Rudra The Practical School
Booster Test (24-25)

CLASS 9- SCIENCE (CHEMISTRY) Date : ___/___/2024

Time Allowed: 90 mins **Maximum Marks:40**

General Instructions:

1. This question paper consists of 18 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 8 objective - type questions carrying 1 mark each.
4. Section B consists of 3 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
5. Section C consists of 4 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
6. Section D consists of 2 Long Answer type questions carrying 05 marks each. Answers to these questions should be in the range of 80 to 120 words.
7. Section E consists of 1 source - based/case - based units of assessment of 04 marks each with sub -

SECTION A

1 During summer, water kept in an earthen pot becomes cool because of the phenomenon of [1]

a) transpiration b) evaporation

c) osmosis d) diffusion

2 The evaporation of a liquid occurs only at [1]

a) all temperatures b) temperature less than 100° C

c) fixed temperature d) temperature more than 100° C

3 Liquid A boils at 60° C while liquid B boils at 80 ° C which is more volatile? [1]

a) Liquid A b) Liquid B

c) Neither A nor B d) Both A and B

4 Which of the following solutions has the highest mass by mass percentage? [1]

6-M- A) 6 - MCQs
6 - FI.
6 T/F
B) 6 analogy
6 - Name/oneword.

c) Description (2M for each)
(10M) define/exam
(12) - (3ME)
(16) - (4ME)

a) 20 g of sodium carbonate in 90 g of water

b) 15 g of sugar in 160 g of water

c) 10 g of sodium chloride in 200 g of water

d) 60 g of potassium permanganate in 200 g of water

5 The substance which does not form a true solution in water is: [1]

a) alum b) egg albumin

c) common salt d) sugar

6 The components of the compound can be separated by using: [1]

a) chemical method

b) physical method

c) Can be separated by using any method.

d) Cannot be separated by using any method.

7 **Assertion (A):** A gas can be easily compressed by applying pressure. [1]

Reason (R): Since the inter - particle spaces in the gaseous state are very small, they cannot be decreased by applying pressure.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

8 **Assertion (A):** When a beam of light is passed through a colloidal solution placed in a dark place the path of the beam becomes visible. [1]

Reason (R): Light gets scattered by the colloidal particles.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

SECTION B (SOLVE ANY THREE)

9 What is evaporation? What are the factors affecting it? [2]

10 Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain these observations. [2]

11 4 g of a solute are dissolved in 40 g of water to form a saturated solution at 25° C. [2]

Calculate the solubility of the solute.

12 Explain why particles of a colloidal solution do not settle down when left undisturbed, while in the case of a suspension they do. [2]

13 Define solute, solvent and solution. [2]

SECTION C (SOLVE ANY FOUR)

14 Distinguish between : Evaporation and boiling [3]

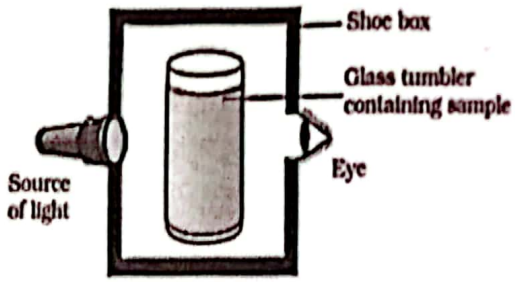
15 Give reasons [3]

a) A gas exerts pressure on the walls of the container.

b) A wooden table should be called a solid.

c) We can easily move our hand in air but to do the same through a solid block of wood we need a karate expert.

16 A group of students took an old shoe box and covered it with a black paper from all sides. They fixed a source of light (a torch) at one end of the box by making a hole in it and made another hole on the other side to view the light. They placed a milk sample contained in a beaker/tumbler in the box as shown in the Fig. They were amazed to see that milk taken in the tumbler was illuminated. They tried the same activity by taking a salt solution but found that light simply passed through it? [3]



1. Explain why the milk sample was illuminated. Name the phenomenon involved.
2. Same results were not observed with a salt solution. Explain.
3. Can you suggest two more solutions which would show the same effect as shown by the milk solution?

17 During an experiment, the students were asked to prepare a 10% (Mass/Mass) solution of sugar in water. Ramesh dissolved 10 g of sugar in 100 g of water while Sarika prepared it by dissolving 10 g of sugar in water to make 100 g of the solution. [3]

1. Are the two solutions of the same concentration.
2. Compare the mass % of the two solutions.

18 Differentiate between metals and non - metals based upon the various properties that they show. [3]

SECTION D (SOLVE ANY TWO)

19 Give reasons for the following observations: [5]

(a) A gas completely fills the vessel in which it is kept.

(b) A gas exerts pressure on the walls of the container.

(c) Naphthalene balls disappear with time without leaving any solid.

(d) We can easily move our hand in air but to do the same through a solid block of wood, we need a karate expert.

(e) Our palm feel cold when we put some acetone or petrol or perfume on it.

20 Classify each of the following as a physical or a chemical change. Give reasons. [5]

1. Drying of a shirt in the sun.
2. Rising of hot air over a radiator.
3. Burning of kerosene in a lantern.
4. Change in the colour of black tea on adding lemon juice to it.
5. Churning of milk cream to get butter.

21 1. To make a saturated solution, 36 g of sodium chloride is dissolved in 100 g of water at 293K. Find its concentration at this temperature. [5]

2. Calculate the mass of glucose and mass of water required to make 200g of 25% solution of glucose.

SECTION E

22 **Read the following text carefully and answer the questions that follow:** [4]

Homogeneous mixtures are regarded as solutions or true solutions. Heterogeneous mixtures are of two types. These are suspensions and colloidal solutions. These differ in the size of the particles responsible for the difference in their properties. In a suspension, the particle size is more than 10^{-5} cm whereas in a colloidal solution, it ranges between 10^{-5} cm to 10^{-7} cm. The two phases which constitute colloidal solutions, are dispersed phase and dispersion medium. Based upon their nature, the colloidal solutions are classified into eight types. The mixture of the non - reacting gases is always homogeneous irrespective of their nature. Therefore, it is not a colloidal solution.

1. Scattering of light occurs when a beam of light is passed through Blood. Why? (1)
2. What is Tyndall effect? (1)
3. What is called colloidal solution? (2)

OR

Give an example of colloidal solution and identified their dispersed phase and dispersion medium? (2)