

**QUESTION BANK FOR SA-1 (2015-16)**  
**SUBJECT - CHEMISTRY**  
**CLASS – IX**

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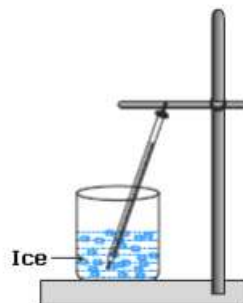
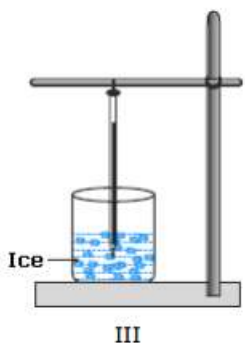
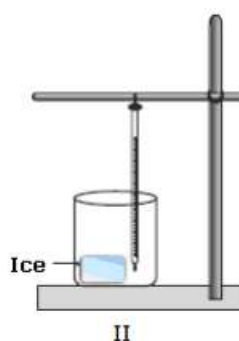
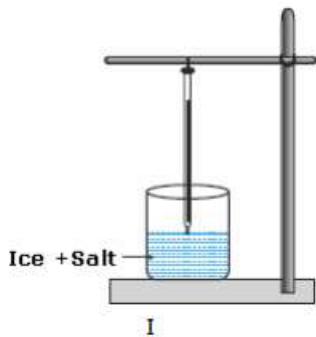
**CH-1 Matter in our surroundings**

Q The smell of hot sizzling food reaches us several metres away. Why?

Q In gases, particles vibrate \_\_\_\_\_.

1. about their mean position
2. about a vertical axis
3. about a horizontal axis
4. in any direction

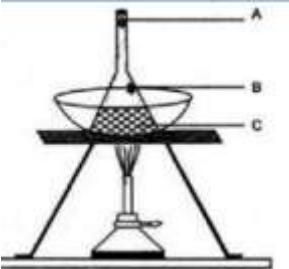
Q Which one of the following is the correct set up to determine the melting point of ice?



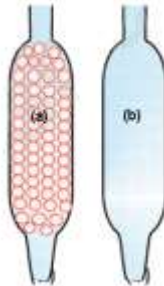
Q Why do we feel cool when we pour acetone on our palm?

Q Temperature is a measure of \_\_\_\_\_.

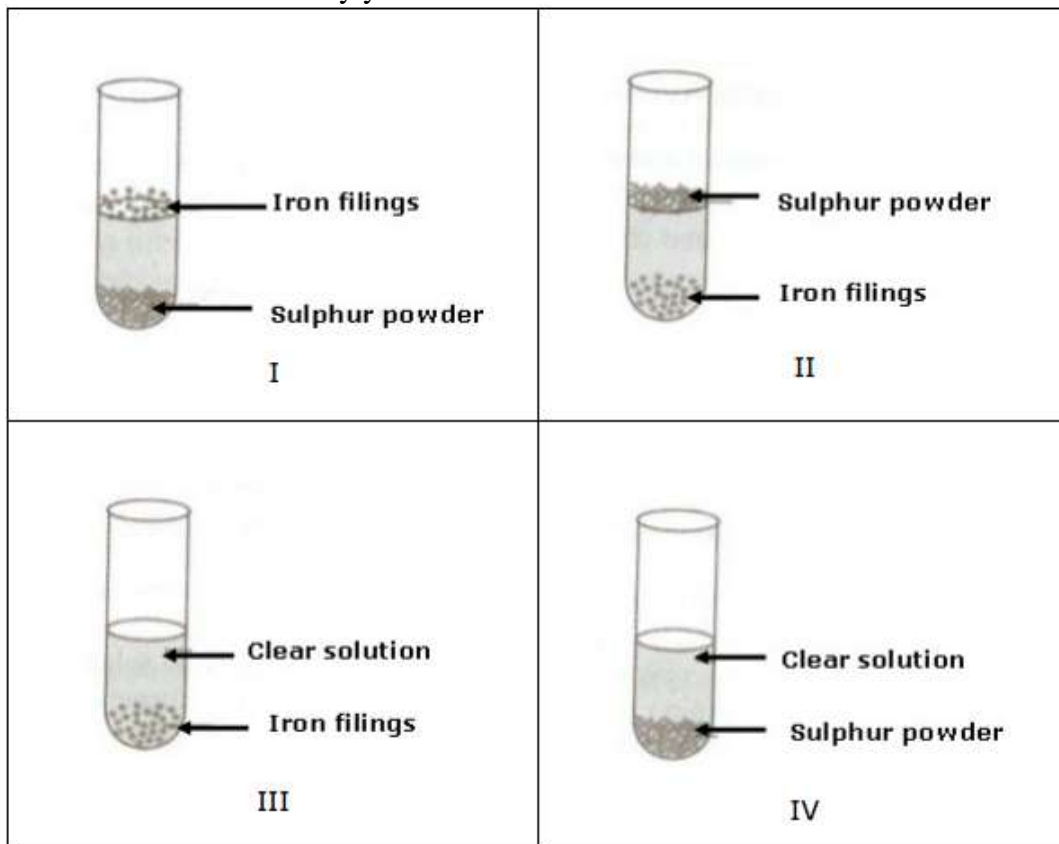
1. total kinetic energy of molecules

	<p>2 total potential energy of molecules</p> <p>3 average potential energy of molecules</p> <p>4 average kinetic energy of molecules</p>
	<p>The correct labeling of the diagram shown below is:-</p>  <p>a) A – cotton plug, B – impure <math>\text{NH}_4\text{Cl}</math>, C-mixture of <math>\text{NH}_4\text{Cl}</math> and common salt</p> <p>b) A <math>\text{NH}_4\text{Cl}</math> l vapours, B- pure <math>\text{NH}_4\text{Cl}</math> l , C- mixture of <math>\text{NH}_4\text{Cl}</math> and common salt</p> <p>c) A – cotton plug, B – pure <math>\text{NH}_4\text{Cl}</math> , C- mixture of <math>\text{NH}_4\text{Cl}</math> and common salt</p> <p>d) A – <math>\text{NH}_4\text{Cl}</math> vapours, B – impure <math>\text{NH}_4\text{Cl}</math>, c- mixture of <math>\text{NH}_4\text{Cl}</math> and common salt.</p>
	<p>What is dry ice ? What happens when the pressure under which it is stored is decreased to?</p>
	<p>What is common in the three states of matter?</p>
	<p>Is it possible for two or more states of matter to exist at the same temperature ? Justify.</p>
	<p>(a) Illustrate an activity to demonstrate that particles of matter have spaces between them.</p> <p>(b) Explain why a diver is able to cut through water in a swimming pool.</p>
	<p>A few substances are arranged in the increasing order of ‘forces of attraction’ between their particles. Which one of the following represents a correct arrangement?</p> <p>(a) Water, air, wind</p> <p>(b) Air, sugar, oil</p> <p>(c) Oxygen, water, sugar</p> <p>(d) Salt, juice, air</p>
	<p>“A gas can exert pressure on the walls of the container.” Justify with suitable examples.</p>
	<p>In an experiment to determine the melting point of ice in laboratory, what form of ice should be preferably used? When should the reading of thermometer be noted?</p>
	<p>(a) On a hot sunny day, people sprinkle water on the roof or open ground. Explain with reason.</p> <p>(b) Write the factors which determine the state of a substance?</p>
	<p>Account for the following :</p> <p>(a) For any physical state of a substance, the temperature remains constant during its change of state.</p>

	<p>(b) Water kept in an earthen pot becomes cool in summer.  (c) We are able to sip hot tea from a saucer rather than from a cup.</p>
	<p>(a) Water vapour has more energy than water at same temperature.  (b) What will happen when solid ammonium chloride is heated?  (c) When a solid starts melting, its temperature does not rise till whole of it has melted .explain.</p>
	<p>(a) Give four differences between boiling and evaporation?  (b) Arrange solids, liquids and gases in order of:  (i) Increasing intermolecular spaces (ii) Increasing intermolecular forces</p>
	<p>(a) List the three characteristics of particles of matter.  (b) Arrange the following substances in increasing order of forces of attraction between the particles – milk, sugar, carbon dioxide.</p>
	<p>(a) When sugar is dissolved in water, there is hardly an increase in volume. Which characteristic of matter is illustrated by this observation?  (b) How does our body maintain its temperature during summer?  (c) Butter is generally wrapped in wet cloth during summer if non refrigerator is available. Explain.</p> <p><b><u>CH-2 Is matter around us pure ?</u></b></p>
	<p>Under which category of mixtures will you classify alloys and why?</p>
	<p>When a mixture of sand, chalk and sodium chloride is dissolved in water and then filtered. What will be left on the filter paper and what is it called ?  (a) sodium chloride ; filtrate (b) chalk; distillate .  (c) chalk, and sand; filtrate (d) chalk and sand; residue</p>
	<p>When crystals of copper sulphate are heated, they turn white. This colour change is due to :  (a) loss of copper ions (b) loss of sulphate ions  (c) decomposition of copper sulphate (d) loss of water of crystallisation</p>
	<p>Write 2 advantages of using crystallization technique over simple evaporation technique.</p>
	<p>While diluting a solution of salt in water, a student by mistake added acetone (boiling point 56°C). What technique can be employed to get back the acetone? Justify your choice.</p>
	<p>What is meant by concentration of a solution? Which is the most common method of expressing the concentration of a solution?</p>
	<p>Sucrose (sugar) crystals obtained from sugarcane and beetroot are mixed together. Will it be a pure substance or a mixture? Give reasons for the same.</p>
	<p>Give reasons : (1 each)  (a). path of beam of light is not visible through a solution  (b). particles of solution cannot be seen with a naked eye</p>
	<p>Which of the following will show “Tyndall effect”?  (a) salt solution (b) milk</p>

	(c) copper sulphate solution	(d) starch solution.
	A solution of Acetone consists 30ml of Acetone in 570ml of water. Calculate the percentage concentration of the solute in the solution.	
	Which of the tubes in Figure given here (a) and (b) will be more effective as a condenser in the distillation apparatus?	
		
	Identify the physical and chemical changes from the following:- i) Burning of magnesium in air ii) Tarnishing of silver spoon iii) Sublimation of iodine iv) Electrolysis of water	
	A solution contains 40 ml of alcohol in 360 ml of water. Calculate the concentration in terms volume by volume percentage of the solution.	
	Name the technique you will use to separate the following and also state the principle behind it:- (a) Used in washing machines to squeeze out water from wet clothes. (b) Used to separate pigments from natural colors	
	(a) Solubility of sodium nitrate at 313 K is 60 g. What mass of sodium nitrate would be needed to produce a saturated solution of NaNO <sub>3</sub> in 50 g of water at 313 K? (b) What is the effect of change of temperature on the solubility of a salt?	
	(a) Classify the following as pure substances or mixture: milk, air, iron, distilled water. (b) Give any four application of colloidal solutions.	

In an experiment, carbon disulphide was added to test tube containing a mixture of iron filings and sulphur powder as shown in the given diagrams. Which of the following diagram represents the correct observation? Justify your answer.



- (i) Name the process or the separation technique you would follow to separate :
- Dyes in black ink
  - Butter from cream
  - Ammonium chloride and common salt
  - Drugs from blood
  - Nitrogen from liquid air
- (ii) State the principle used in separation by centrifugation

Four students A, B, C and D studied the properties of a mixture of sulphur powder and iron filings. They recorded their observation in the table mentioned below. Find the student with the correct result?

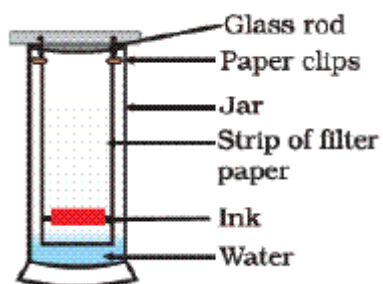
Properties	Appearance		Behaviour towards magnet		Behaviour towards CS <sub>2</sub>		Effect of heat	
	Student	Homogeneous	Heterogeneous	Attracted	Not attracted	One part dissolved	Nothing dissolved	Mixture glow
A	x	✓	✓	x	✓	x	✓	x
B	x	✓	✓	x	x	✓	x	✓
C	✓	x	x	✓	✓	x	✓	x
D	x	✓	x	✓	✓	x	x	✓

(c) Account for the following:

- Hydrogen is considered an element.
- Water is regarded as compound.

b) What is the physical state of water at i) 250°C ii) 100°C ?

(c) A child wanted to separate the mixture of dyes constituting a sample of ink. He marked a line by the ink on a thick paper and placed it in a glass containing water as shown in figure. The paper was removed when the water moved near the top of the filter paper.



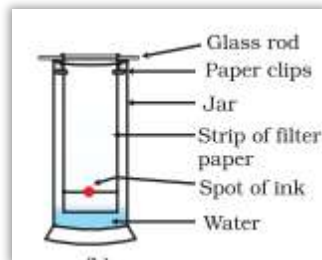
- What would you expect to see, if the ink contains three different coloured components?
- Name the technique used by the child and the principle behind the process.
- Suggest one more application of this technique.

(c) (a) Dipti was asked to prepare four separate mixtures in four beakers A, B, C and D by mixing sugar, fine sand, thin paste of starch and chalk powder respectively in water and then categorizes each as stable or unstable. What will be the correct categorization?

(b) A student added water to sand and starch in different test tube. How will you differentiate between the two ?

(c) Describe a method for separation of the constituents of gunpowder.

(c) Study the diagram carefully and then answer the following question:



- (a) After the completion of the activity what do you observe on the filter paper?  
 (b) Why did the two colours rise to different heights?  
 (c) What could be the essential conditions to separate any dye using this method?

(Aarushi's mother always squeezes water from wet clothes in the spinner of washing machine and then uses it to clean the floor. 3 (a) Write the principle of the technique used in the above mentioned process. (b) Write one more application of this technique. (c) What do you learn from Aarushi's mother?