CHEMISTRY STUDY MATERIALS FOR CLASS 9

(NCERT based Questions-Answers of Chapter - 2)

GANESH KUMAR DATE:- 15/11/2020

Is Matter Around Us Pure

Q. 46: List five characteristics by which compounds can be distinguished from mixtures.

Answer 46

MIXTURES	COMPOUNDS
1. A mixture can be separated into constituents by the physical processes.	1. A compound cannot be separated into its constituents by the physical processes.
2. A mixture shows the properties of its constituents.	2. The properties of a compound are entirely different from those of its constituents.
3. Energy is usually neither given out nor absorbed in the preparation of a mixture.	3. Energy is usually given out or absorbed during the preparation of a compound.
4. The composition of a mixture is variable.	4. The composition of a compound is fixed.
5. A mixture does not have a fixed melting point, boiling point, etc.	5. A compound has a fixed melting, boiling point, etc.

Q. 47: You are given two liquids, one a Answer and the other a compound. How will you distinguish the Answer from the compound?

Answer 47: Evaporate both the liquids separately.

A pure compound will evaporate completely, leaving no residue whereas Answer will not be evaporated completely, i.e. some residue will be left behind.

Q. 48: Name a non-metal:

(a) Which is lustrous?

(b) Which is required for combustion?

(c) Whose one of the allotropic forms is a good conductor of electricity? Name the allotrope.

(d) Other than carbon which shows allotropy

(e) Which is known to form the largest number of compounds?

Answer 48

(a). Iodine is a lustrous non-metal.

(b). Oxygen is a non-metal required for combustion.

(c). Allotrope of carbon forms good conductor of electricity.

That allotrope is graphite. (d). Silicon (e). Carbon

Q. 49: Name a metal:

(a) Which can be easily cut with a knife?

(b) Which forms amalgams?

(c) Which has no fixed shape?

(d) Which has a low melting point?

(e) Which is yellow in colour?

Answer 49: (a) Sodium (b) Mercury (c) Mercury (d) Sodium (e). Gold

Q. 50: Which of the following are not compounds? Chlorine gas, potassium chloride, Iron powder, Iron sulphide, Aluminium foil, Iodine vapour, Graphite, Carbon monoxide, Sulphur powder, Diamond

Answer 50: Chlorine gas, Aluminium foil, Iodine vapour, Graphite, Sulphur powder, Diamond are not compounds.

Q. 51: (a) State the main points of difference between homogeneous and heterogeneous mixtures.

(b) Classify the following materials as homogeneous mixtures and heterogeneous mixtures.

Soda-water, Wood, Air, Soil, Vinegar, Alcohol and water mixture, Petrol and water mixture, Chalk and water mixture, Sugar and water mixture, Copper sulphate

Answer 51

(a). Those mixtures in which the substances are completely mixed together and are indistinguishable from one another, are called homogeneous mixtures. They have a uniform composition throughout its mass. All the homogeneous mixtures are called Answers.

Examples- Sugar Answer, salt Answer, copper sulphate Answer, etc.

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. Heterogeneous mixture does not have a uniform composition throughout its mass.

Example- Starch Answer, soap Answer.

(b). Homogeneous mixtures - Soda water, air, vinegar, alcohol and water mixture, sugar and water mixture, Copper sulphate Answer.

Heterogeneous mixture - Wood, petrol and water mixture chalk and water mixture

Q. 52: (a) What is meant by (i) elements (ii) compound, and (iii) mixtures? Write down the names of two elements, two compounds and two mixtures.

(b) Classify the flowing into elements, compounds and mixtures:

Marble, Air, Gold, Brass, Sand, Diamond, Graphite, Petroleum, Common salt, Sea-water, Chalk

Answer 52: (a).(i).Elements - An element is a substance which cannot be split up into two or more simpler substances by the usual chemical methods of applying heat, light or electricity. Ex. Hydrogen, Oxygen

(ii). Compounds - A compound is a substance made up of two or more elements chemically combined in a fixed proportion by mass.

Ex. Sodium chloride, calcium carbonate

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

(b). Elements - Gold, Diamond, Graphite

Compounds - Common salt, Sea water, Marble

Mixtures - Brass, Sand, Petroleum, Chalk, Air

Q. 53: (a) What are (i) metals (ii) non-metals, and (iii) metalloids?

Give two examples each of metal, non-metals and metalloids.

(b) Classify the following into metals, non-metals and metalloids:

Silicon, Mercury, Diamond, Sulphur, Iodine, Germanium, Sodium, Carbon, Magnesium, Copper, Boron, Helium

Answer 53: (i). METALS - A metal is an element that is malleable, ductile and conducts electricity. Example - Iron, Copper

(ii). NON-METALS - A non metal is an element that is neither malleable, nor ductile and does not conducts electricity.Example - Carbon, Sulphur

(iii). METALLOIDS - The elements which show some properties of metals and some other properties of non-metals are called metalloids.

Example - Boron, Silicon, Helium, Magnesium, Copper

(b). Metals - Mercury, Sodium,

Non-metals - Diamond, Sulphur, Iodine, Carbon, Boron

Metalloids - Silicon, Germanium

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