

QUESTION

1. The following diagram shows the structure of a cell wall. The cell wall is made of cellulose, which is a polysaccharide. The cellulose molecules are arranged in a regular, repeating pattern, forming a mesh-like structure. This structure is responsible for the strength and rigidity of the cell wall.

2. The diagram also shows the presence of lignin, a complex organic polymer that is deposited in the cell wall. Lignin acts as a glue, binding the cellulose fibers together and providing additional strength and rigidity to the cell wall.

3. The overall structure of the cell wall is highly organized and provides a barrier against mechanical stress and environmental factors. This structure is essential for the survival and growth of plant cells.



4. The diagram illustrates the hierarchical organization of the cell wall. At the molecular level, cellulose and lignin are the primary components. These molecules assemble into fibers and microfibrils, which then form a complex, interconnected network that constitutes the cell wall. This network is responsible for the cell wall's mechanical properties and its ability to withstand various stresses.