Adaptation in Aquatic Plants

A. Multiple Choice Questions (MCQs):

1. Which of the following is an adaptation found in floating aquatic plants?

A) Thick, woody stems
B) Light, spongy leaves
C) Deep roots in the soil
D) Needle-like leaves

2. How do underwater plants like Hydrilla take in carbon dioxide?

A) Through their roots
B) Through stomata on leaves
C) Directly from water through their surface
D) They do not require carbon dioxide

3. Why do lotus leaves have a waxy coating?

A) To absorb more water
B) To make the leaves heavy
C) To prevent water from sticking to the surface
D) To help the leaves sink underwater

B. Fill in the Blanks:

1. Aquatic plants that float on water have _____ stems to help them stay on the surface.
2. Plants like _____ have their roots fixed in the soil but their leaves float on water.
3. Submerged aquatic plants take in oxygen from the water through their _____.

C. Case Study:

A group of students visited a pond for a science project to study different aquatic plants. They observed three types of plants:

- **Plant A:** Had broad, flat leaves that floated on the water surface.
- **Plant B:** Had long, thin leaves fully submerged in water.
- **Plant C:** Had thick, waxy leaves and was partially submerged with strong roots in the mud.

After their observations, they recorded the following findings:

- **Plant A** had hollow stems and large air spaces.
- **Plant B** absorbed gases directly from water and had no stomata.
- **Plant C** had strong stems to withstand water flow.

Case Study Questions:

1. Which type of aquatic plant is Plant A, and how do its adaptations help it survive?
2. Why does Plant B not have stomata like land plants?
3. How do strong stems help Plant C survive in moving water?
4. Based on this study, explain why different aquatic plants have different adaptations.

D. Short Answer Questions:

1. Why do floating aquatic plants have hollow stems?
2. How do submerged plants take in oxygen?
3. What are some adaptations of lotus that help it survive in water?

E. Long Answer Questions:

1. Explain how different types of aquatic plants are adapted to live in water.
2. How do floating, submerged, and fixed aquatic plants differ in their adaptations?
3. Why do aquatic plants have special features that are different from land plants?