Worksheet: The Amazing World of Solutes, Solvents, and Solutions

NIOS · Class 8 · Science · 8 questions · 12 marks

Name: _____	Date: _____	Score: _____ / 12

Q1. Chashni for gulab jamun is a large amount of sugar dissolved in a small amount of water. Which is the solvent? *[1 mark]*

A) Whichever is present in the larger amount

B) Water

C) Sugar

D) Neither — it is not a solution

Q2. A saturated salt solution at 20 °C is heated to 50 °C. What happens? *[1 mark]*

A) The dissolved salt comes out of solution

B) It remains saturated and cannot dissolve any more salt

C) The solution stops being a mixture

D) It behaves as an unsaturated solution and can dissolve more salt

Q3. Which solution is more concentrated: 2 spoons of salt in 100 mL of water, or 4 spoons of salt in 50 mL of water? *[1 mark]*

A) 4 spoons in 50 mL

B) Cannot be compared without knowing the temperature

C) 2 spoons in 100 mL

D) Both are equally concentrated

Q4. Assertion (A): Cold water supports aquatic life better than warm water, all else being equal. Reason (R): The solubility of gases in a liquid generally decreases as temperature increases. *[1 mark]*

A) A is false but R is true

B) A is true but R is false

C) Both A and R are true, and R is the correct explanation of A

D) Both A and R are true, but R is not the correct explanation of A

Q5. An object has a mass of 200 g and a volume of 40 cm³. Another has a mass of 240 g and a volume of 60 cm³. Which is denser? *[1 mark]*

A) The second, since it has the greater volume

B) The second, since it has the greater mass

C) Both have the same density

D) The first (5 g/cm³ against 4 g/cm³)

Q6. Explain why an unpeeled orange floats while a peeled one sinks, even though the flesh has not changed. *[3 marks]*

Q7. A block of modelling clay is moulded into a compact cube and then flattened into a thin sheet, without adding or removing any clay. What happens to its density? *[1 mark]*

A) It increases, since the sheet is wider

B) It stays exactly the same

C) It cannot be determined without weighing the sheet

D) It decreases, since the sheet is thinner

Q8. A test tube of water sealed with a narrow glass tube is placed in a beaker of hot water. The water level in the glass tube rises. Explain what has happened to the density of the water and why the narrow tube is used. *[3 marks]*