

Chemistry
Revision worksheet

W1

Date _____
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Hw
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Multiple choice questions.

1. The branch of science ~~that~~ which deals with the different forms of energy eg. light and sound.

b) Physics

2. The scientist who formulated the periodic table.

c) Dmitri Mendeleev

3. The inter-molecular force is maximum in

a) Solids

4. Rapid conversion of ~~stea~~ water into steam is an example of

d) ~~evap~~ vapourization

5. The temperature at which a liquid gets converted into its vapour state is called ~~the~~ its

b) boiling point

6. Predecessors to the modern chemists who created the 'Philosopher's stone'

b) Alchemists

7. What is an element
- a) A substance that is made up of one type of atom and can't be reduced to simpler substance
8. A metallic apparatus which supports the wire gauze.
- a) A tripod stand
9. A long glass apparatus closed at one end used for collecting gases.
- b) Gas jar
10. A modern apparatus with an air regulator, used for heating purposes.
- b) Bunsen burner
11. Fill in the blanks.
11. From the elements nitrogen, chlorine, bromine, the element present in the atmosphere is nitrogen.
12. An element is a pure substance which cannot be broken down by physical or chemical ~~proce~~ methods.

13. Evaporation takes place at all temperatures.

14. Freezing process is just the reverse of melting.

15. Sublimation is the process ~~of~~ that involves direct conversion of solid into ^{its} vapour on heating.

16. Preservatives are added to food or beverages. Explain why.

Ans- Preservatives are added to food or beverages so that they don't rot when they are stored for long time. They also prevent spoilage of food. E.g. Sodium benzoate, common salt, sugar, sodium metabisulphate and salicylic acid etc.

17. Alchemy was considered a pseudoscience. Explain.

Ans- Alchemy was considered a pseudoscience because it was partly based on ~~set~~ experiments and partly on spiritual discipline. The alchemists ~~spent~~ used their knowledge to ~~find~~ discover the philosopher's stone which was not really a stone but wax, powder or liquid which on heating with a base metal iron or copper would turn into gold. ~~The~~ Alchemy also lacked a common scientific language to explain its concepts.

18. What happens to water if
- It is kept in a deep freezer
 - It is heated

Explain the phenomenon of change of state of matter.

Ans- a) When water is kept in a deep freezer it cools down and the particles lose their energy and the intermolecular force of attraction increases and intermolecular space decreases and hence, water changes to solid form, i.e. ice.

b) When water is heated, the particles get more kinetic energy due to absorption of heat. So, the intermolecular force decreases and the intermolecular space ~~decreases~~ increases. Thus, water changes into gas.

19. State two characteristics of water which prove that it is a compound.

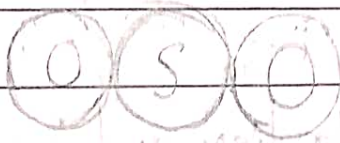
Ans- Characteristics of water to prove that it is a compound -

* Water is ~~made~~ formed when hydrogen and oxygen atoms.

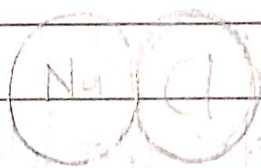
* Water has its properties entirely different from its constituents hydrogen and oxygen, i.e. hydrogen and oxygen are gases but water is a liquid. Hydrogen burns, oxygen helps in burning, while water puts off fire.

* When ~~we~~ hydrogen and oxygen combine to form water in a fixed ratio, they cannot be separated by simple physical means. They can only be separated by electrolysis, which is a chemical process.

20. Q. Anc- Diagrams of sulphur dioxide molecule and sodium chloride molecule -
Sulphur Dioxide molecule



Sodium chloride molecule



3 mark
21. Differentiate between the terms - food preservatives and food processing with appropriate examples.

State the contribution of

a) Dmitri Mendeleev

b) Antoine Lavoisier

c) John Dalton

Towards the development of chemistry.

Ans-

~~Food processing - Food processing~~

* Food preservatives

Food preservatives are substances added to food to prevent their spoilage.

* E.g. Common salt, sugar etc.

Food processing

Food processing is the processing of food to kill

the germs, to make it tastier and to increase its quality.

* E.g. Tinned vegetables, bread etc.

The contribution of
Dmitri Mendeleev - Dmitri Mendeleev was a Russian chemist, best known for his discovery of "periodic law" in 1869. He formulated

the "Periodic table of elements." His deepest wish was to organize substances in a better way.

b) Antoine Lavoisier ~~is~~ was a French nobleman. He revolutionalised chemistry. He ~~nam~~ named the elements carbon, hydrogen and oxygen. He discovered the role of oxygen in respiration and combustion for which, he is most noted. He ~~discovered~~ established that water is a compound and helped to develop chemistry into quantitative science from a qualitative one.

c) John Dalton was a Swedish chemist and physicist. He ~~&~~ proved that matter is made up of small ~~indivisable~~ indivisible particles called atoms. For this he proposed his atomic theory which was later called as "Dalton's atomic theory".

22. Explain the term compound. Name a compound containing _____

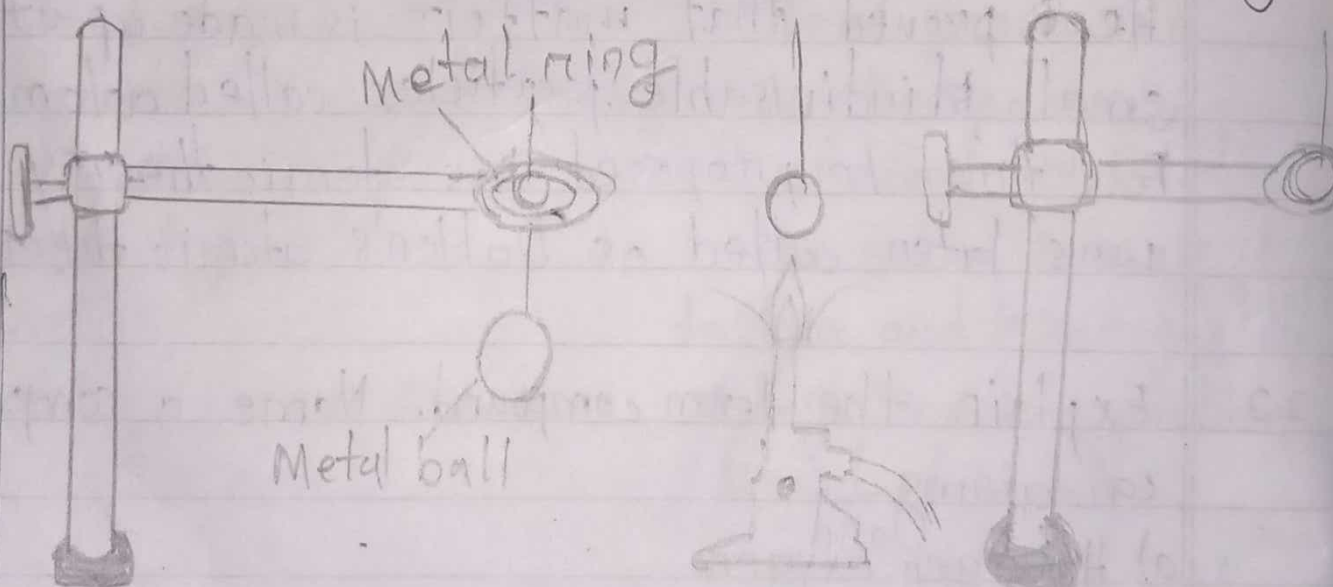
- Hydrogen ^{and} oxygen
- carbon and oxygen
- nitrogen and oxygen
- calcium and oxygen

Ans- Compounds are the substances which are formed when two or more elements combine chemically in a fixed ratio by mass

A compound containing -

- a) Hydrogen and oxygen - H_2O (water)
- b) Carbon and oxygen - CO (Carbon monoxide)
- c) Nitrogen and oxygen - ~~NO_2~~ N_2O (Nitrous Oxide)
- d) Calcium and oxygen - ~~Calcium~~ Calcium oxide (CaO)

23. With the help of a simple diagram, how would you show that - solids expand on heating.



I
Metal ball passes through the ring

II
Metal ball is heated

III
Metal ball is unable to pass through ring after heating

this shows solids expand on heating.

24. All medicines must be taken under proper doctors supervision and in the correct dose. Give reason.

Ans Medicines must be taken under proper doctors supervision and in the correct dose because medicines are made up of different chemicals, which cure our diseases. If the medicines are taken in a low dose, the diseases will not be cured and if we take it in a dose that is more than normal, then the chemicals can cause harmful reactions in our body. E.g. If someone intakes an overdose of sleeping pills then it may affect the brain and cause death.

25. Write the uses of following elements and compounds.

Gold, platinum and silver - They are lustrous (shiny) and ~~are~~ do not tarnish in air. ~~They are used~~ in ~~jewellery~~. They also look shiny and attractive and remain in free state. So, they are used in jewellery.

b) Copper and aluminium are good conductors of heat and electricity. They ~~are~~ are ductile and malleable. Therefore, they are used in utensils, electric wires etc.

- Copper can be mixed with tin and zinc to form stronger and durable alloys like brass and bronze and can be used in door knobs, handles, electrical fittings etc.

c) Plastic is a non-conductor, it is an insulator. It is used to make bags, shoes, balls, bats, tyres, pipes, ~~cooker~~ non-stick cookware etc.

26. Give reasons why

a) Wet clothes dry quickly on a warm day than on a cold humid day.

Ans. In a warm day, due to the sun's light and heat the ~~the~~ water ^{in wet} clothes ~~is~~ evaporates faster but on a cold humid day the ~~tem~~ temperature is not ~~so~~ so much that it ^{is} can vaporize.

b) Water in a dish evaporates faster than in a bottle. Give reason.

Ans- Water in a dish evaporates faster because it is in contact with the atmosphere. ~~So, due~~ So, due to the air around it, it evaporates faster. Also, when water is on a dish, the sun's rays can also cause its evaporation when it is in a place where ~~it~~ sun's rays can reach upto it.

c) Why are volatile liquids such as ~~alcohol~~ alcohol and spirit stored ⁱⁿ tightly closed bottles?

Ans- As, ~~alcohol~~ alcohol and spirit are volatile, if they come in air contact, they can evaporate faster. So, to prevent their fast evaporation, they are kept in tightly closed bottles.

27. Give reason

a) Philosopher's stone is not exactly a stone.

Ans- Philosopher's stone is not exactly a stone, it is a liquid, wax or powder which on heating with a base metal copper or iron would turn into gold. It was not discovered by the alchemists ~~and~~ after their several ~~tries~~ tries also. This shows that philosopher's stone is not exactly a stone.

b) Food processing is an important procedure for obtaining marketable food products.

Ans- Food processing is an important procedure for obtaining marketable food products, because processing of food kills the germs in it and improves its quality. Also, after processing of food, it can be easily prepared and served to consumers. E.g. Tinned vegetables, ~~and~~ jelly, bread etc.

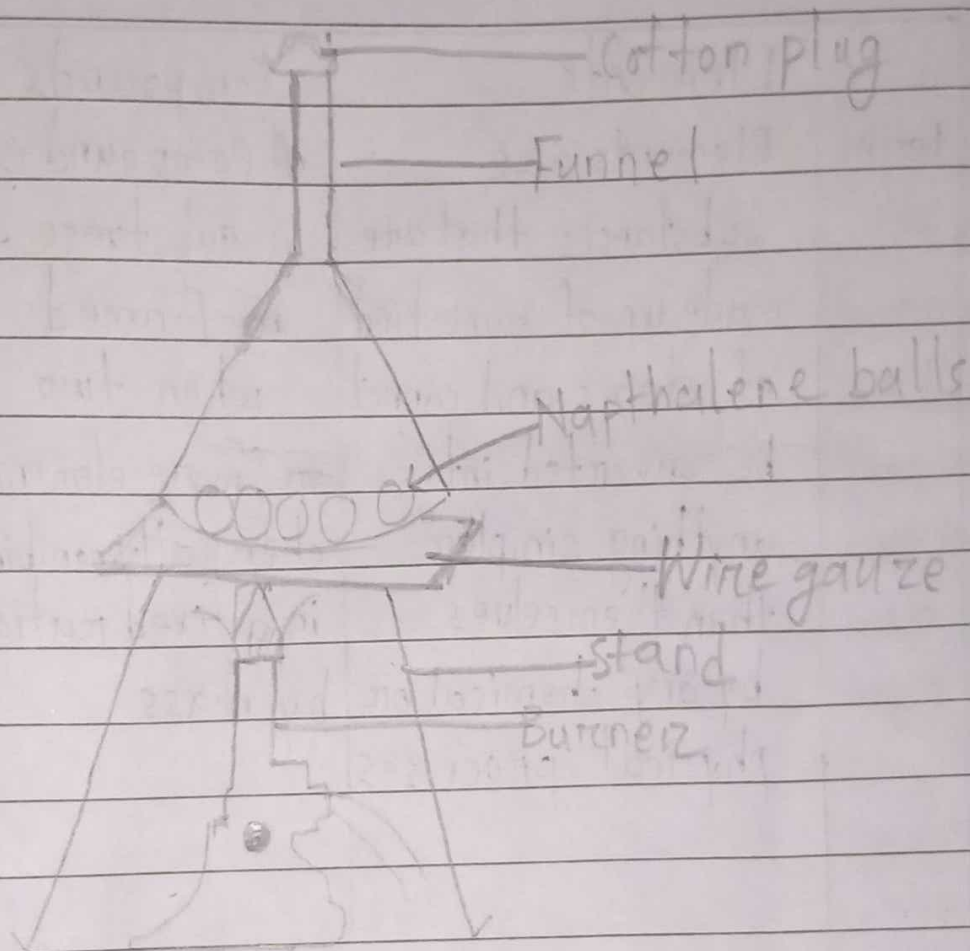
c) Cosmetics may contain preservatives as one of their ingredients.

Ans- Cosmetics may contain preservatives as one of their ingredients to prevent the growth of bacteria and mould. Parabens and formaldehyde releasing preservatives are commonly used preservatives in cosmetics and personal care products.

28. What do you mean by sublimation? Why does the size of naphthalene balls decrease when left open? Describe an experiment to demonstrate the process of sublimation.

Ans- Sublimation is the direct change of a solid to gaseous form. As naphthalene balls sublime, they change into vapour and ~~they~~ their size decreases when they are left open.

- Take some naphthalene balls in a dish and ~~transfer~~ transfer them into a ~~fun~~ funnel. Cover it with a cotton plug. Heat the balls.



When the balls are heated, they change into vapour without changing into liquid, i.e. they sublime.

29. Tabulate a comparative chart - to differentiate between elements, compounds and mixtures. Differentiate them with reference to

- a) the term
- b) existence
- c) properties

Ans-

| term | Elements | Compounds | Mixtures |
|-----------|--|--|---|
| term | <p>Elements are substances that are made up of same kind of atoms and cannot be converted into anything simpler than themselves by any chemical or physical processes.</p> | <p>A Compound is a substance is formed when two ^{or} more elements chemically combine in a fixed ratio by mass</p> | <p>A mixture is a substance that is formed when different substances can mix. They can be separated by simple physical means.</p> |
| existence | <p>Elements exist in nature in all three states and four types - metals, non-metals, metalloids and inert gases. They have only one kind of atom.</p> | <p>Compounds can also exist in all three states. They have different elements combined together.</p> | <p>Mixtures can exist in all states of matter. They have different substances of different kinds.</p> |

| properties | The properties of elements | Compounds | Mixtures |
|------------|---|---|---|
| | depend upon whether they are metals, non-metals, metalloids or noble gases. | form when two or more elements combine chemically in a fixed ratio. | form when different substances mixed together |
| | It has the same properties of its atoms. | Compounds have their properties different from their constituting elements. | They are either homogeneous or heterogeneous. They are not pure. They can be separated by physical means, when they are heterogeneous |
| | Elements are made up of one kind of atoms. They cannot be converted into simpler substances by neither physical nor chemical means. They are pure substances. | In every sample of a compound, the elements are present in a fixed proportion. Compounds are homogeneous and are pure substances. When a compound forms energy either evolves or gets absorbed. | |

30. Give reasons for the following.

- a) Solids have a definite shape and are highly rigid while gases have ~~no~~ no definite shape and are least rigid.

Ans Solids have definite shape and are highly ~~rigid~~ rigid because their molecules are packed very close. Inter-molecular force is more in solids than in gases and intermolecular space is less in solids than in gases. So, solids are more rigid and definite shape but gases have no definite shape and are least rigid.

- b) Sugar can be distinguished from talcum powder using water.

Ans Sugar can be distinguished from talcum powder using water because ~~the~~ sugar can dissolve in water and talcum powder cannot. So, talcum powder can be ~~separated~~ separated by water in this way.

- c) Water on freezing turns into ice.

Ans Water, on freezing turns into ice because on freezing the particles of water lose their energy. The intermolecular force increases and intermolecular space

decreases, thus, changing water into ice.