1. A plant's stem is unable to provide adequate mechanical support, causing it to droop, even though it is well-hydrated. Which simple permanent tissue is most likely deficient or poorly developed?
2. How does the presence of a nerve cell's long axon facilitate its function in the body?
3. Explain the functional difference between a tendon and a ligament.
4. Identify the tissue that provides flexibility in areas like the tip of the nose and the outer ear.
5. Explain why sclerenchyma tissue provides hardness and stiffness to plants.
6. Why is blood considered a connective tissue despite its fluid nature?
7. How does the structure of a neuron (dendrites, cell body, axon) facilitate its overall function?
8. Why do mature sclerenchyma cells often lack protoplasm?
9. A person suffers a spinal cord injury, leading to paralysis. Which type of tissue's function is most directly impaired, preventing communication between the brain and muscles?
10. Describe the role of companion cells in the function of phloem.
11. During autumn, leaves of deciduous trees change color and eventually fall off. Which plant tissue facilitates the separation of leaves from the stem?
12. Which type of muscular tissue is characterized by involuntary control, striations, and branched fibers, and is essential for circulating blood?
13. Which plant tissue is primarily responsible for storage of food and sometimes performs photosynthesis if it contains chloroplasts?
14. What would be the likely consequence for a plant if its phloem sieve tube elements were to lose their companion cells?
15. A student observes a plant tissue under a microscope. The cells are living, elongated, and irregularly thickened at the corners, providing flexibility but little rigidity. Which tissue is being observed?
16. What is the primary role of the cambium ring in dicot stems?
17. Which of the following is not a component of phloem tissue?
18. What is the significance of the presence of nodes in monocot stems concerning intercalary meristems?
19. Which type of connective tissue contains large numbers of elastic fibres and is found in the walls of large arteries?
20. Why are meristematic cells typically small, have dense cytoplasm, prominent nuclei, and lack vacuoles?