# CHEMISTRY

# BOOKS - PEARSON IIT JEE FOUNDATION

# LANGUAGE OF CHEMISTRY AND CHANGES AROUND US

Example

**1.** Distinguish between the following pairs . Justify.

$3O_2$ and $2O_3, 3O$ and $O_3$

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**2.** The formula of a compound of a metal with oxygen is written as MO and that of another metal is written as $M_2O$ .Give reason. What are the formulae of the compounds of the above metals with chlorine ?

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**3.** Find of the total number of atoms in the following :

(a) 1 molecule of aluminium sulphate

(b) 1 molecule of potassium phosphate

(c ) 1 molecule of magnesium nitride

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**4.** A few chemical changes are given below . Write the formulae of the substances involved

I those changes.

(a) Baking soda on strong heating produces sodium carbonate , carbon dioxide and water vapour.

(b) Marble on heating gives calcium oxide and carbon dioxide.

( C ) Rust (iron oxide ) is formed when iron reacts with oxygen in the atmospheric air.

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**5.** Distinguish between the following pairs . Justify.

$3O_2$ and $2O_3, 3O$ and $O_3$

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## Very Short Answer Type Questions

**1.** the symbol of magnesium is _____

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**2.** the smallest particle of an element is called _____

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**3.** Atoms of _____ (or ) _____ can be regarded as molecules.

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**4.** The number of atoms in one molecule of oxygen is _____

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**5.** Three atoms of chlorine are represented as _____.

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**6.** Formula for hydrochloric acid is _____

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**7.** The number of oxygen atoms in one molecule of sulphur trioxide is _____

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**8.** The Latin name of potassium is _____

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**9.** the symbol of manganese is _____

A. Mn

B. M

C. Ma

D. Mg

**Answer: A**

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**10.** The symbol of which among the following elements is derived from it s Latin name ?

A. Zinc

B. Aluminium

C. Iron

D. Calcium

**Answer: C**

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**11.** One molecule of which among the following elements possesses the maximum number of atoms?

A. Ozone

B. Sulphur

C. Chlorine

D. Nitrogen

**Answer: B**

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**12.** Which among the following molecules possesses the maximum number of oxygen atoms?

A. Carbon dioxide

B. Nitric acid

C. Sulphuric acid

D. Calcium oxide

**Answer: C**

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**13.** which among the following contains 12 atoms of oxygen ?

A. 6 molecules of calcium oxide

B. 6 molecules of water

C. 3 molecules of sodium bicarbonate

D. 4 molecules of calcium carbonate

**Answer: D**

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**14.** Identify the incorrect formula among the following .

A. $Mg_2O$

B. $ZnO$

C. $CaO$

D. $SO_3$

**Answer: A**

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**15.** the Latin name of silver is _____

A. Aurum

B. Argentum

C. Stannum

D. Plumbum

**Answer: B**

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**16.** A change which can be reversed is called _____


**17.** Swinging of clock pendulum is a _____ change.

**18.** Rusting of iron is a _____ change .(periodic , non- periodic , desirable)

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**19.** Magnetization of iron is a _____ change . (physical chemical).

Watch Video Solution

**20.** Burning of coal is a _____ change. (physical, chemical)

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**21.** Identify a chemical change among the following.

A. Production of sound

B. Magnetization of iron

C.

D.

**Answer: C**

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**22.** An example of non-perodic change is

A. Change of fast

B. chemical show

C. Beating of heart

D. Earthquakes

**Answer: D**

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**23.** Bursting of cracker is a _____ and _____ change,

A. Chemical fast

B. chemical slow

C. physical fast

D. physical slow

**Answer: A**

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**24.** The burning of candle is a _____ change.

A. Perioic and irreversible

B. Reversible and chemical

C. Non-periodic and reversible

D. Chemical and irreversible

**Answer: D**

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**25.** Identify a true statement among the following.

A. In a physical change composition changes.

B. Chemical change can easily be reversec.

C. physical change is a temporary change

D. In a chemical change no new substance (s) is / are formed.

**Answer: C**

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## Short Answer Type Questions

**1.** Define the following: Atom, Molecule , Symbol, Formula

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**2.** Write the formulae for the following

A. Ozone

B. Phosphorus

C. Neon

D.

**Answer:**

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**3.** Write the names of the elements with the following symbols.

A. Fe

B. Zn

C. Al

D. C

**Answer:**

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**4.** Represent the following in terms of their formulae.

A. 5 atom of sodium

B. 3 molecules of oxygen

C. 4 molecules of hydrochloric acid

D. 10 molecules of carbon monoxide

**Answer:**

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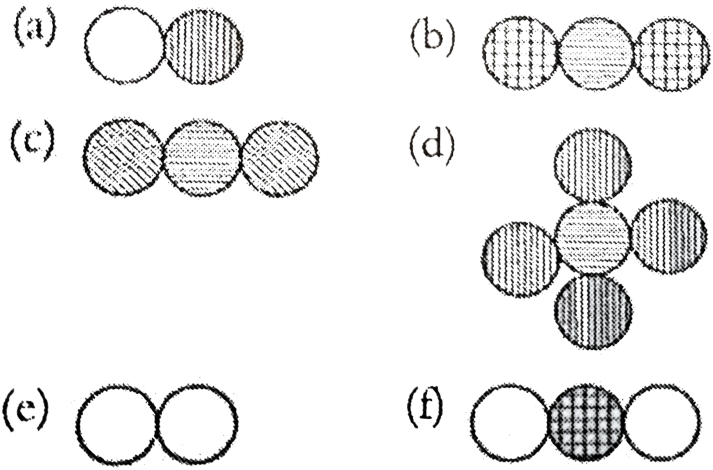
**5.** Molecules of some elements and compounds are given below Identify hydrogen ,hydrogen chloride water , carbon, dioxide , carbon disulphide, carbon tetrachloride.

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**6.** Write the formulae of different compounds formed among the given elements

| Element | Combining power |
|---|---|
| Ca | 2 |
| O | 2 |
| Fe | 3 |
| S | 2 |
| Na | 1 |

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**7.** Identify the combining power of the elements present in the following compounds

A. $A_2B$

B. $X_2Y_3$

C. $DE_2$

D. $G_3H_2$

**Answer:**

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**8.** Write the compounds of aluminium with the following elements

Oxygen , Sulphur, Nitrogen.

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**9.** Complete the following table.

| | Molecule | Elements | Total number of atoms in one molecule |
|---|---|---|---|
| (a) | Sodium hydroxide | — | — |
| (b) | Calcium carbonate | — | — |
| (c) | Methane | — | — |
| (d) | Nitrogen dioxide | — | — |
| (e) | Glucose | — | — |
| (f) | Baking soda | — | — |
| (g) | Silicon dioxide | — | — |
| (h) | Vinegar | — | — |
| (i) | Sugar | — | — |
| (j) | Washing soda | — | — |

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**10.** Calculate the ratio of the number of atoms of the first elements to the last elements in the formulae of the following compounds

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**11.** Classify the following into solids and liquids Glucose, Vinegar Nitric acid , Sodium hydroxide, Baking soda and Sugar.

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**12.** Match the following

| Column A | | | Column B | |
|---|---|---|---|---|
| (A) | $3SO_2$ | ( ) | (a) | Four atoms of oxygen |
| (B) | $7CO$ | ( ) | (b) | Eight atoms of oxygen |
| (C) | $2O_2$ | ( ) | (c) | Six atoms of oxygen |
| (D) | $2H_2SO_4$ | ( ) | (d) | Five atoms of oxygen |
| (E) | $5\ H_2O$ | ( ) | (e) | Twelve atoms of oxygen |
| (F) | $6\ NO_2$ | ( ) | (f) | Seven atoms of oxygen |

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**13.** Match the following

| Elements | Latin name | Symbol |
|---|---|---|
| (A) Sodium | (a) Stannum | (i) Sn |
| (B) Iron | (b) Natrium | (ii) Pb |
| (C) Gold | (c) Ferrum | (iii) Na |
| (D) Lead | (d) Aurum | (iv) Fe |
| (E) Tin | (e) Plumbum | (v) Au |

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**14.** Write the symbols for the following elements.

(a) Boron (b) Sulphur

(c ) Argon (d) Calcium

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**15.** Give two example for the following

A. fast changes

B. Desirable changes

C. non- periodic changes

D. Physical changes

**Answer:**

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**16.** Define the following: Chemical change, Reversible change, Periodic change physical change

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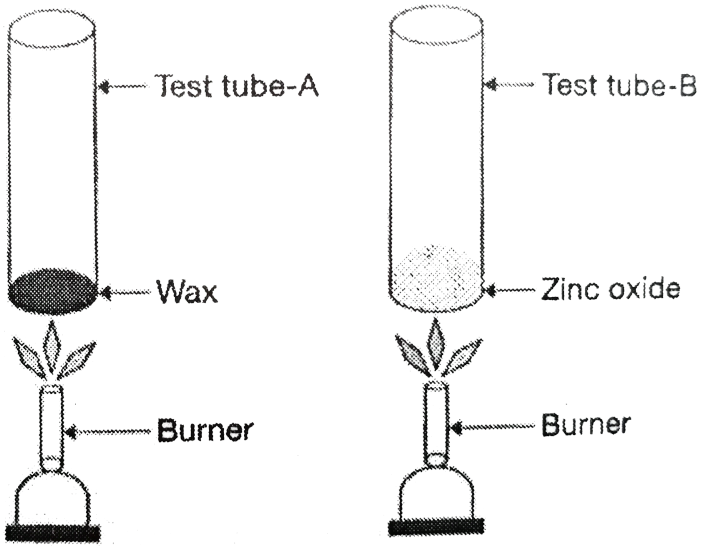
**17.** Classify the following changes as reversible and irrefversible changes.




A. Burning of candle

B. Glowing of bulb

C. Freezing of water

D. Curdling of milk

**Answer:**

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**18.** Analyse the above diagrams and answer the following questions.

(a) Identify the test tube (s) in which new substance (s) is / are formed.

(b) Does the composition change in all the test tubes ? Give reasons .

(C ) Identify the colour changes associated with the relevant physical change given.

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**19.** State three differences between a physical change and a chemical change.

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**20.** Give reasons for the following

(a) When magnesium is burnt in air the weight of white ash obtained is more than magnesium metal.

(b) The weight of rusted iron is more than that of the original metal.

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**21.** Classify the following into physical and chemical changes.

(a) Expansion of metals on heating

(b) Crystallization of salts from their solutions

(C ) Blackening of silverware

(d) Ripening of fruits

(E ) Cooking of food

(F) Melting of ice

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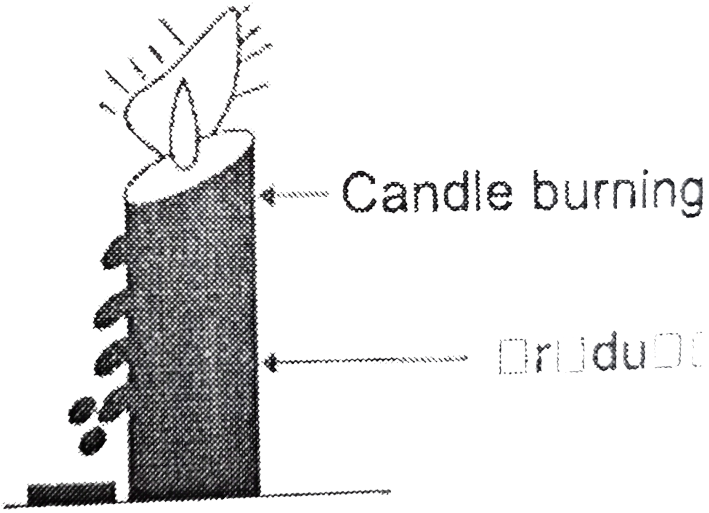
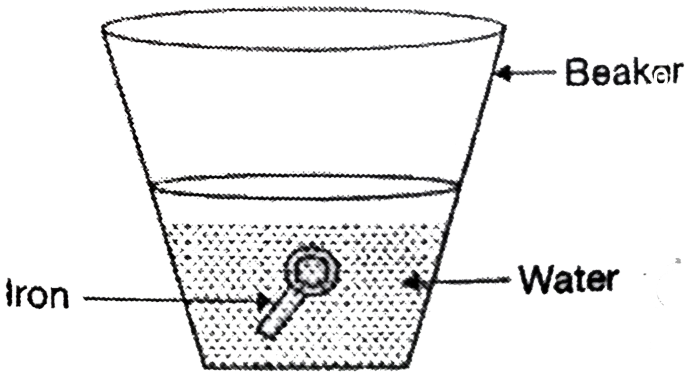
**22.** (a) Identify the products formed.

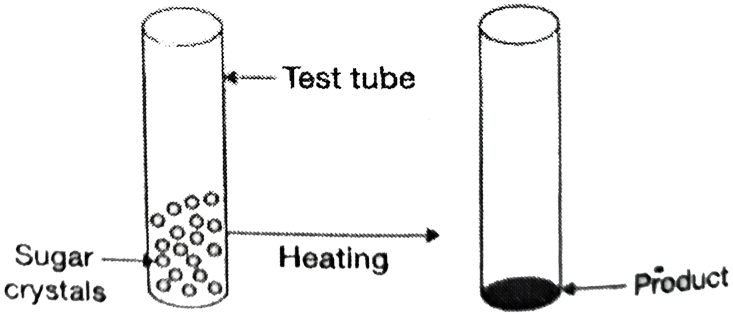



(B) Observe the following figure and identify

the change associated with it .




( C) Name the product formed in the following change

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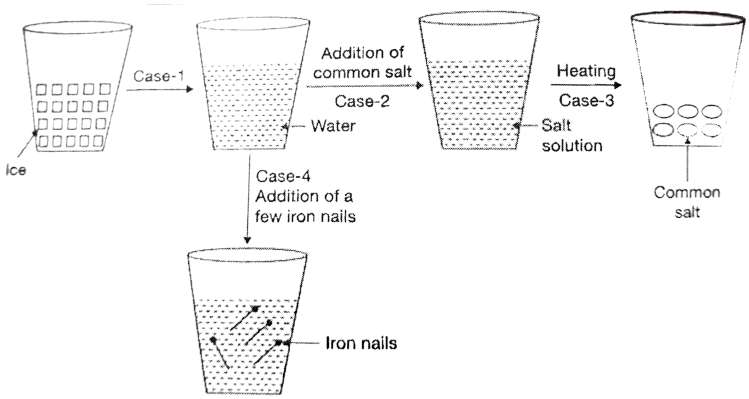


**23.**

Explain the type of changes involved in the above chart.

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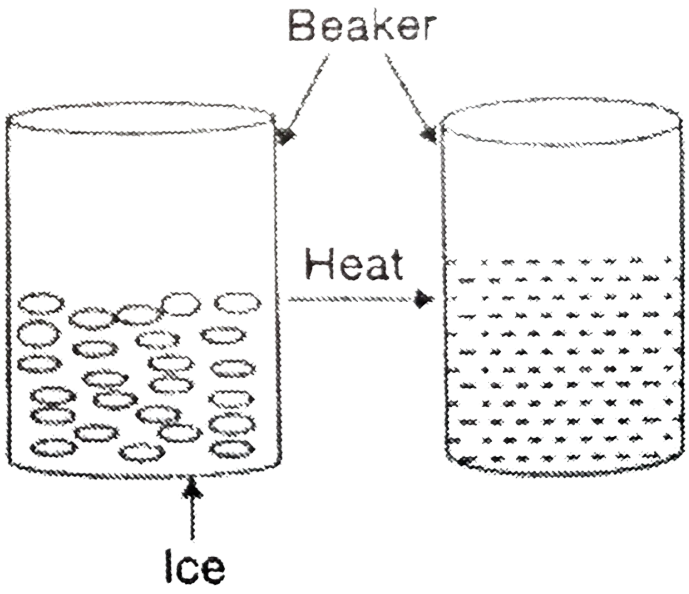
**24.** Study the diagram given below and answer the following questions.




(a) Does the composition remain the same

(b) Name the type of change involved .

(c ) Write any two characteristics of the above change.

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**25.** A desirable change is always associated with an undesirable change. Give as example.

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## Concept Application

**1.** Arrange the following compounds in the increasing order of the number of oxygen atoms in one molecule.

Glucose ,sugar, baking ,soda,sand, sulphuric, acid

A. Glucose $<$ sugar $<$ baking soda $<$ sand $<$ sulphuric acid

B. Sugar $<$ glucose $<$ baking soda $<$ sand $<$ sulphuric acid

C. sand $<$ baking soda $<$ sulphuric acid $<$ glucose $<$ sugar

D. Glucose $<$ sulphuric acid $<$ sugar $<$ baking soda $<$ sand

**Answer: C**

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**2.** Bursting of cracker is a _____ and _____ change,

A. physical ,fast

B. chemical , fast

C. chemical ,slow

D. physical, slow

**Answer: B**

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**3.** Identify the incorrect formulae among the following : (A) $CaO_2$ (B) $Na_2O$

(C ) $Mg_3S_2$ (D) $Mg_2O$

A. A,B,D

B. A,C,D

C. C,D,E

D. B,C,D

**Answer: B**

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**4.** Match the following

| Column A Name of the Compound | | | Column B Constituents Present |
|---|---|---|---|
| (A) Marble | ( ) | (a) | Sodium, carbon, oxygen, hydrogen |
| (B) Vinegar | ( ) | (b) | Nitrogen, hydrogen, oxygen |

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**5.** What type of change is formation of coal ?

| Option | Desirable Change | Reversible Change | Slow Change | Periodic Change |
|---|---|---|---|---|
| (a) | ✓ | ✗ | ✓ | ✗ |
| (b) | ✗ | ✓ | ✓ | ✗ |
| (c) | ✓ | ✗ | ✓ | ✗ |
| (d) | ✓ | ✗ | ✗ | ✓ |

| Column A Name of the Compound | | | Column B Constituents Present |
|---|---|---|---|
| (C) Nitric acid | ( ) | (c) | Calcium, carbon, oxygen |
| (D) Blue vitriol | ( ) | (d) | Carbon, hydrogen, oxygen |
| (E) Washing soda | ( ) | (e) | Copper, sulphur, hydrogen, oxygen |

A. $A-e, B-d, C-a, D-c, E-b$

B. $A-c, B-d, C-e, D-b, E-a$

C. $A-b, B-e, C-a, D-c, E-d$

D. $A-c, B-d, C-b, D-e, E-a$

**Answer: C**

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**6.** Arrange the following compounds in the increasing order of the number of oxygen atoms in one molecule.

Glucose ,sugar, baking ,soda,sand, sulphuric, acid

A. Glucose $<$ sugar $<$ baking soda $<$ sand $<$ sulphuric acid

B. Sugar $<$ glucose $<$ baking soda $<$ sand $<$ sulphuric acid

C. Sand $<$ baking soda $<$ sulphuric acid $<$ glucose $<$ sugar

D. Glucose $<$ sulphuric acid $<$ sugar $<$ baking soda $<$ sand

**Answer: C**

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**7.** Bursting of cracker is a _____ and _____ change,

A. physical, fast

B. chemical, fast

C. chemical, slow

D. physical, slow

**Answer: B**

Watch Video Solution

**8.** Identify the incorrect formulae among the following:

(A) $CaO_2$ (B) $Na_2O$

(C ) $Mg_3S_2$ (D) $Mg_2O$

(E) $CaS$

A. A, B, D

B. A, C, D

C. C, D, E

D. B, C, D

**Answer: B**

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**9.** Match the following:

| | Column A Name of the Compound | | | Column B Constituents Present |
|---|---|---|---|---|
| (A) | Marble | ( ) | (a) | Sodium, carbon, oxygen, hydrogen |
| (B) | Vinegar | ( ) | (b) | Nitrogen, hydrogen, oxygen |

| | Column A Name of the Compound | | | Column B Constituents Present |
|---|---|---|---|---|
| (C) | Nitric acid | ( ) | (c) | Calcium, carbon, oxygen |
| (D) | Blue vitriol | ( ) | (d) | Carbon, hydrogen, oxygen |
| (E) | Washing soda | ( ) | (e) | Copper, sulphur, hydrogen, oxygen |

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**10.** What type of change is formation of coal?

| Option | Desirable Change | Reversible Change | Slow Change | Periodic Change |
|---|---|---|---|---|
| (a) | ✓ | ✗ | ✓ | ✗ |
| (b) | ✗ | ✓ | ✓ | ✗ |
| (c) | ✓ | ✗ | ✓ | ✗ |
| (d) | ✓ | ✗ | ✗ | ✓ |

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## Assessment Test

**1.** Name the elements with the following symbols.

(a) C (b) N (c ) Si (d) Br

(e ) Cl (f) Ag (g) W (h) Hg

(i) Co (j) Cr

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**2.** Complete the following table

| Molecules | Names of elements | Number of atoms | Name of molecules |
|---|---|---|---|
| 1 $NaOH$ | – | – | – |
| – | – | 16 | Ammonia |
| – | Sodium, hydrogen, carbon, oxygen | 12 | – |
| 3 $H_2SO_4$ | – | – | – |
| – | – | 5 | Methane |

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**3.** Match the followign based on the number of atoms present in one molecule.

| Column A | | | Column B |
|---|---|---|---|
| (A) Carbon dioxide | ( ) | (a) | Ferrous sulphide |
| (B) Calcium carbonate | ( ) | (b) | Sodium oxide |
| (C) Aluminium chloride | ( ) | (c) | Copper sulphate |
| (D) Hydrochloric acid | ( ) | (d) | Methane |
| (E) Sodium carbonate | ( ) | (e) | Phosphorous acid |
| (F) Sulphuric acid | ( ) | (f) | Sulphur trioxide |

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**4.** Write the formulae of compounds with the following information and the names of the molecules.

A. 2 phosphorus atoms 5 oxygen atoms.

B. 1 calcium atom 2 oxygen atoms 2 hydrogen atoms.

C. 1 iron atom ,1 sulphur atom, 4 oxygen atoms.

D. 1potassium atom, 1 chlorine atom 3 oxygen atoms

**Answer:**

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**5.** Find the odd one out among the following sets give reasons.

A. Nitrogen fluorine , oxygen , hydrogen , ozone.

B. $CaO, NaCI, Co, FeS, KNO_3$

C. $Se, K, Cu, Pb, SI$

D. Bromine , iodine ,carbon ,sulphur, silicon

**Answer:**

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**6.** Identify true or false statements among the following and rewrite the correct statements.

A. An elements is made up of many kinds of atoms

B. $3O_2$ contains six atoms of oxygen.

C. One molecule of calcium oxide contains three atoms,

D. formula of nitrogen dioxide is $NO_2$

**Answer:**

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**7.** Identify the correct statements from the following

A. Symbol of copper is Co

B. Silicon is a liquid

C. The German name of tin is stannum

D. Blue vitriol is $CuSO_4.6H_2O$

**Answer:**

Watch Video Solution

**8.** Identify true or false statements among the following

A. Germinations is a fast change.

B. Melting is an irreversible change.

C. Water cycle involves chemical change.

D. Beating of heart is a periodic change.

**Answer:**

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**9.** Are all chemical changes desirable changes ?

Justify with at least five example.

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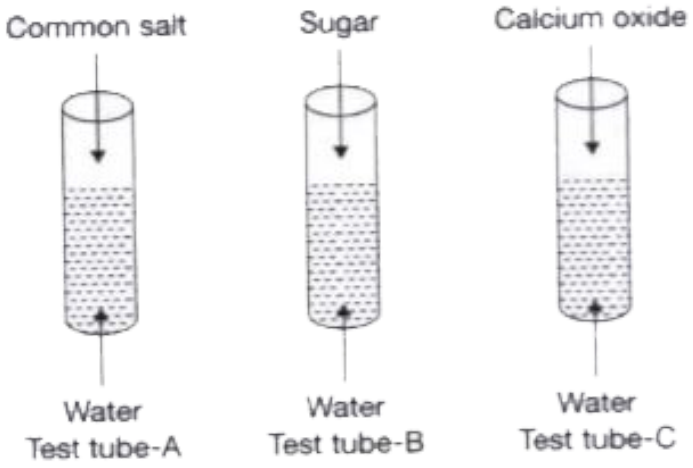
**10.** (a) Identify the test tube(s) in which a chemical change take place.

(b) Does the molecular composition remain the same in all the test tubes?

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**11.** Identify the physical and chemical changes among the following

A. Preparation of liquefied petroleum gas

B. Usage of liquefied petroleum gas

C. Formation of manure

D. Formation of glass

**Answer:**

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**12.** In which among the following changes, does the molecular composition remain the same? Justify.

(a) Photosynthesis (b) Digestion of food

(c ) Formation of clouds (d) Moulding of glass

(e) Melting of butter (f) Perspiration

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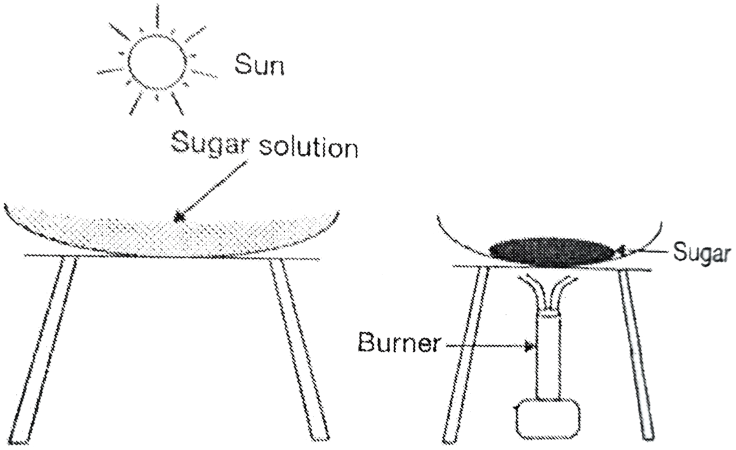


**13.** Analyse the observation of the above experiments

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**14.** Classify the following into different changes.

(a) Making of dough from flour

(b) Digestion of food

(c ) Germination of seeds

(d) Burning of paper

A. Making of dough from flour

B. Digestion of food

C. Germination of seeds

D. Burning of paper

**Answer:**

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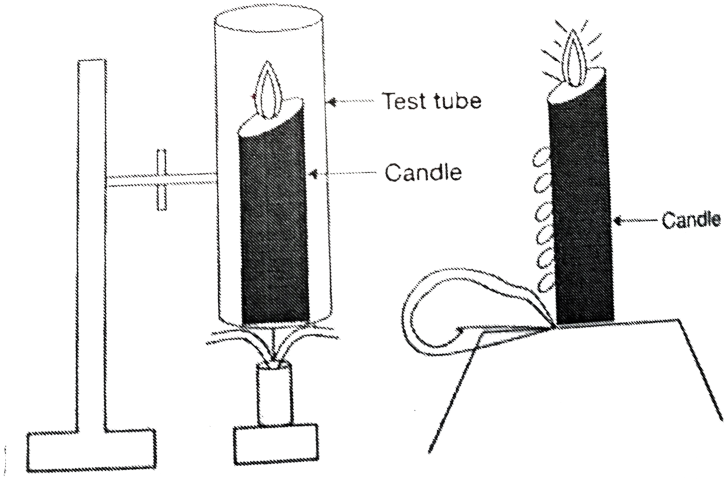
**15.** Study the diagrams and make a comment on the type of changes.

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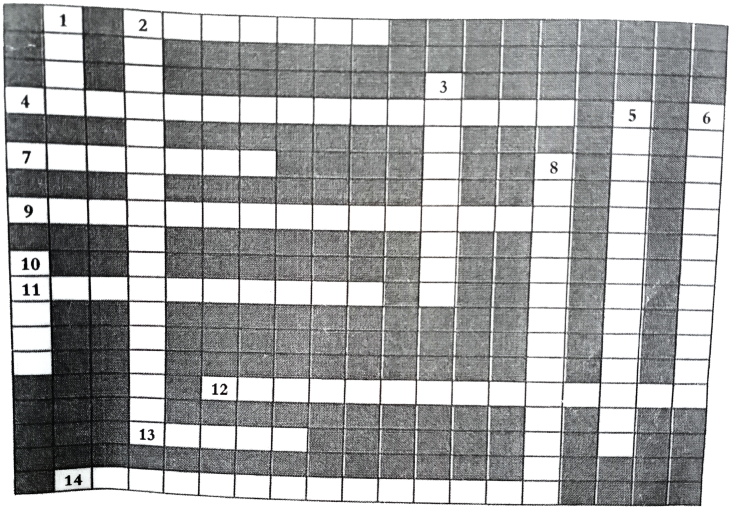
Crossword

**1.**



Across

2. 2S represents two atoms of
4. Change of weather from winter to summer
7. Latin name of lead
9. Washing soda
11. Latin name of mercury
12. Phases of moon
13. The number of hydrogen atoms in two molecules of methane
14. Blue vitriol

Down

1. The number of atoms present in one molecule of nitric acid
2. Baking soda
3. The name of element with symbol Mn is
5. The change involved in the heating of zinc oxide
6. The name of the compound Pbs
8. Burning of coal
10. The number of oxygen atoms present in one molecule of silver nitrate

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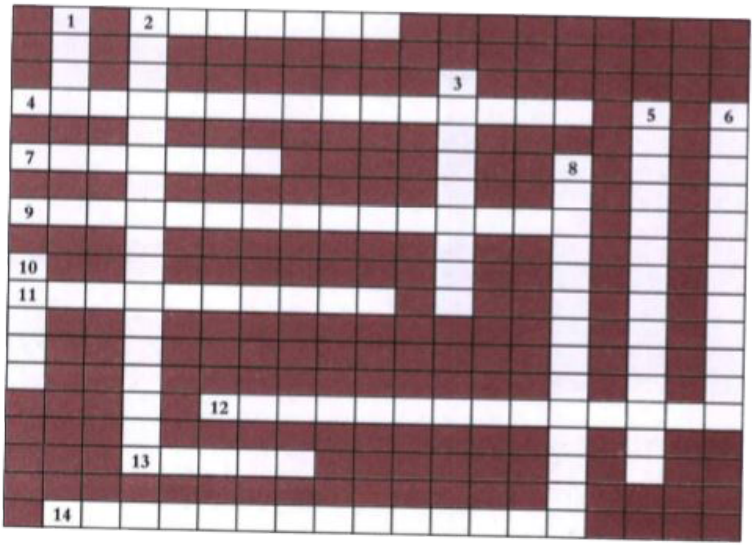
**2.**



Across

2. 2S represents two atoms of
4. Change of weather from winter to summer
7. Latin name of lead
9. Washing soda
11. Latin name of mercury
12. Phases of moon
13. The number of hydrogen atoms in two molecules of methane
14. Blue vitriol

Down

1. The number of atoms present in one molecule of nitric acid
2. Baking soda
3. The name of element with symbol Mn is
5. The change involved in the heating of zinc oxide
6. The name of the compound PbS
8. Burning of coal
10. The number of oxygen atoms present in one molecule of silver nitrate

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## Test Your Concepts Very Short Answer Type Questions Fill In The Blanks

**1.** The symbol of magnesium is _____.

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**2.** The smallest and ultimate particle of an element is called _____.

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**3.** Atoms of _____ (or ) _____ can be regarded as molecules.

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**4.** The number of atoms in one molecule of oxygen is _____.

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**5.** Three atoms of chlorine are represented as _____.

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**6.** Formula for hydrochloric acid is _____.

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**7.** The number of oxygen atoms in one molecule of sulphur trioxide is _____

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**8.** The Latin name of potassium is _____

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**9.** A change which can be reversed is called _____ change.

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**10.** Swinging of clock pendulum is a _____ change.

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**11.** Rusting of iron is a _____ change .(periodic , non- periodic , desirable)

Watch Video Solution

**12.** Magnetization of iron is a _____ change. (physical, chemical, irreversible).

Watch Video Solution

**13.** Burning of coal is a _____ change. (physical, chemical)

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## Test Your Concepts Very Short Answer Type Questions Select The Correct Alternative From

## The Given Options

**1.** the symbol of manganese is _____

A. Mn

B. M

C. Ma

D. Mg

**Answer: A**

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**2.** The symbol of which among the following elements is derived from it s Latin name ?

A. Zinc

B. Aluminium

C. Iron

D. Calcium

**Answer: C**

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**3.** One molecule of which among the following elements possesses the maximum number of atoms?

A. Ozone

B. Sulphur

C. Chlorine

D. Nitrogen

**Answer: B**

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**4.** Which among the following molecules possesses the maximum number of oxygen atoms?

A. Carbon dioxide

B. Nitric acid

C. Sulphur acid

D. Calcium oxide

**Answer: C**

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**5.** Which among the following contains 12 atoms of oxygen?

A. 6 molecules of calcium oxide

B. 6 moelcules of water

C. 3 molecules of sodium bicarbonate

D. 4 molecules of calcium carbonate

**Answer: D**

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**6.** Identify the incorrect formula among the following.

A. $Mg_2O$

B. ZnO

C. CaO

D. $SO_3$

**Answer: A**

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**7.** The Latin name of silver is _____.

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**8.** Identify a chemical change among the following.

A. Production of sound

B. Magnetization of iron

C. Curdling of milk

D. Melting of ghee

**Answer: C**

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**9.** An example of non-perodic change is

A. Change of seasons

B. Phases of moon

C. Beating of heart

D. Earthquakes

**Answer: D**

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**10.** Bursting of cracker is a _____ and _____ change,

A. chemical, fast

B. chemical, slow

C. physical, fast

D. physical, slow

**Answer: A**

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**11.** The burning of candle is a _____ change.

A. Periodic and irreversible

B. Reversible and chemical

C. Non-periodic and reversible

D. Chemical and irreversible

**Answer: D**

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**12.** Identify a true statement among the following.

A. In a physical change composition changes

B. Chemical change can easily be reversed

C. Physical change is a temporary change

D. In a chemical change no new substance(s) is/are formed

**Answer: C**

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## Test Your Concepts Short Answer Type Questions

**1.** Define the following.

Atom

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**2.** Define the following.

Molecule


**3.** Define the following.

Symbol

**4.** Define the following.

Formula

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**5.** Write the formulae for the following.

(a) Ozone (b) Phosphorus (c ) Neon

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**6.** Write the names of the elements with the following symbols.

A. Fe

B. Zn

C. Al

D. C

**Answer:**

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**7.** Represent the following in terms of their formulae.

(a) 5 atoms of sodium

(b) 3 molecules of hydrochloric acid

(c ) 4 molecules of hydrochloric acid

(d) 10 moleculesof carbon monoxide

(e) 2 molecules of nitrogen dioxide

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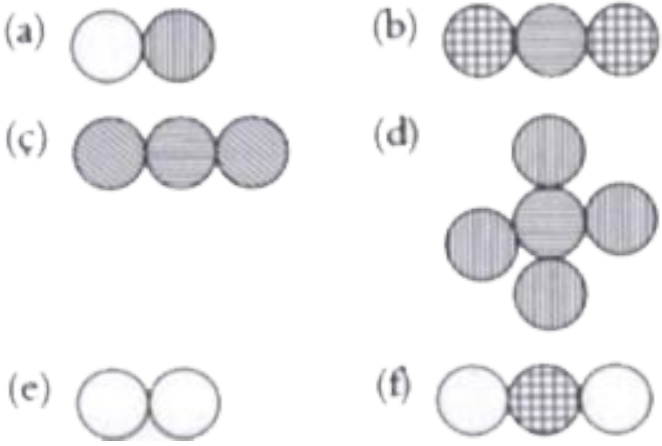
**8.** Molecules of some elements and compounds are given below. Identify

hydrogen, hydrogen chloride, water, carbon dioxide, carbon disulphide, carbon tetrachloride.

(a)

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**9.** Write the formulae of different compounds formed among the given elements.

| Element | Combining power |
|---|---|
| Ca | 2 |
| O | 2 |
| Fe | 3 |
| S | 2 |
| Na | 1 |

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**10.** Identify the combining power of the elements present in the following compounds

A. $A_2B$

B. $X_2Y_3$

C. $DE_2$

D. $G_3H_2$

**Answer:**

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**11.** Write the compounds of aluminiium with the following elements.

Oxygen, Sulphur, Nitrogen.

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**12.** Complete the following table.

| | Molecule | Elements | Total number of atoms in one molecule |
|---|---|---|---|
| (a) | Sodium hydroxide | – | – |
| (b) | Calcium carbonate | – | – |
| (c) | Methane | – | – |
| (d) | Nitrogen dioxide | – | – |
| (e) | Glucose | – | – |
| (f) | Baking soda | – | – |
| (g) | Silicon dioxide | – | – |
| (h) | Vinegar | – | – |
| (i) | Sugar | – | – |
| (j) | Washing soda | – | – |

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**13.** Identify the incorrect formulae and correct them.

(a) $CaO_2$ (b) $Mg_2S_3$

(c ) $FeO_2$ (d) $PbO$

(e) $Ca_3S_2$ (f) $PbS$

(g) $Zn_2O$ (h) $Fe_2S$

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**14.** Calculate the ratio of the number of atoms of the first element to the last in the formulae

of the following compounds.

(a) Common salt (b) Chalk

(c ) Nitric acid (d) Ammonia

(e) Hydrogen sulphide (f) Sugar

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**15.** Classify the following into solids and liquids Glucose, Vinegar Nitric acid , Sodium hydroxide, Baking soda and Sugar.

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**16.** Match the following:

| | Column A | | | Column B |
|---|---|---|---|---|
| (A) | $3SO_2$ | ( ) | (a) | Four atoms of oxygen |
| (B) | $7CO$ | ( ) | (b) | Eight atoms of oxygen |
| (C) | $2O_2$ | ( ) | (c) | Six atoms of oxygen |
| (D) | $2H_2SO_4$ | ( ) | (d) | Five atoms of oxygen |
| (E) | $5\ H_2O$ | ( ) | (e) | Twelve atoms of oxygen |
| (F) | $6\ NO_2$ | ( ) | (f) | Seven atoms of oxygen |

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**17.** Match the following:

| Elements | Latin name | Symbol |
|---|---|---|
| (A) Sodium | (a) Stannum | (i) Sn |
| (B) Iron | (b) Natrium | (ii) Pb |
| (C) Gold | (c) Ferrum | (iii) Na |
| (D) Lead | (d) Aurum | (iv) Fe |
| (E) Tin | (e) Plumbum | (v) Au |

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**18.** Write the symbols for the following elements.

(a) Boron (b) Sulphur

(c ) Argon (d) Calcium

(e) Selenium (f) Copper

(g) Lead (h) Barium

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**19.** Give two examples for the following.

(a) Fast changes

(b) Desirable changes

(c ) Non-periodic changes

(d) Physical changes

(e) Chemical changes

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**20.** Define the following.

Chemical change

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**21.** Define the following.

Reversible change

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**22.** Define the following.

Periodic change

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**23.** Define the following.

Physical change

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**24.** Classify the following changes as reversible and irreversible changes.

(a) Burning of candle

(b) Glowing of bulb

(c ) Freezing of water

(d) Curdling of milk

(e) Burning of paper

(f) Magnetization of iron

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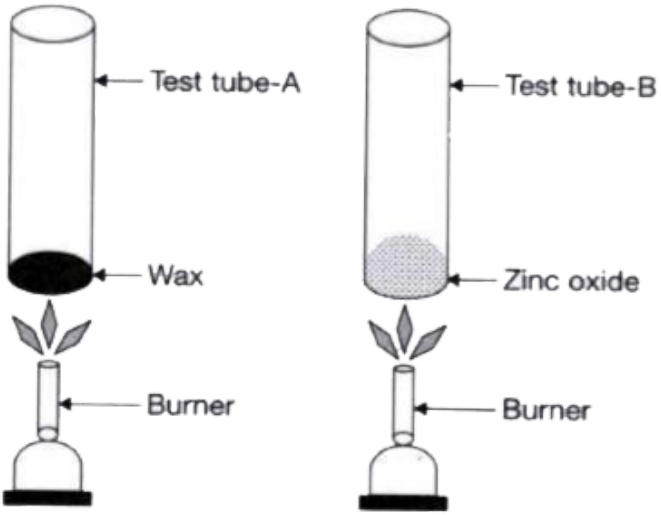
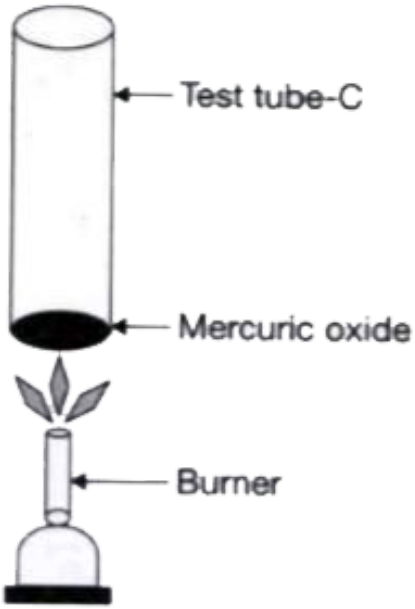
**25.**






Analyse the above diagrams and answer the following questions.

Identify the test tube(s) in which new substance(s) is/are formed.

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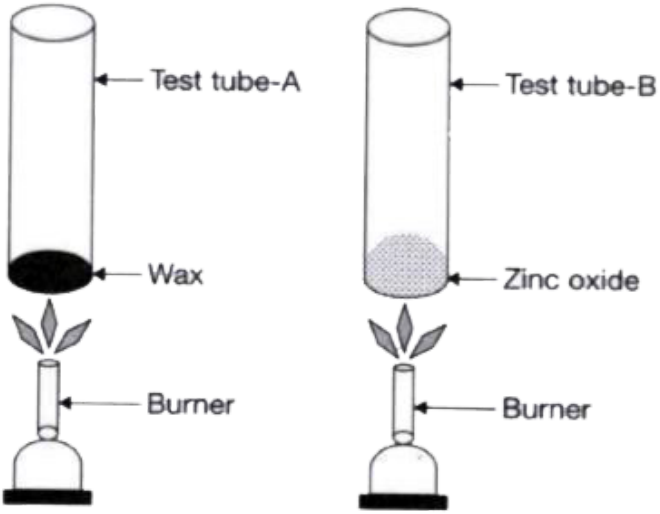
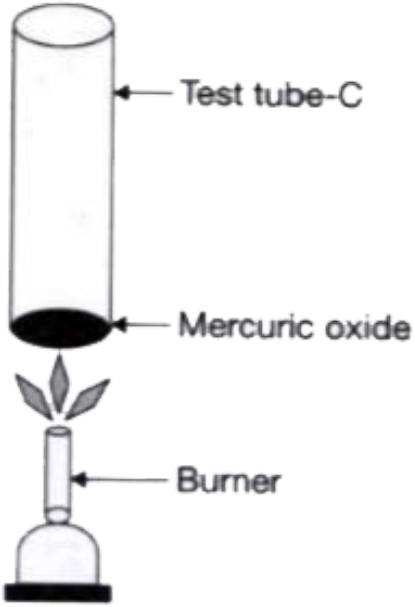
**26.**


Test tube-A
Wax
Burner
Test tube-B
Zinc oxide
Burner


Test tube-C
Mercuric oxide
Burner

Analyse the above diagrams and answer the following questions.

Does the composition change in all the test tubes? Give reasons.

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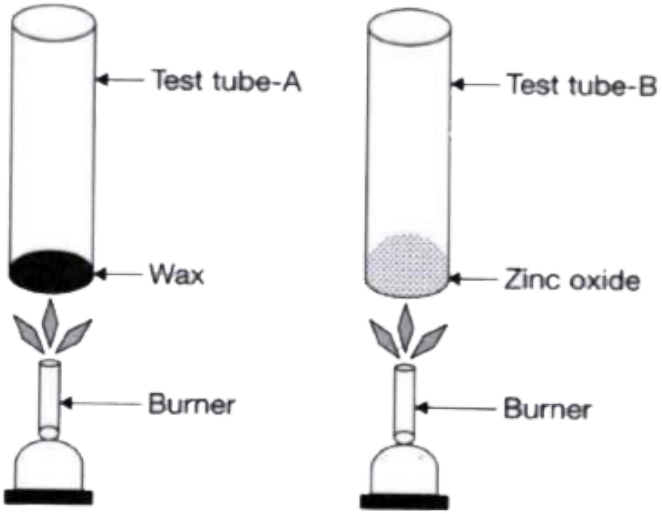
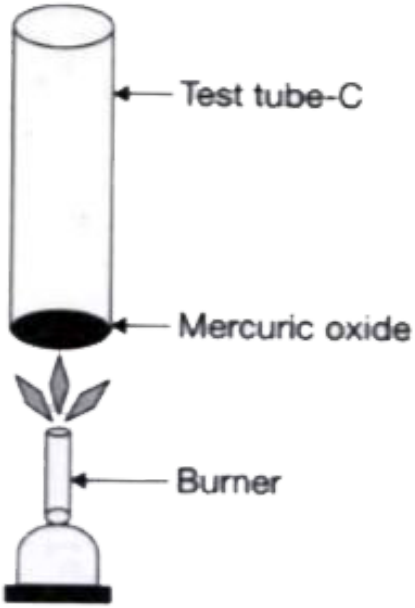

Test tube-A
Wax
Burner
Test tube-B
Zinc oxide
Burner

**27.**


Test tube-C
Mercuric oxide
Burner

Analyse the above diagrams and answer the following questions.

Identify the colour changes associated with the relevant physical change given.

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**28.** State three differences between a physical change and a chemical change.

Watch Video Solution

**29.** Classify the following into physical and chemical changes.

(a) Expansion of metals on heating

(b) Crystallization of salts from their solutions.

(c ) Blackening of silverware

(d) Ripening of fruits

(e) Cooking of food

(f) Melting of ice

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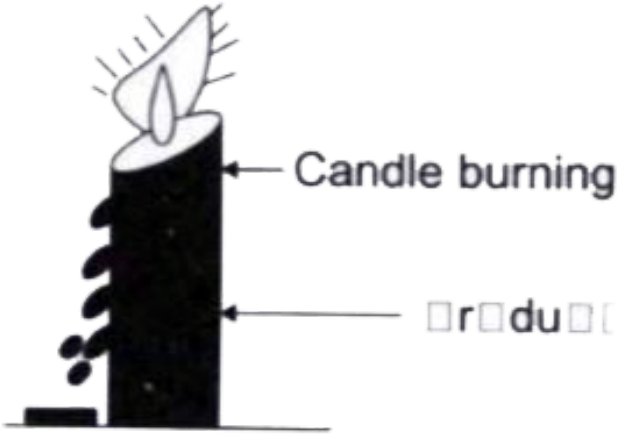
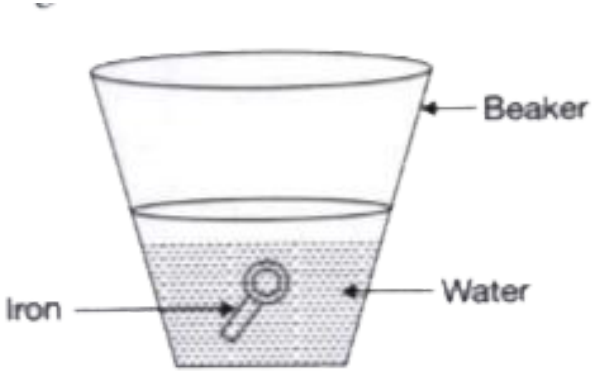
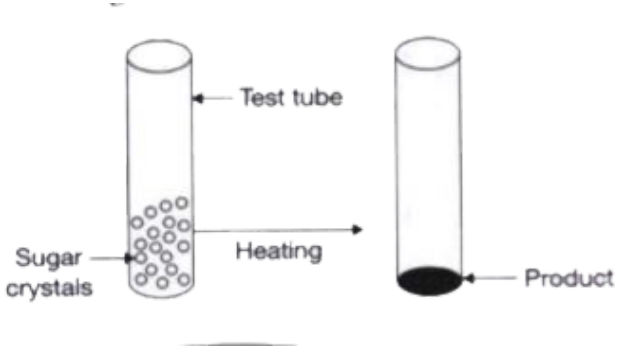
**30.** (a) Identify the products formed.




(b) Observe the following figure and identify the change associated with it.



(c ) Name the product formed in the following change.

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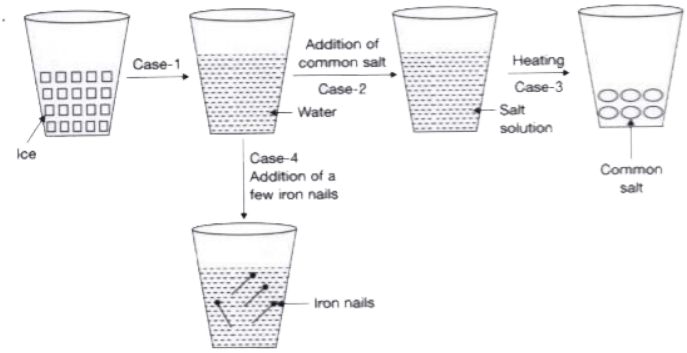


**31.**

Explain the type of changes(physical/chemical) involved in the above chart.

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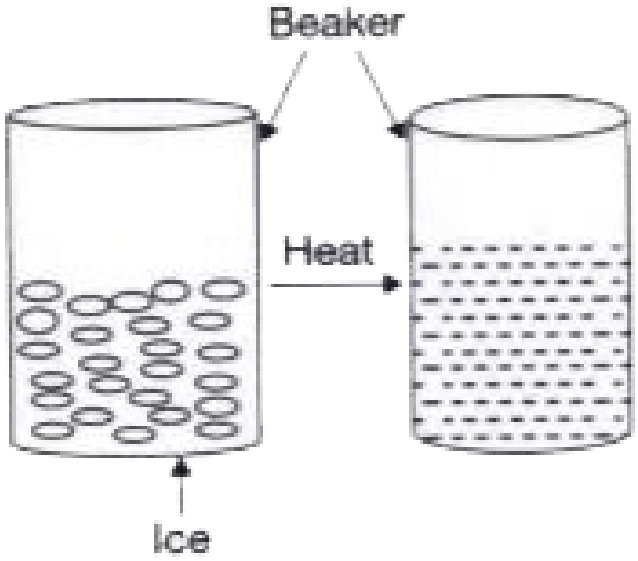
**32.** Study the diagram given below and answer the following questions.




(a) Does the composition remain the same?

(b) Name the type of change involved.

(c ) Write any two characteristics of the above change.

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**33.** A desirable change is always associated with an undesirable change. Give as example.

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## Test Your Concepts Short Answer Type Questions Give Reason For The Following

**1.** When magnesium is burnt in air, the weight of white ash obtained is more than magnesium metal.

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**2.** The weight of rusted iron ismore than that of the original metal.

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## Assessment Test Test 1

**1.** Name the elements with the following symbols.

(a) C (b) N (c ) Si (d) Br

(e ) Cl (f) Ag (g) W (h) Hg

(i) Co (j) Cr

A. C

B. N

C. Si

D. Br

**Answer:**

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**2.** Complete the following table.

| Molecules | Names of elements | Number of atoms | Name of molecules |
|---|---|---|---|
| 1 $NaOH$ | – | – | – |
| – | – | 16 | Ammonia |
| – | Sodium, hydrogen, carbon, oxygen | 12 | – |
| 3 $H_2SO_4$ | – | – | – |
| – | – | 5 | Methane |

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**3.** Match the following based on the number of atoms present in one molecule.

| | Column A | | | Column B |
|---|---|---|---|---|
| (A) | Carbon dioxide | ( ) | (a) | Ferrous sulphide |
| (B) | Calcium carbonate | ( ) | (b) | Sodium oxide |
| (C) | Aluminium chloride | ( ) | (c) | Copper sulphate |
| (D) | Hydrochloric acid | ( ) | (d) | Methane |
| (E) | Sodium carbonate | ( ) | (e) | Phosphorous acid |
| (F) | Sulphuric acid | ( ) | (f) | Sulphur trioxide |

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**4.** Write the formulae of compounds with the following information and the names of the molecules.

(a) 2 phosphorus atoms, 5 oxygen atoms.

(b) 1 calcium atom, 2 oxygen atoms, 2 hydrogen atoms.

(c ) 1 iron atom, 1 sulphur atom, 4 oxygen atoms.

(d) 1 potassium atom, 1 chlorine atom, 3 oxygen atoms.

(e) 3 sodium atoms, 1 phosphorus atom, 4 oxygen atoms.

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**5.** Find the odd one out among the following sets. Give reasons.

(a) Nitrogen, fluorine, oxygen, hydrogen, ozone.

(b) CaO, NaCl, Co, FeS, $KNO_3$

(c ) Se, K, Cu, Pb, SI.

(d) Bromine, iodine, carbon, sulphur, silicon.

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**6.** Identify the correct statement from the following.

(a) Symbol of copper is Co

(b) Silicon is a liquid

(c ) The German name of tin is stannum

(d) Blue vitriol is $CuSO_4.6H_2O$

(e) Formula of magnesium sulphide is $Mg_2S$

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**7.** Are all chemical changes desirable changes? Justify with at least five examples.

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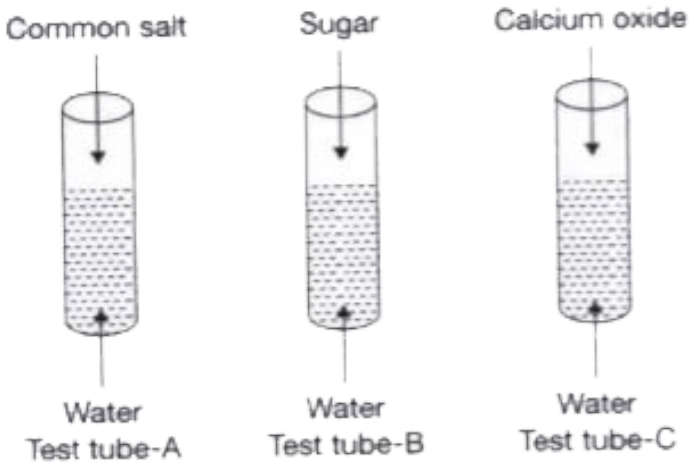
**8.** (a) Identify the test tube(s) in which a chemical change take place.

(b) Does the molecular composition remain

the same in all the test tubes?

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**9.** Identify the physical and chemical changes among the following.

(a) Preparation of liquefied petroleum gas

(b) Usage of liquefied petroleum gas

(c ) Formation of manure

(d) Formation of glass

(e) Breaking of glass

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**10.** In which among the following changes, does the molecular composition remain the same? Justify.

(a) Photosynthesis (b) Digestion of food

(c ) Formation of clouds (d) Moulding of glass

(e) Melting of butter (f) Perspiration

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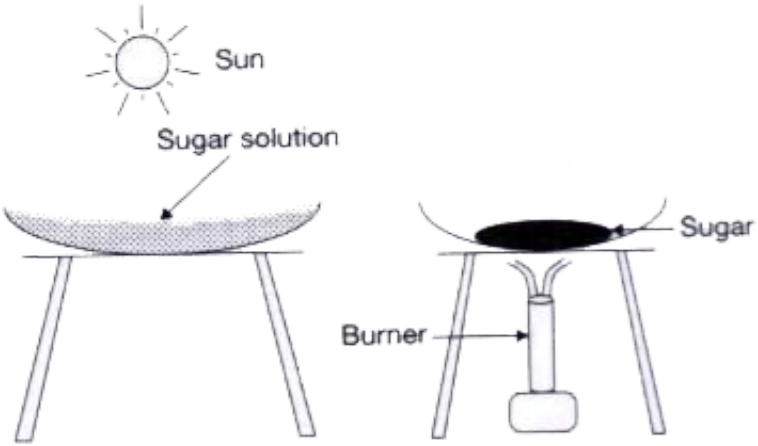
11. 


Analyse the observation of the above experiments.

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**12.** Classify the following into different changes.

(a) Making of dough from flour

(b) Digestion of food

(c ) Germination of seeds

(d) Burning of paper

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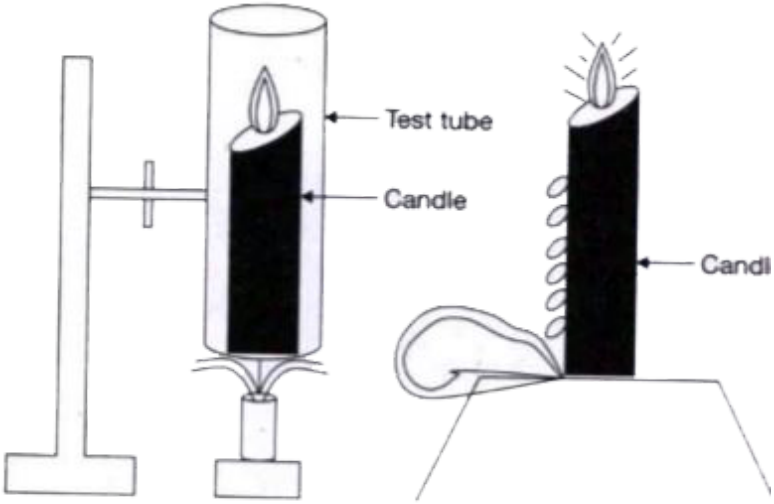
**13.** Study the digrams and makes a comment on the type of changes.

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## Assessment Test Test 1 Identify True Or False Statements Among The Following Rewrite The Correct Statements

**1.** An element is made up of many kinds of atoms.

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**2.** $3O_2$ contains six atoms of oxygen.

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**3.** One molecule of calcium oxide contains three atoms.

Watch Video Solution

**4.** Formula of nitrogen dioxide is $NO_2$.

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**5.** In $Fe_2O_3$, the combining power of iron is 2 and that of oxygen is 3.

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## Assessment Test Test 1 Identify True Or False Statements Among The Following

**1.** Germination is a fast change. (True / False)

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**2.** Melting is an irreversible change.

Watch Video Solution

**3.** State True or False

Water cycle involves chemical change.

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**4.** Beating of heart is a periodic change. ( True / False)

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**5.** High and low tides at sea are a periodic change. (True / False)

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