Solute, Solvent and Solution

A. Choose the Correct Answer:

1. What is a solute in a solution?

A) The substance that dissolves in a liquid
B) The liquid in which a substance dissolves
C) A solid that does not dissolve in water
D) A gas that forms bubbles in water

2. Which of the following is an example of a solvent?

A) Sugar
B) Water
C) Salt
D) Sand

3. When sugar is mixed in water, what is formed?

A) A gas
B) A solution
C) A solid
D) A suspension

B. Fill in the Blanks:

1. A _____ is a liquid that dissolves a solute to form a solution.
2. In a saltwater solution, _____ is the solute and _____ is the solvent.
3. A solution is formed when a solute _____ completely in a solvent.

C. Case Study:

Rohan and Meera were conducting an experiment in their school lab. They took three glasses of water and added different substances:

- **Glass 1:** They added sugar, stirred, and saw that it dissolved completely.
- **Glass 2:** They added sand, but it did not dissolve.
- **Glass 3:** They added salt, and it also dissolved completely.

Their teacher asked them to observe and conclude which mixtures were solutions and which were not.

Case Study Questions:

1. Which glasses contained true solutions?

2. Why did the sand not dissolve in water?
3. What conclusion can you draw about the properties of a solution?
4. Why do some substances dissolve in water while others do not?

D. Short Answer Questions:

1. What is a solution?
2. Give two examples of solutes and solvents used in daily life.
3. What happens when too much solute is added to a solvent?

E. Long Answer Questions:

1. Explain the difference between solute, solvent, and solution with examples.
2. Describe how a solution is formed and what factors affect the solubility of a substance.
3. Why is water called the "universal solvent"? Give examples of substances that dissolve in water and some that do not.