

8th Science Lesson 4 Questions in English

4] Matter

1. Which of the following statement is incorrect?

- 1) The various objects which exist around us are made of some kind of matter.
- 2) In the universe all manifestations, phenomena and evolution of life are caused by matter and energy
 - a) 1 alone
 - b) 2 alone
 - c) 1, 2
 - d) None

Explanation

In the universe all manifestations, **phenomena and evolution of life are caused by matter and energy**. The various objects which exist around us are made of some kind of matter.

2. Match the following with their respective:

- | | |
|-------------------|----------|
| I. Glass tumbler | 1. Felt |
| II. Agarbatti | 2. Seen |
| III. Wind blowing | 3. Smell |
| a) 1, 3, 2 | |
| b) 2, 1, 3 | |
| c) 2, 3, 1 | |
| d) 3, 2, 1 | |

Explanation

We perceive some of these objects through our senses like sight, touch, hearing, taste and smelling. A **glass tumbler can be seen**, **agarbatti burning can be recognized by its smell** whereas **wind blowing** can be felt.

3. Assertion(A): Matter can be defined as anything, which occupies space or volume and mass and be perceived by our senses

Reason(R): All kinds of matter possess mass and occupy space, of course some are heavy and others are light

- a) Both (A) and (R) are correct, but (R) does not explain (A)
- b) Both (A) and (R) are wrong
- c) Both (A) and (R) are correct and (R) explains (A)

d) (A) is Correct and (R) is wrong

Explanation

All kinds of **matter possess mass and occupy space**, of course some are heavy and others are light. Thus, **matter** can be defined as anything, which **occupies space or volume and mass** and can be perceived by our senses.

4. Match the following:

- | | |
|-------------|----------------|
| I. Solids | 1. Oxygen |
| II. Liquids | 2. Iron |
| III. Gases | 3. Fruit juice |
- a) 2, 1, 3
b) 2, 3, 1
c) 3, 1, 2
d) 1, 3, 2

Explanation

As we know already matter exists in:

- **Solids:** Substances like wood, stone, sand, **iron** etc.
- **Liquids:** Substances like water, milk, **fruit juice**, etc
- **Gases:** Substances like **oxygen**, nitrogen, carbon dioxide, steam, etc.,

5. By which of the following a matter is composed of?

- 1) Atom
2) Molecule
3) Ions
- a) 1, 2
b) 1, 3
c) 2, 3
d) All the above

Explanation

Matter in any physical state is **composed of smaller particles such as atom, molecules or ions**. Molecules are also made up of atoms of same or different kinds. Hence, atoms are the building blocks of matter.

6. Which of the following statement about atom is correct?

- 1) An atom is the smallest particle of an element, which exhibits all the properties of that element.
- 2) It may or may not exist independently but takes part in every chemical reaction

- a) 1 alone
- b) 2 alone
- c) 1, 2
- d) None

Explanation

An atom is the **smallest particle of an element**, which exhibits all the properties of that element. It **may or may not exist independently but takes part in every chemical reaction**.

7. _____ is the smallest particle of a pure substance

- a) Atom
- b) **Molecule**
- c) Electron
- d) Ion

Explanation

Atoms of the same element or different elements combine to form a molecule. A **molecule is the smallest particle of a pure substance** (element or compound), which can exist independently and retain the physical and chemical properties of the substance.

8. Who used symbols to represent the four basic elements around us?

- a) Aryans
- b) Romans
- c) Dravidians
- d) **Greeks**

Explanation

The symbols in form of the geometrical shapes were those used by the **ancient Greeks** to represent **the four basic elements** around us such as **earth, air, fire and water**.

9. Which of the following statement is correct?

- 1) In the days of alchemists, the different materials that they used were represented by the above-mentioned symbols while they try to change less valuable metal into gold
 - 2) The process was called alchemy and the men who did this work were known as alchemists
- a) 1 alone
 - b) 2 alone
 - c) 1, 2
 - d) **None**

Explanation

In the days of alchemists, the different materials that they used were represented by the above-mentioned symbols while they try to change less valuable metal into gold. The process was called alchemy and the men who did this work were known as alchemists.

10. Which English scientist tried to name the various elements based on these pictorial symbols?

- a) Dalton
- b) Edison
- c) Einstein
- d) Darwin

Explanation

In 1808, **John Dalton**, English scientist tried to name the various elements based on these pictorial symbols. These symbols are difficult to draw and hence they are not used. It is only of historical importance.

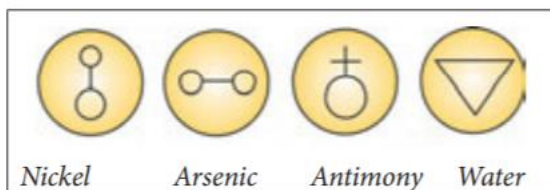
11. Match the following:

I.		1. Nickel
II.		2. Antimony
III.		3. Water
IV.		4. Arsenic

a) 2, 1, 3, 4
b) 1, 3, 2, 4
c) 1, 4, 2, 3
d) 1, 2, 3, 4

Explanation

Pictorial symbols



12. Match the following:

- | | | |
|------|---|-------------|
| I. | ● | 1. Carbon |
| II. | ⊙ | 2. Copper |
| III. | ⊖ | 3. Alumina |
| IV. | ⊕ | 4. Nitrogen |

a) 3, 1, 2, 4

b) 1, 2, 4, 3

c) 2, 1, 4, 3

d) 1, 3, 2, 4

Explanation

Dalton's 1808 AD (CE) symbols and formulae.

⊙ Hydrogen	⊖ Soda	⊙⊖ Ammonia
⊖ Nitrogen	⊖ Pot Ash	⊙● Olefiant
● Carbon	○ Oxygen	○● Carbonic Oxide
⊕ Sulphur	⊙ Copper	○●○ Carbonic Acid
⊕ Phosphorus	⊖ Lead	 Sulphuric Acid
— Alumina	⊙○ Water	

13. Who devised a system using letters of alphabet rather than signs?

- a) Dalton
- b) Einstein
- c) **Jon Jakob Mendeleev**
- d) Jacob

Explanation

In 1813, **Jon Jakob Berzelius** devised a system using letters of alphabet rather than signs. The modified version of Berzelius system follows under the heading 'System for Determining Symbols of the Elements'.

14. What does the symbol B represent?

- a) Beryllium
- b) **Boron**
- c) Bismuth
- d) Barium

Explanation

Element	Symbol	Element	Symbol
Boron	B	Oxygen	O
Carbon	C	Phosphorus	P
Fluorine	F	Sulphur	S
Hydrogen	H	Vanadium	V
Iodine	I	Uranium	U
Nitrogen	N	Yttrium	Y

15. What does the term Ba represent?

- a) Boron
- b) **Barium**
- c) Beryllium
- d) Bromine

Explanation

Element	Symbol	Element	Symbol
Aluminium	Al	Gallium	Ga
Barium	Ba	Helium	He
Beryllium	Be	Lithium	Li
Bismuth	Bi	Neon	Ne
Bromine	Br	Silicon	Si
Cobalt	Co	Argon	Ar

16. What does the symbol As represent?

- a) **Arsenic**
- b) Argon
- c) Amalgam
- d) Aluminium

Explanation

Element	Symbol	Element	Symbol
Argon	Ar	Calcium	Ca
Arsenic	As	Cadmium	Cd
Chlorine	Cl	Magnesium	Mg
Chromium	Cr	Manganese	Mn
Bromine	Br	Silicon	Si
Cobalt	Co		

17. Which of the following metal's symbol does not come from its Latin name?

- a) Silver
- b) Tin
- c) **Argon**
- d) Antimony

Explanation

Name of element	Latin Name	Symbol
Copper	Cuprum	Cu
Silver	Argentum	Ag
Gold	Aurum	Au
Mercury	Hydrargyrum	Hg
Lead	Plumbum	Pb
Tin	Stannum	Sn
Antimony	Stibium	Sb
Tungsten	Wolfram	W

18. Which of the following metal is named after Alfred Nobel?

- a) Americium
- b) **Nobelium**
- c) Neptunium
- d) Iodine

Explanation

Americium	Am	A merica (country)
Europium	Eu	E urope (country)
Nobelium	No	Alfred N obel (scientist)
Iodine	I	Violet (colour, Greek)

19. Which of the following planet name is not used to name an element?

- a) Pluto
- b) Neptune
- c) Uranium
- d) **Mars**

Explanation

Mercury	Hg	God Mercury (mythologic character)
Plutonium	Pu	Pluto (planet)
Neptunium	Np	Neptune (Planet)
Uranium	U	Uranus (planet)

20. What does the symbol O represent?

- a) Oxygen molecule
- b) One atom of Oxygen**
- c) Molecule of Carbon monoxide
- d) Atom of carbon

Explanation

Symbol of an element signifies:

- Name of the element
- One atom of the element
- For example, the **symbol O stands for the element of Oxygen**, One atom of oxygen

21. Which of the following statement is correct?

- 1) The progress of man towards civilization is linked with the discovery of several metals and non-metals
 - 2) Even today, the index of prosperity of a country depends upon the amount of metals and non-metals it produces and uses
- a) 1 alone
 - b) 2 alone
 - c) 1, 2**
 - d) None

Explanation

The progress of man towards civilization is linked with the discovery of several metals and non-metals. Even today, the index of prosperity of a country depends upon the amount of metal and non-metals it produces and uses.

22. The wealth of a country is measured by the amount of ____ in its reserve.

- a) Gold**
- b) Silver
- c) Iron
- d) Mercury

Explanation

The **wealth of a country** is measured by the **amount of gold in its reserve**. These days, metals and non-metals are used for making tools, machines, cars, utensils, etc. Some of the common metals used are iron, copper, silver, gold, lead, zinc, aluminium, magnesium, nickel, chromium and mercury etc. Similarly, the common non-metals used are nitrogen, oxygen, hydrogen, carbon, sulphur, phosphorus and chlorine etc.

23. Which of the following statement is incorrect?

- 1) An element can be identified as metal or non-metal by comparing its properties with the general properties of metals and non- metals.
- 2) In doing so, we find that some elements neither fit with the metals or with non-metals, they are called as metalloid
 - a) 1 alone
 - b) 2 alone
 - c) 1, 2
 - d) **None**

Explanation

An element can be identified as metal or non-metal by comparing its properties with the general properties of metals and non- metals. In doing so, we find that some elements neither fit with the metals or with non-metals. Such elements are called semi-metals or metalloids. Elements are classified into metals, non-metals, and metalloids based on their properties.

24. Which of the following metals become liquid at or just above room temperature?

- a) Francium
- b) Mercury
- c) Gallium
- d) **All the above**

Explanation

Metals are solid under normal conditions of temperature and pressure. **Mercury** is liquid at room temperature. Elements **Caesium (Cs)**, **rubidium (Rb)**, **Francium (Fr)** and **Gallium (Ga)** become liquid at or just above room temperature

25. _____is so hard that it can scratch glass

- a) Sodium
- b) Diamond
- c) **Osmium**
- d) Potassium

Explanation

Most metals are hard. The exception here is sodium and potassium, which is soft enough to be cut by a knife. **Osmium is so hard that it can scratch glass.**

26. Which of the following metal does not Lustre?

- a) Iron
- b) Gold
- c) **Calcium**
- d) Silver

Explanation

All metals are shiny. The typical shine of metals is called metallic lustre. All metals have a typical metallic lustre. **An exception is calcium.**

27. Which of the following metal have low density?

- 1) Sodium
- 2) Zinc
- 3) Potassium
 - a) 1, 2
 - b) **1, 3**
 - c) 2, 3
 - d) All the above

Explanation

Metals generally have high density. **Sodium and potassium have exceptionally low density.** All metals have a typical metallic lustre.

28. Which metal does not have high melting point and boiling point?

- 1) Sodium
- 2) Potassium
- 3) Mercury
- 4) Gallium
 - a) 1, 2, 3
 - b) 2, 3, 4
 - c) 1, 3, 4
 - d) **All the above**

Explanation

Melting point and boiling point: Metals in general have **high** melting point and boiling point. Sodium, potassium, mercury and gallium are exceptions.

29. Which of the following statement is correct?

- 1) Metals have the capacity to withstand strain without breaking
- 2) It is the property that owes the use of iron for the construction of railway tracks
- 3) Zinc, arsenic and antimony are exceptions.
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

Metals have the capacity to withstand strain without breaking. This property is called tensile strength. It is the property that owes the use of iron for the construction of railway tracks. **Zinc, arsenic and antimony are exceptions**

30. Which metal have the property to transform into silvery foils?

- a) Gold
- b) Silver
- c) **Aluminium**
- d) Zinc

Explanation

Metals can be hammered into very thin sheets. This tendency of metals is called malleability. **Aluminium makes use of this property to transform into silvery foils.**

31. Property of making metals into thin wire is called_____

- a) Conductivity
- b) **Ductility**
- c) Lustre
- d) Hardness

Explanation

Ductility: **Metals can be drawn into thin wires.** This property of metals is called **ductility**. Example: copper wires.

32. Which of the following metal is/are poor conductor of electricity?

- a) Bismuth
- b) Tungsten
- c) Silver
- d) **Both a and b**

Explanation

Metals are good conductors of heat and electricity. Silver and copper are very good conductors of electricity. However, **bismuth and tungsten are poor conductors**.

33. _____ property is being made used in making temple bells

- a) Malleability
- b) **Sonorous**
- c) Ductility
- d) Tensile strength

Explanation

On being hit, metals produce a typical sound. Hence, they are said to be **sonorous**. This property is being made used in **making temple bells**.

34. Which of the following are non-metals?

- 1) Sulphur
 - 2) Carbon
 - 3) Oxygen
- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) **All the above**

Explanation

Elements that generally do not shine, neither too hard nor too soft, are non-metals. All gases are non-metals. **Some non-metals are Sulphur, Carbon, Oxygen etc.**

35. Which of the following non-metal occurs in solid state?

- a) Sulphur
- b) Phosphorus
- c) Oxygen
- d) **Both a and b**

Explanation

Non-metals occur as solids, liquids or gases at normal temperature, for example **sulphur, phosphorus occurs in solid state** while bromine occurs in liquid state. Gases like oxygen, nitrogen, etc., occur in the gaseous state.

36. Which of the following statement is correct?

- 1) Non-metals are generally not hard except diamond
- 2) Non-metals have a dull appearance; Graphite and iodine are exceptions as they are shiny and lustrous
 - a) 1 alone
 - b) 2 alone
 - c) 1, 2
 - d) None

Explanation

Non-metals are generally not hard except **diamond (a form of carbon)**. Non-metals have a dull-appearance; **Graphite and iodine are exceptions as they are shiny.**

37. Which of the following non-metals have high melting and boiling point?

- 1) Carbon
- 2) Silicon
- 3) Boron
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

Nonmetals have low melting point and boiling point. However, carbon, silicon and boron are exceptions. Non-metals do not have tensile strength. However, carbon fibre (a form of carbon) is as tensile as steel.

38. Which of the following metal properties are usually high?

- 1) Melting point
- 2) Boiling point
- 3) Density
 - a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) All the above

Explanation

Property	Metal	Non Metal
Physical state at room Temperature	Usually Solid (Occasionally liquid)	Solid, liquid or gas
Malleability	Good	Poor-usually soft or brittle
Ductility	Good	Poor-usually soft or brittle
Melting point	Usually high	Usually low
Boiling point	Usually high	Usually low
Density	Usually high	Usually low
Conductivity (Thermal and electrical)	Good	Very poor

39. _____ is used in electrical wires, cables and in aerospace industries

- a) Silver
- b) **Aluminium**
- c) Bronze
- d) Mercury

Explanation

Uses of Metals:

- Iron is used for making bridges, engine parts, iron-sheet and bars.
- Copper is used for making electrical wires, coins and statue.
- Silver and gold are used for making jewels, in decorative purposes and photography
- Mercury is used in thermometers and barometers because of its high density and uniform expansion at different temperature.
- **Aluminium is used in electrical wires, cables and in aerospace industries.**

40. _____ is used in making pencil lead.

- a) **Diamond**
- b) Graphite
- c) Fullerance
- d) None

Explanation

Diamond (a form of carbon) is used for making jewels, cutting and grinding equipment. Graphite is used in making pencil lead.

41. _____ is used in the manufacturing of gun powder

- a) Zinc
- b) **Sulphur**
- c) Lead
- d) Phosphorous

Explanation

Sulphur is used in the **manufacturing of gun powder and vulcanization of rubber**. Phosphorus is used in matches, rat poison etc.

42. _____ is used as a bleaching agent and in sterilizing water.

- a) Sulphur
- b) **Chlorine**
- c) Hydrogen
- d) Nitrogen

Explanation

Nitrogen is used for manufacturing ammonia. **Chlorine is used as a bleaching agent and in sterilizing water**. Hydrogen is used as a rocket fuel and hydrogen flame is used for cutting and welding purposes, as well as a reducing agent.

43. Which of the following is/are Metalloids?

- a) Silicon
- b) Arsenic
- c) Antimony
- d) **All the above**

Explanation

The elements which exhibit the properties of metals as well as non-metals are called metalloids. Examples: **boron, silicon, arsenic, germanium, antimony, tellurium and polonium**.

44. Which of the following are the Physical properties of metalloids?

- 1) They can form alloys with other metals
 - 2) The physical properties of metalloids tend to be metallic, but their chemical properties tend to be non-metallic.
 - 3) Silicon for example appears lustrous, but is not malleable nor ductile (it is brittle - a characteristic of some non-metals)
- a) 1, 2
 - b) 1, 3

- c) 2, 3
- d) All the above

Explanation

Physical properties of metalloids:

Metalloids are all solid at room temperature

- They can form alloys with other metals
- Some metalloids, such as silicon and germanium, can act as electrical conductors under the specific conditions, thus they are called semiconductors.
- Silicon for example appears lustrous, but is not malleable nor ductile (it is brittle - a characteristic of some non-metals). It is a much poorer conductor of heat and electricity than the metals
- The **physical properties of metalloids tend to be metallic, but their chemical properties tend to be non-metallic**

45. What is the ratio of mass of water oxygen and hydrogen atoms?

- a) 8:1
- b) 1:8
- c) 1:2
- d) 2:1

Explanation

Water, carbon di oxide, sodium chloride etc. are few examples of compounds. A **molecule of water is composed of an oxygen atom and two hydrogen atoms** in the ratio 1:2 by volume or 8:1 by mass.

46. Which of the are the Constituent Elements of Zinc carbonate?

- 1) Zinc
 - 2) Carbon
 - 3) Sulphur
 - 4) Oxygen
- a) 1, 2, 4
 - b) 2, 3, 4
 - c) 1, 2, 3
 - d) All the above

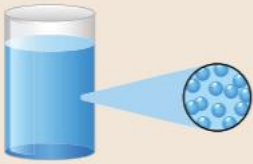
Explanation

Compound	Constituent Elements
Silica (sand)	Silicon, Oxygen
Potassium hydroxide (caustic potash)	Potassium, Hydrogen, Oxygen
Sodium hydroxide (Caustic soda)	Sodium, Oxygen, Hydrogen
Copper sulphate	Copper, Sulphur, Oxygen
Zinc carbonate (calamine)	Zinc, carbon, oxygen

47. What are the Constituent Elements of Vinegar?

- 1) Hydrogen
 - 2) Carbon
 - 3) Oxygen
 - 4) Sulphur
- a) 1, 2, 3
 - b) 1, 2, 4
 - c) 2, 3, 4
 - d) All the above

Explanation

Compound	Constituent Elements
Water	Hydrogen, Oxygen
Hydrochloric Acid	Hydrogen, Chlorine
Nitric Acid	Hydrogen, Nitrogen, Oxygen
Sulphuric Acid	Hydrogen, Sulphur, Oxygen
Acetic acid (Vinegar)	Carbon, Hydrogen, Oxygen
Liquid 	

48. Match the following:

I. Baking soda

1. Calcium hydroxide

- II. Quick lime
 III. Slaked lime
 IV. Bleaching powder
2. Sodium bicarbonate
 3. Calcium oxide
 4. Calcium hydroxide
- a) 2, 1, 3, 4
 b) 2, 3, 4, 1
 c) 3, 1, 2, 4
 d) 1, 2, 3, 4

Explanation

Common Name	Chemical Name	Constituents	Uses
Water	Hydrogen Oxide	Hydrogen and oxygen	For drinking and as solvent
Table salt	Sodium chloride	Sodium and chlorine	Essential component of our daily diet, preservative for meat and fish.
Sugar	Sucrose	Carbon, hydrogen and oxygen	Preparation of sweets, toffees and fruit juices.
Baking soda	Sodium bicarbonate	Sodium, hydrogen, carbon and oxygen	Fire extinguisher, preparation of baking powder and preparation of cakes and bread.
Washing soda	Sodium carbonate	Sodium, carbon and oxygen	As cleaning agent in soap and softening of hardwater.
Bleaching powder	Calcium oxy chloride	Calcium, oxygen and chlorine	As bleaching agent, disinfectant and sterilisation of drinking water.
Quick lime	Calcium oxide	Calcium and oxygen	Manufacture of cement and glass.
Slaked lime	Calcium hydroxide	Calcium, oxygen and hydrogen	White washing of walls.
Lime stone	Calcium carbonate	Calcium, carbon and oxygen	Preparation of chalk pieces.

49. Match the following:

- I. Copper sulphate
 II. Calcium sulphate
 III. Potassium chloride
 IV. Sulphuric acid
1. Blue Vitriol
 2. Gypsum
 3. Muriate of potash
 4. Oil of Vitriol
- a) 1, 3, 2, 4
 b) 1, 2, 3, 4
 c) 1, 3, 4, 2
 d) 2, 1, 4, 3

Explanation

More to Know

Compound	Constituent Elements
Copper sulphate	Blue Vitriol
Ferrous sulphate	Green Vitriol
Potassium nitrate	Saltpetre
Sulphuric acid	Oil of Vitriol
Calcium sulphate	Gypsum
Calcium sulphate hemi hydrate	Plaster of paris
Potassium chloride	Muriate of potash