



INDIAN SCHOOL AL WADI AL KABIR

Class: IX	Department: SCIENCE	Date : 06.09.2020
Worksheet No: 02 With answers	CHAPTER: IS MATTER AROUND US PURE	Note: A4 FILE FORMAT
Name of the student:	Class & Sec:	Roll No:

MULTIPLE CHOICE QUESTIONS (1 MARK)

1. Two substances A and B when bought together form a substance C with the evolution of heat. The properties of C are entirely different from those of A and B. the substance C is:
- A compound
 - An element
 - A mixture
 - None of the above

Ans-a) A compound

2. Which of the following is an example of a homogeneous substance?
- Granite
 - Copper sulphate
 - Salt and sand
 - Muddy water

Ans-b) Copper sulphate

3. Tincture of iodine has antiseptic properties.

This solution is made by dissolving

- Iodine in potassium iodide
- Iodine in Vaseline
- Iodine in water
- Iodine in alcohol

Ans-d) Iodine in alcohol

4. What is the name of the metal which exists in liquid state at room temperature?

- (a) Sodium (b) Potassium (c) Mercury (d) Bromine

Ans-(c) Mercury

5. In sugar solution,

- Sugar is solute, water is solvent
- Sugar is solvent, water is solute
- Both are solutes
- Both are solvents.

Ans -a) Sugar is solute, water is solvent

ASSERTION REASON TYPE QUESTIONS (I MARK)

For the following questions, two statements are given- one labelled *Assertion* (A) and the other labelled *Reason* (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- i) Both A and R are true and R is the correct explanation of the assertion.
- ii) Both A and R are true but R is not the correct explanation of the assertion.
- iii) A is true but R is false.
- iv) A is false but R is true.

6. Assertion: Elements and compounds are pure substances.

Reason: Properties of compounds are different from those of its constituent elements.

Ans- ii)

7. Assertion: A solution can scatter a beam of light passing through it.

Reason: The particles of solution are smaller than 1nm in diameter.

Ans- iv)

I MARK QUESTIONS (OBJECTIVE TYPE QUESTIONS)

8. Give an example of solid in liquid solution.

Ans – A solution of sugar and water.

9. Give an example of a gas in liquid solution.

Ans- Aerated drinks like soda water.

10. Define concentration of a solution.

Ans-It indicates the exact amount of solute dissolved in an exact amount of solvent or solution.

11. How can we say that sugar is a pure substance whereas milk is not?

Ans- Sugar is a pure substance because it cannot be separated and is formed of only single type molecule. In the case of milk, it can be separated by physical process into components. It has components like water, fat, proteins etc.

12. Name the three categories in which elements can be normally divided.

Ans- Metals, Non-metals, metalloids.

3MARKS QUESTIONS

13. Is air a mixture or a compound? State three reasons in support of your answer.

Ans- Air is a mixture

- 1. Air can be separated into its constituents like oxygen, nitrogen etc. by the physical process of fractional distillation.
- 2. Air shows the properties of all the gases present in it.
- 3. Air has a variable composition.

14. Write one point of difference between concentration and solubility.

What is the effect of temperature on the rate of solubility ?

Ans-(i) Concentration of solution is the amount of solute present in a given amount of solution or the amount of solute dissolved in a given mass or volume of the

solvent.

Solubility is the maximum amount of solute that can be dissolved in a given solution at a given temperature.

(ii) The rate of solubility increases with increase in temperature.

15. Identify the dispersed phase and dispersing medium in the following colloids.

- (a) Fog
- (b) Cheese
- (c) Coloured gemstone

Answer:

- (a) Fog—liquid, gas
- (b) Cheese—liquid, solid
- (c) Coloured gemstone—solid, solid

16. Describe any three properties of colloid.

Answer:

- It is a heterogeneous mixture.
- Size of particles is too small to be seen by naked eye.
- They scatter light passing through them making its path visible.
- They do not settle down when left undisturbed.
- They cannot be separated by the process of filtration, (any three points)

17. Classify the following into metals, non-metals and metalloids:

- (i) Germanium
- (ii) Boron
- (iii) Diamond
- (iv) Iodine
- (v) Copper
- (vi) Helium.

Answer:

Metal – Copper

Non-metals – Diamond, iodine and helium

Metalloids – Germanium, boron.

5MARKS QUESTIONS

18. Rahul and Manav each were given a mixture of iron fillings and Sulphur powder.

Rahul heated the mixture strongly and a new substance was formed. Write three points of difference between the two.

Ans. Rahul has a compound, Manav has a mixture.

	Compound	Mixture
(i)	Elements react to form a compound.	Elements or compounds get mixed together.
(ii)	Fixed composition.	Variable composition.
(iii)	Totally different properties	Shows properties of constituent substances.

19. Three students A, B and C prepared mixtures using chalk powder, common salt and milk respectively in water. Whose mixture:
- (i) would not leave residue on filter paper after filtration?
 - (ii) would show Tyndall effect?
 - (iii) would give transparent/clear solution?
 - (iv) would settle down at the bottom when left undisturbed?
 - (v) could be filtered by filter paper?

Answer:

- (i) Mixture of common salt and water. Mixture of milk and water.
- (ii) Mixtures of chalk powder with water and milk with water.
- (iii) Mixture of common salt and water.
- (iv) Mixture of chalk powder and water.
- (v) Mixture of chalk powder and water.

20. Classify the following into elements, compounds and mixtures.

- (i) Pure sand
- (ii) Air
- (iii) Ammonia gas
- (iv) Ice
- (v) Glass
- (vi) CaO.

Answer:

Elements – Nil

Compounds – Pure sand, Ice, CaO, Ammonia gas

Mixture – Air, Glass.

21. Three students A, B and C prepared mixtures using chalk powder, common salt and milk respectively in water. Whose mixture:

- a) Would not leave residue on filter paper after filtration?
- b) Would show Tyndall effect?
- c) Would give transparent/ clear solution?
- d) Would settle down at the bottom when left undisturbed?
- e) Could be filtered by filter paper?

Answer

- a) Mixture done by B will not leave any residue as salt solution is a true solution.
- b) Tyndall effect will be shown by milk solution of C. It's a colloidal solution. So, it shows tyndall effect.
- c) Salt solution will obviously be the clear solution. So, again its B.
- d) Chalk powder, mixture of A will settle down when left undisturbed.
- e) Again, Chalk powder of A can be filtered by filter paper. Although, it is possible to filter milk solution of C also, if sufficiently micro-porous filter is used.

PREVIOUS YEAR QUESTIONS

22. A solution is prepared by adding 40 g of sugar in 100 g of water. Calculate the concentration in terms of mass by mass percentage of solution.

Given,

mass of sugar= 40g

mass of water= 100g

To find :- concentration of sugar in water

Total mass of solution = mass of sugar + mass of water = 100g + 40g = 140g

percentage of concentration of sugar in solution = $(40/140) \times 100 = 28.57$

23. What is Tyndall effect? Why the solution of copper sulphate does not show Tyndall effect?

Tyndall effect refers to the process by which light is scattered by colloids or suspension making the path of the light to be visible

Copper sulphate when dissolves in water forms a true solution. True solution does not show Tyndall effect.

24. How Tyndall effect can be observed in the canopy of a dense forest.

In the forests, the air contains mists which acts as the colloid dispersed in air. When the sunlight enters the dense forest, the rays of light pass through these particles of colloids and get scattered.

25. (a) Give two reasons to support the statement that CO_2 is a compound and not a mixture.

(b) Classify the following as pure substance or a mixture. If mixture, indicate whether homogeneous or heterogeneous.

(i) 24 carat gold (ii) Air (iii) Concrete

Ans:

(a) Carbon and oxygen are present in a fixed ratio in CO_2 . The constituents of carbon dioxide cannot be separated by simple physical methods.

(b) (i) 24 carat gold is a pure substance.

(ii) Air is a homogeneous mixture.

(iii) Concrete is a heterogeneous mixture.

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