Questions for the final lesson: "Plant cell"

1. The structure of the microscope. Rules for working with a microscope.

2. A method for preparing temporary microslide.

3. Qualitative reactions to substances contained in the plant cell.

4. The structure of the prokaryotic cell.

5. The main differences between the cells of animals, fungi and plants.

6. The structure of the plant cell. Protoplast:

6.1. Cytoplasm. Chemical composition and physical condition. Functions of the cytoplasm. The movement of the cytoplasm. Hyaloplasm. Endoplasmic reticulum. The structure of the elementary membrane. Plasmalemma and tonoplast.

6.2. Organoids.

a) Structure and functions of the Golgi complex, ribosomes, lysosomes, microtubules.

b) Mitochondria. Structure, functions, role in energy processes.

c) Plastids. Types, structure and functions of plastids. Plastid pigments. The origin of plastids. Transformation of some plastids into others.

6.3. The nucleus, its structure and main functions.

7. Protoplast derivatives:

7.1. The cell wall. Chemical composition. Molecular organization of the cell wall. Its primary and secondary structure. Subsequent changes in the cell wall (lignification, suberinisation, cutication). Pore types and their meaning. Plasmodesmus. Cystolites.

7.2. Vacuole. Formation of vacuoles during cell growth and development. Cell juice and its composition. Functions of the vacuole. The phenomenon of adsorption, osmotic pressure. The phenomenon of plasmolysis.

7.3. Ergastic substances. Their role in the vital activity of the cell.

7.4. Spare nutrients. Their localization in the cell. Reactions that can be used to determine the availability of spare nutrients.

7.5. Secretory substances. Their importance in the life of the plant.

7.6. Cellular inclusions. Types, location in a cell, functions. Their significance for the study of botany.