CHEMISTRY STUDY MATERIALS FOR CLASS 9

(NCERT based Questions-Answers of Chapter - 2)

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Is Matter Around Us Pure

Q. 54: (a) What is a mixture? Give two examples of mixtures.

(b) What is meant by (i) homogeneous mixtures, and (ii) Heterogeneous mixtures? Give two examples of homogeneous mixtures and two of heterogeneous mixtures.

(c) What is the other name of homogenous mixtures?

Answer 54: (a). Mixtures - A mixture is a substance which consists of two or more elements or compounds not chemically combined together.

Examples - Air, gun powder.

(b). Homogeneous mixtures- Those mixtures in which the substance are completely mixed together and are indistinguishable from one another, are called homogeneous mixtures. Examples- Sugar copper sulphate

Those mixtures in which the substances remain separate and one substance is spread throughout the other substance as small particles, droplets or bubbles, are called heterogeneous mixtures.
Example- Starch,soap

(c) Other name for homogeneous mixtures is ANSWERS.

Q. 55: (a) What are the three general classes of matter?

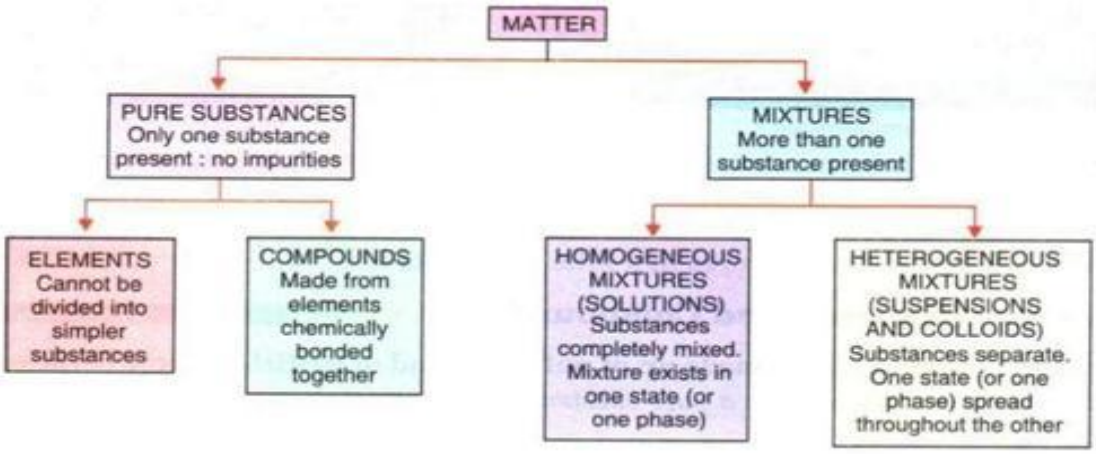
Give one example of each type.

(b) Draw a flow chart for the schematic representation of different types of matter.

Answer 55: (a). Three general classes of matter are elements, compounds and mixtures. Element - Hydrogen

Compound - Sodium chloride Mixtures - Salt

(b).



Q. 56: In the following set of substances, one item does not belong to the set. Select this item and explain why it does not belong to the set.

Hydrogen, Oxygen, Steam, Chlorine

Answer 56: Steam does not belong to the set. This is because all other are elements while steam is a compound.

Q. 57: Iron powder and sulphur powder were mixed together and divided into two parts A and B. When part A was heated strongly over burner, then a substance C was formed. The part B was, however, not heated at all. When dilute hydrochloric acid was added to substance C, then gas D was evolved and when dilute hydrochloric acid was added to part B then gas E was evolved.

(a) What type of substance is B?

(b) What type of substance is C?

(c) Name the gas (i) D, and (ii) E?

(d) State one characteristic property of gas D.

(e) Write one test to identify gas E.

Answer 57:(a). B is a mixture (Fe + S)

(b). C is a compound (Iron sulphide)

(c). (i). D is hydrogen sulphide gas

(ii). E is hydrogen gas

(d). Gas D has a rotten egg like smell.

(e). Gas E burns with a 'pop' sound.

Q. 58: Classify the following as physical or chemical changes:

(i)Cooking of food (ii) Boiling of water (iii) Cutting of trees

(iv)Dissolving salt in water (v) Digestion of food (vi) Melting of ice

Answer 58: i. Cooking of food - Chemical change

ii. Boiling of water - Physical change iii. Cutting of trees - Physical change

iv. Dissolving salt in water - Physical change

v. Digestion of food - Chemical change vi. Melting of ice- Physical change

Q. 59: Which of the following are physical changes and which are chemical changes? (a) Burning of a magnesium wire (b) Freezing of water

(c) Rusting of iron (d) Glowing of an electric bulb

Answer 59: (a) Burning of magnesium wire - Chemical change

(b) Freezing of water - Physical change

(c) Rusting of iron - Chemical change

(d) Glowing of electric bulb - Physical change

Q. 60: Classify the following as physical or chemical changes:

(i) Formation of curd from milk (ii) Condensation of steam

(iii) Growth of a plant (iv) Breaking of glass tumbler

Answer 60: (a) Formation of curd from milk - Chemical change

(b) Condensation of steam - Physical change

(c) Growth of plant - Chemical change

(d) Breaking of a glass tumbler - Physical change

Q. 61: (a)Give the main differences between physical changes and chemical changes.(b) Which of the following are chemical changes and which physical? Give reason. (i) A glass bottle breaking (ii) Coal burning in air

(ii) Making a cake (iv) Wool being knitted into a sweater

Answer 61(a)

PHYSICAL CHANGE	CHEMICAL CHANGE
1. No new substance is formed in a physical change. 2. It is a temporary change. 3. It is easily reversible. 4. Very little heat or light energy is usually absorbed or given out in this process. 5. Mass of substance does not alter.	1. New substance is formed in a chemical change. 2. A chemical change is a permanent change. 3. This process is usually irreversible. 4. A lot of heat or light energy is absorbed or given out in this process. 5. Mass of substance does alter in this process.

(b). Chemical change - Coal burning in air, making of cake

Physical change- A glass bottle breaking, wool being knitted into a sweater

Q. 62: (a) Define solubility of a substance. How does it vary with temperature?

(b) What do you understand by the statement "the solubility of copper sulphate in water at $20^{o}C$ is 20.7g"?

(c) What is the effect of temperature on the solubility of solids in liquids?

Answer 62: (a). The maximum amount of a solute which can be dissolved in 100 g of a solvent at a specified temperature is known as the solubility of that solute in that solvent .

The solubility of solids in liquids is directly proportional to temperature whereas the solubility of gases in liquids is inversely proportional to temperature.

(b) This statement means that 100 g of water can dissolve a maximum of 20.7 g of copper sulphate at $20^{o}C$.

(c) The solubility of solids in liquids increases on increasing the temperature and decreases on decreasing the temperature.

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