Educonclave

**Science (Class V)**

**The Amazing World of Solutes, Solvents, and Solutions (Objective)**

1. In a solution of salt water, salt is the:
   a) Solvent
   b) Solute
   c) Residue
   d) Concentrate

2. The substance that dissolves another substance is called:
   a) Solute
   b) Solvent
   c) Solution
   d) Liquid

3. Which of the following is a common solvent?
   a) Oil
   b) Water
   c) Plastic
   d) Salt

4. Sugar in tea is an example of:
   a) Solute
   b) Solvent
   c) Solution
   d) Residue

5. A solution that cannot dissolve more solute is:
   a) Unsaturated
   b) Saturated
   c) Dilute
   d) Concentrated

6. Which type of solution has more solvent and less solute?
   a) Saturated
   b) Concentrated
   c) Dilute
   d) Solid

7. What is called the **universal solvent**?
   a) Milk
   b) Water
   c) Alcohol
   d) Oil

8. The even spreading of solute in a solvent is called:
   a) Concentration
   b) Distribution

c) Saturation
d) Diffusion

**9.** Which of the following is NOT a way to increase solubility?
a) Stirring
b) Cooling
c) Heating
d) Crushing solute

**10.** Strong lemon juice is an example of:
a) Dilute solution
b) Concentrated solution
c) Saturated solution
d) Unsaturated solution

**11.** Salt and water together form a:
a) Solvent
b) Solute
c) Solution
d) Gas

**12.** In chocolate milk, chocolate powder is the:
a) Solute
b) Solvent
c) Solution
d) Concentrate

**13.** Which solution is evenly mixed and clear?
a) Mud in water
b) Salt in water
c) Oil in water
d) Sand in water

**14.** Juice with few drops of syrup in water is:
a) Concentrated
b) Dilute
c) Saturated
d) Solid

**15.** Which factor increases solubility the fastest?
a) Cooling the solvent
b) Stirring and heating together
c) Keeping it still
d) Freezing the mixture

**16.** Soap water used for cleaning is a:
a) Solvent only

b) Solution
c) Solute
d) Gas

**17.** Which type of solution has more solute and less solvent?
a) Dilute
b) Unsaturated
c) Concentrated
d) Saturated

**18.** An example of a saturated solution is:
a) Tea with little sugar
b) Salt water with extra salt settled at the bottom
c) Milkshake
d) Lemonade with little lemon

**19.** What happens when a solute is crushed before adding to a solvent?
a) Dissolves faster
b) Dissolves slower
c) No change
d) Forms a residue

**20.** Which property makes water useful in cooking, cleaning, and medicine?
a) It is hot
b) It is a universal solvent
c) It has taste
d) It is heavy

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**Assertion–Reason Questions**

Options:
A. Both A and R are true, and R explains A
B. Both A and R are true, but R is not the correct explanation
C. A is true, R is false
D. A is false, R is true

**21.** **A:** Water is called the universal solvent.
**R:** It can dissolve more substances than any other liquid.

**22.** **A:** A saturated solution can dissolve more solute.
**R:** Solute particles are still evenly distributed.

**23.** **A:** Heating increases solubility.
**R:** Heat increases movement of solvent particles.

24. **A:** Stirring speeds up dissolving.
    **R:** It helps solute particles spread evenly.

25. **A:** A concentrated solution has more solvent than solute.
    **R:** The solute is present in a small amount.

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**Case Study-Based Questions**

**Case Study 1: Lemon Juice Preparation**

Ravi prepared lemon juice by adding sugar to water, stirring, and then adding lemon juice. He noticed sugar dissolved faster in warm water.

**a)** Which was the solute in the drink?

**b)** Which was the solvent?

**c)** Why did sugar dissolve faster in warm water?

**d)** What type of solution was formed if little sugar was added?

**Case Study 2: Salty Soup**

Neha accidentally added too much salt to her soup, making it very salty.

**a)** What type of solution was the soup?

**b)** Could more salt dissolve in it? Why/Why not?

**c)** Suggest one way to make the soup taste less salty.

**d)** Is this change physical or chemical?