - 2-The type of fiber that present in the cortex region of a plant part which support the younger parts called -----.
 - 3-The theory ----- for shoot and root apexs is applicable only to some higher algae.
 - 4-When the starch grain contain one hilum is called -----.
 - 5-The epidermis multilayered called -----.
 - 6- The Ions are pumped into the vacuole for -----.
 - 7- The waxy cuticle protects against -----.
 - 8- The Motor cells are large ----- found on the surface of leaves in some monocotyledon plants, they control the process of -----.
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Q - Compare between Apical and lateral meristems.

Q/ Name each of the following structures or tissues:

- 1- It is a single, membrane-bound vesicle containing a fine, granular matrix. The membrane consists of lipids and proteins, a condensed crystalline core is observed in the center of the organelle.
- 2- A large and central cavity in plant cells, makes up to 90% or more of the cell volume.
- 3- Its protein materials, the grain composed of crystalloide and amorphous proteins. This grains exist in Castor seed.
- 4- An organic catalyts in the protoplasm, capable of breaking down complex food materials into simpler ones.
- 5- A type of plant tissue that plays an important role in the growth and development of plants.
- 6- An outgrowths cell with different shape, structure and function, can be singular or multicellular.
- 7- Type of meristematic tissue divide in all planes and plays an important role in the development of endosperm.
- 8- Type of fiber occur in the primary and secondary phloem of vascular plant tissues also called

bast fibers.

9-A non-living, small, or rounded sclereids, made of thick secondary cell wall and the inner portion of it called lumen.

10-Type of parenchyma tissue present in aquatic plants, contain large intercellular spaces connected together to form larger air cavities.

Q/ Draw with labeling the Mitochondria.

Q/Write the origin of:

- 1-Promeristems 2- primary permanent tissues 3- Pericycle 4- stele
5- Xylem and phloem Parenchyma 6- epidermis tissue.

Q/ Write:

1-(5) Functions of Parenchyma tissues.

2-Characters of Sclerenchyma tissues.

Q/ Fill the blanks with missing words:

- 1-The Mitochondria found in all -----, have their own ----- and -----.
- 2-The calcium oxalate crystals formed in the cell as a result of ----- absorbed from the soil and ----- produced during metabolic process.
- 3-The stomata that located on the both side of the leaf known as -----.
- 4- The rarest collenchyma type where the cell walls uniformly thickened called -----.
- 5-The type of xylary fiber with thickened cell wall and simple pit called-----.
- 6- The-----is a hollow area where the secondary layers of the cell wall are absent.
- 7- The simple permanent tissue known as ----- tissues and they made up of ----- type.

Q /Define the:

- 1- Angular collenchyma**
2- Lipids

Q/ Write the:

1- Structures of Secondary cell wall:

2-Functions of Endoplasmic reticulum:

3-Missing words:

The----- is a structure of plasma membrane composed of 4 fused carbon rings that found in the core of this membrane and the cytoskeleton consist of-----
-which essentially have ----- of proteins and about ----- in diameter that provide the cell shape -and the space between the nuclear envelope called -----
----- but the small subunit of ribosome reads the ----- and the peroxisomes contain ----- converting the -----to water

Q/- Draw with labeling the chloroplast.

Q/ -Compare between:

- 1- Etioplasts and Proplastids.
- 2-Unilaterally compound pitting and blind pit.

Q3: Write and draw the steps of cell wall formation.

Q/ Write the:

- 1- Structures of **Primary cell wall.**
- 2-Functions of **Plasma membrane:**
- 3-Types of pit pairs

Q/- Draw with labeling the Nucleus.

Q/- Compare between:

- 1- Simple and Ramiform Pits.
- 2- Proteins and Carbohydrate structures in Plasma membrane.

Q: Write the types of plastids and mention the functions of each type.