

**Subject: Science**

**Submitted by: Ms. Seema Adil**

**Date: 26<sup>th</sup> October 2016.**

**TOPICS: DICHOTOMOUS KEY, ELEMENTS AND COMPOUNDS, MIXTURES**

**Q-1: Fill in the blanks with suitable answers.**

1. Electrolysis is a process in which \_\_\_\_\_ is passed through water to break it into its constituent elements.
2. While cells are the building blocks of living things, \_\_\_\_\_ are the building blocks of all matter, including living and non-living things.
3. Cells themselves are made up of different \_\_\_\_\_ or materials containing elements.
4. Currently there are \_\_\_\_\_ elements, \_\_\_\_\_ of which are found naturally and the rest are man made.
5. Stars are made up of two most abundant elements in the universe, \_\_\_\_\_ and \_\_\_\_\_.
6. The most abundant element in our universe is \_\_\_\_\_.
7. The most abundant element by mass in the Earth's crust and in the human body is \_\_\_\_\_.
8. Some elements are named after the scientists who discovered them for e.g. Einsteinium and \_\_\_\_\_ e.tc.
9. A chemical reaction is a process in which \_\_\_\_\_ substances are formed.
10. The physical properties of elements are their; appearance, state, colour, density, boiling and melting points, \_\_\_\_\_ conductivity.
11. The Russian scientist Dmitri Ivanovich \_\_\_\_\_ (1834-1907) was the first to arrange the \_\_\_\_\_ known elements during his time, in the Periodic Table.
12. The vertical columns in the Periodic Table are called \_\_\_\_\_ and the horizontal rows are called \_\_\_\_\_.
13. Going across a period from left to right, elements change from being \_\_\_\_\_ to \_\_\_\_\_ in character.
14. Liquid nitrogen is used as a \_\_\_\_\_ agent.
15. \_\_\_\_\_ is a metal which is not solid at room temperature, it is semi solid/liquid.
16. A non metal \_\_\_\_\_ conducts electricity well like metals.

**Q.2-Encircle the best answer from the given options.**

1. The elements have same properties in
  - A period
  - A group
2. The elements that have properties of metals and non metals both are called
  - Metalloids
  - Metallic elements
3. Solid carbon dioxide is called

4.A compound is a/an

- Impure substance
- Pure substance

5.Burning, heating and electrolysis are examples of

- Physical change
- Chemical reaction

6.Distilled water is

- A compound
- A mixture

7.Muddy water is an example of

- compound
- mixture

8.Mixtures are

- Pure substances
- Impure substances

**Q.3 (a)- Give chemical symbols for the following elements.**

<b>Element</b>	<b>Its chemical symbol</b>	<b>Element</b>	<b>Its chemical symbol</b>
Oxygen		Sulphur	
Silicon		Zinc	
Aluminium		Titanium	
Calcium		Neon	
Magnesium		Bromine	
Carbon		Argon	
Hydrogen		Chromium	
Nitrogen		Nickel	
Phosphorous		Boron	
Helium		Lithium	
Chlorine		Beryllium	
Cobalt		Manganese	
Iodine		Fluorine	

(b).Give other names and the chemical symbols of these elements.

Element	Its other name	Its chemical symbol
Iron		
Sodium		
Potassium		
Copper		
Silver		
Tungsten		
Gold		
Lead		
Mercury		
Antimony		
Tin		

**Q.4 (a ) Give reasons.Why,**

1. Helium gas is used to fill airships and balloons.
2. Copper is used to make electrical wires.
3. Oxygen gas is filled in tanks for scuba diving.
4. The early scientists called Alchemists tried to make gold but failed in their attempts.
5. 1 gm of Hydrogen combines with 8 gm of Oxygen to form 9 gm of water. If there is 5 gm Hydrogen and 50 gm of Oxygen only 45 gm of water will be formed.

**Answers.**

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_

**(b) Write the constituent elements for the following compounds.**

<b>Compound</b>	<b>Its constituent elements</b>
Carbon dioxide	
Common salt (Sodium chloride)	
Sand (silicon dioxide)	
Dry ice (solid carbon dioxide)	
Chalk (calcium carbonate)	
Polyethene ( a kind of plastic)	
Sugar	
Glucose	
Potassium chloride	
Carbon monoxide	
Iron Sulphide	
Mercuric oxide	
Nitrogen dioxide	
Copper carbonate	
Water	

**Q.5(a) Give examples related to the following properties of compounds.**

	<b>Properties of compounds</b>	<b>Examples</b>
	Compounds are formed by chemical reactions.	
	Compounds can only be broken down into simpler substances by chemical reactions.	
	A compound has properties which are different from the properties of its constituent elements	
	The different elements in a compound are joined together in a fixed proportion by mass..	

(b) These are different ways of forming compounds, Give their examples.

1. Combining **two elements** during chemical reaction:

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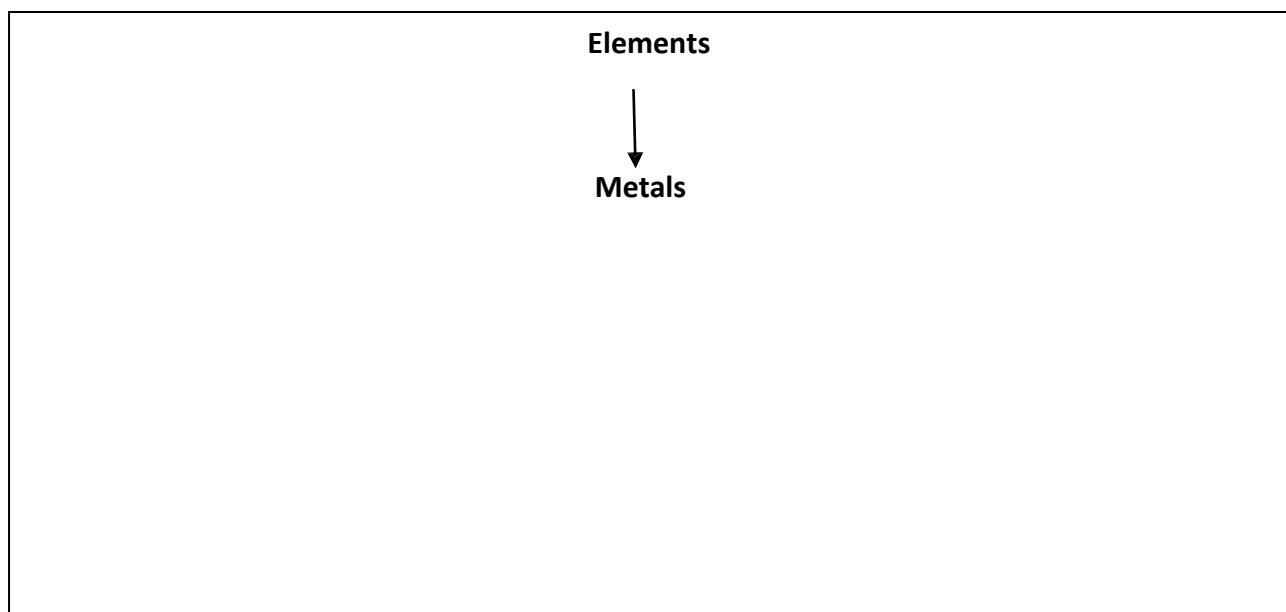
2. Combining **element** and **compound** during chemical reaction:

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3. Combining **two compounds** during chemical reaction:

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**Q.6 (a ) Make a dichotomous key to identify these elements, copper, sulphur, iron, Mercury**



(b )Sort out these elements into the columns below.

**Titanium, carbon, neon, helium, calcium, copper, chlorine, sodium, Cobalt, Oxygen, Magnesium, Nickel, Iodine**

<b>Metallic elements</b>	<b>Non metallic elements</b>

**Q.7 (a) Differentiate between :**

Properties	Metals	Non metals
appearance		
Density		
Melting and boiling points		
Heat and electrical conductivity		
Can be drawn into wires		
Can be beaten into shapes		
e.g.		

**Periodic Table of Elements**

For elements with no stable isotopes, the mass number of the isotope with the longest half-life is in parentheses.

Periodic Table Design and Interface Copyright © 1997 Michael Dayah. <http://www.ptable.com> Last updated Dec. 10, 2011\*

\*Edited by Dr. Casagrande

**(b) Name the metalloids from the Periodic Table.**

- |           |           |
|-----------|-----------|
| (1) _____ | (5) _____ |
| (2) _____ | (6) _____ |
| (3) _____ | (7) _____ |
| (4) _____ | (8) _____ |