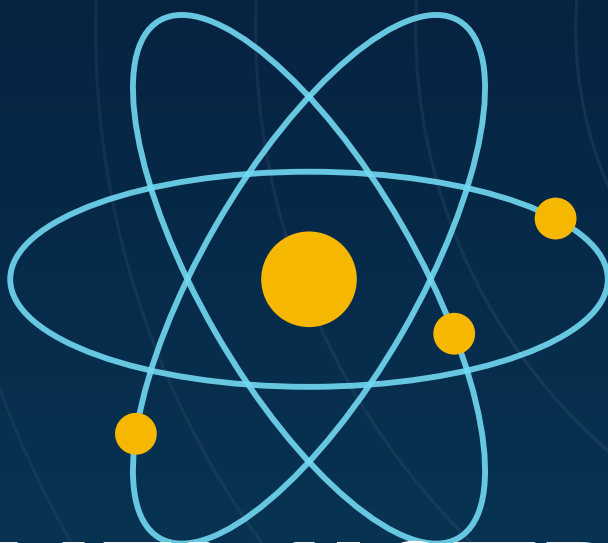


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CHEMISTRY

9th CLASS • CHAPTER 09

GROUP PROPERTIES AND ELEMENTS

72 High-Importance MCQs

Highlighted Correct Answers • Detailed Explanations
Made for Annual Exam Preparation

11

Na

Group 1
Alkali Metals

17

Cl

Group 17
Halogens

26

Fe

Groups 3-12
Transition

2

He

Group 18
Noble Gases

9.1 Properties of Group 1 Elements (Alkali Metals)

1

Which of the following is the correct electronic configuration for the outermost shell of Group 1 elements?

A ns^2

B ns^1



C np^6

D np^5

✓ **Correct Answer: B) ns^1**

Explanation: Group 1 elements have only one electron in their outermost shell. This single electron is easily lost to achieve a stable noble gas configuration, which is why they are highly reactive.

2 Why are Group 1 elements called “alkali metals”?

- A They are found in alkaline earth
- B They react with water to form alkaline solutions (hydroxides)**
- C They are highly acidic in nature
- D They are found in alkaline batteries



✓ **Correct Answer: B) They react with water to form alkaline solutions (hydroxides)**

Explanation: When Group 1 metals react with water, they produce metal hydroxides (like NaOH, KOH), which are strong bases or alkalis. Hence, the name “alkali metals” was given.

3

What is the trend of reactivity in Group 1 elements as we move from top to bottom?

- A Reactivity decreases
- B Reactivity remains constant
- C Reactivity increases** ✓
- D Reactivity first increases then decreases

✓ **Correct Answer: C) Reactivity increases**

Explanation: As we move down the group, the atomic size increases. The outermost electron is farther from the nucleus and experiences less nuclear pull (shielding effect), making it easier to lose. Therefore, reactivity increases.

4

Which of the following alkali metals reacts most violently with water?

- A Lithium
- B Sodium
- C Potassium** ✓
- D Hydrogen

✓ **Correct Answer: C) Potassium**

Explanation: Reactivity increases down the group. Lithium reacts steadily, sodium reacts vigorously, and potassium reacts violently with water, producing hydrogen gas that can ignite instantly.

5

The reaction of sodium with water produces sodium hydroxide and which gas?

A Oxygen

B Chlorine

C Hydrogen



D Carbon dioxide

✓ **Correct Answer: C) Hydrogen**

Explanation: The general reaction for alkali metals with water is:
$$2M(s) + 2H_2O(l) \rightarrow 2MOH(aq) + H_2(g)$$
The metal displaces hydrogen from water, releasing hydrogen gas.

6

What is the trend of melting points of Group 1 elements down the group?

- A Increases
- B Decreases** ✓
- C Remains the same
- D First increases then decreases

✓ **Correct Answer: B) Decreases**

Explanation: As atomic size increases down the group, the interatomic attraction (metallic bonding) becomes weaker because the valence electron is further from the nucleus. This weaker bond requires less energy to break, lowering the melting point.

7

Why does the density of alkali metals increase down the group?

A Mass increases faster than volume



B Volume increases faster than mass

C Mass decreases down the group

D Atomic size decreases

✓ **Correct Answer: A) Mass increases faster than volume**

Explanation: Down the group, both mass and volume increase. However, the increase in atomic mass is greater than the increase in atomic volume, causing the overall density (mass/volume) to increase.

8

Which of the following statements is TRUE about the reaction of alkali metals with chlorine?

- A It becomes less vigorous down the group
- B It forms metal chlorides**
- C It requires no heat
- D It produces hydrogen gas

✓ **Correct Answer: B) It forms metal chlorides**

Explanation: Alkali metals react with chlorine to form ionic chlorides (e.g., $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$). The reaction becomes more vigorous as we go down the group because the metals become more reactive.

9

Which alkali metal is lighter than water?

- A Sodium
- B Potassium
- C Lithium**
- D Rubidium

✓ **Correct Answer: C) Lithium**

Explanation: Lithium, Sodium, and Potassium are all lighter than water. However, Lithium is the lightest of all metals and floats on water. (Note: Potassium is also less dense than water, but Lithium is famously known for this).

10

Which of the following is an exception to the general physical properties of metals in Group 1?

- A They are good conductors of electricity
- B They are soft metals**
- C They have high melting points
- D They are lustrous



✓ **Correct Answer: B) They are soft metals**

Explanation: Unlike most transition metals which are hard and tough, alkali metals are relatively soft and can be easily cut with a knife due to weak metallic bonding.

11

When Lithium reacts with water, the reaction is:

- A Violent
- B Vigorous
- C Steady**
- D Explosive



✓ **Correct Answer: C) Steady**

Explanation: Lithium has the highest ionization energy in Group 1, making it the least reactive. It reacts steadily with water, fizzing gently, whereas Sodium is vigorous and Potassium is violent.

12 If 'X' is a Group 1 element, what will be the formula of its oxide?

A XO

B X_2O ✓

C XO_2

D X_2O_3

✓ **Correct Answer: B) X_2O**

Explanation: Group 1 elements have a valency of +1. Oxygen has a valency of -2. By criss-crossing valencies, the formula becomes X_2O (e.g., Na_2O).

13 The increase in atomic size down Group 1 is due to:

A Increase in nuclear charge only

B Addition of new shells ✓

C Decrease in number of electrons

D Increase in ionization energy

✓ **Correct Answer: B) Addition of new shells**

Explanation: As we move down the group, new electron shells are added. This increases the distance between the nucleus and the outermost electron, overcoming the increased nuclear charge and resulting in a larger atomic radius.

14 Cesium (Cs) reacts with water in which manner?

- A Steady
- B Vigorous
- C Violent

D Explosive (shattering the container)



✓ **Correct Answer: D) Explosive (shattering the container)**

Explanation: Cesium is at the bottom of Group 1. Its reactivity is extreme. The textbook specifically mentions that Cesium explodes on contact with water, potentially shattering the container.

15 Which of the following is NOT a physical property of alkali metals?

- A Malleable
- B Ductile
- C Brittle**
- D Lustrous



✓ **Correct Answer: C) Brittle**

Explanation: Metals are generally malleable (can be hammered into sheets) and ductile (can be drawn into wires). Brittleness is a property of non-metals, not alkali metals.

9.2 Properties of Group 17 Elements (Halogens)

16

What is the general electronic configuration of Group 17 elements?

A $ns^2 np^5$



B $ns^2 np^6$

C ns^1

D $ns^2 np^4$

✓ **Correct Answer: A) $ns^2 np^5$**

Explanation: Halogens have 7 electrons in their outermost shell (2 in s-orbital, 5 in p-orbital). They need just one more electron to complete their octet.

17 Why are halogens called “salt-forming” elements?

A They react with water to form salts

B They react with metals to form salts ✓

C They are found in seawater

D They have a salty taste

✓ **Correct Answer: B) They react with metals to form salts**

Explanation: The term “Halogen” literally means “salt-former.” Halogens react vigorously with alkali and alkaline earth metals to form ionic halides (salts).

18 Which halogen exists as a pale yellow gas at room temperature?

A Chlorine

B Bromine

C Fluorine ✓

D Iodine

✓ **Correct Answer: C) Fluorine**

Explanation: At room temperature (rtp): Fluorine is a pale yellow gas, Chlorine is a yellowish-green gas, Bromine is a red-brown liquid, and Iodine is a grey-black solid.

19

What is the physical state of Bromine at room temperature?

- A Gas
- B Liquid** ✓
- C Solid
- D Plasma

✓ **Correct Answer: B) Liquid**

Explanation: Bromine is the only non-metal that exists as a liquid at room temperature. It is a fuming red-brown liquid.

20

Which halogen forms dark purple vapours when warmed?

- A Fluorine
- B Chlorine
- C Bromine
- D Iodine** ✓

✓ **Correct Answer: D) Iodine**

Explanation: Iodine exists as a grey-black solid. When heated, it sublimes directly into a beautiful dark purple vapour.

21 What is the trend of melting and boiling points of halogens down the group?

A Decreases

B Increases ✓

C Remains constant

D Irregular

✓ **Correct Answer: B) Increases**

Explanation: As the size of the halogen atoms increases down the group, the strength of van der Waals forces between the diatomic molecules increases. Therefore, more energy is required to break these forces, increasing melting and boiling points.

22 What is the trend of reactivity in Group 17 elements down the group?

A Increases

B Decreases ✓

C Remains the same

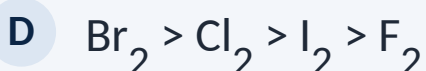
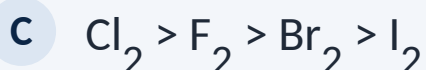
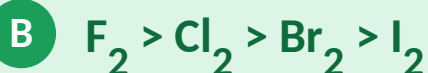
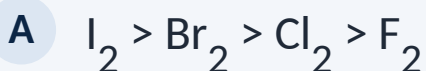
D First increases then decreases

✓ **Correct Answer: B) Decreases**

Explanation: Down the group, atomic size increases. The nucleus has less pull on an incoming electron. Therefore, the tendency to gain an electron (electronegativity) decreases, making them less reactive.

23

Which of the following is the correct order of oxidizing power of halogens?



✓ **Correct Answer: B)** $F_2 > Cl_2 > Br_2 > I_2$

Explanation: Oxidizing power decreases down the group because the ability to gain electrons decreases. Fluorine is the strongest oxidizing agent, while Iodine is the weakest.

24

In a displacement reaction, which halogen can displace Bromine from Sodium Bromide?

A Iodine

B Chlorine ✓

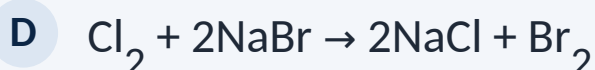
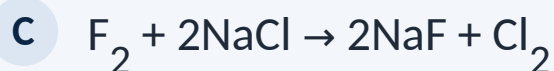
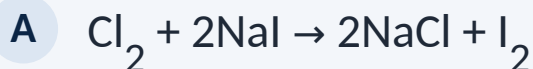
C Fluorine

D Both A and B

✓ **Correct Answer: B) Chlorine**

Explanation: A more reactive halogen can displace a less reactive halogen from its salt solution. Chlorine is above Bromine in reactivity, so it displaces it: $Cl_2 + 2NaBr \rightarrow 2NaCl + Br_2$.

25 Which reaction will NOT occur?



✓ **Correct Answer: B) $\text{Br}_2 + 2\text{NaCl} \rightarrow 2\text{NaBr} + \text{Cl}_2$**

Explanation: Bromine is less reactive than Chlorine. Therefore, Bromine cannot displace Chlorine from Sodium Chloride. This reaction is not feasible.

26 Halogens react with hydrogen to form:

A Hydrogen halides ✓

B Metal halides

C Acids only

D Bases

✓ **Correct Answer: A) Hydrogen halides**

Explanation: The general reaction is $\text{H}_2 + \text{X}_2 \rightarrow 2\text{HX}$. These compounds are called hydrogen halides (e.g., HCl, HBr).

27 Which hydrogen halide is a liquid at ordinary temperature?

A HCl

B HBr

C HI

D HF



✓ **Correct Answer: D) HF**

Explanation: Due to strong hydrogen bonding, Hydrogen Fluoride (HF) is a liquid at room temperature, whereas HCl, HBr, and HI are gases.

28 What is the trend of thermal stability of hydrogen halides down the group?

A Increases

B Decreases



C Remains constant

D No trend

✓ **Correct Answer: B) Decreases**

Explanation: The bond length between Hydrogen and Halogen increases down the group ($\text{H-F} < \text{H-Cl} < \text{H-Br} < \text{H-I}$). As bond length increases, bond energy decreases, making it easier to break. Therefore, thermal stability decreases ($\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$).

29 Which hydrogen halide has the highest thermal stability?

A HCl

B HBr

C HI

D HF



✓ **Correct Answer: D) HF**

Explanation: HF has the shortest bond length and strongest bond energy among hydrogen halides, making it the most thermally stable.

30 Which of the following is a strong acid in water?

A HF

B HCl

C HBr

D All of the above



✓ **Correct Answer: D) All of the above**

Explanation: All hydrogen halides behave as strong acids in water, completely dissociating to release H^+ ions (though HF is technically a weak acid in dilute solutions, the textbook categorizes hydrogen halides as strong acids in water).

31 Which halogen is used to sterilize water in swimming pools?

A Fluorine

B Chlorine ✓

C Bromine

D Iodine

✓ **Correct Answer: B) Chlorine**

Explanation: Chlorine is a powerful oxidizing agent that kills bacteria and germs. It is widely used in swimming pools for water sterilization.

32 The weakest oxidizing agent among halogens is:

A F_2

B Cl_2

C Br_2

D I_2 ✓

✓ **Correct Answer: D) I_2**

Explanation: Oxidizing power decreases down the group. Iodine is at the bottom of the halogens, making it the weakest oxidizing agent and the least reactive.

33

What is the correct order of bond length in hydrogen halides?

A HF > HCl > HBr > HI

B HI > HBr > HCl > HF



C HCl > HF > HBr > HI

D HBr > HI > HF > HCl

✓ **Correct Answer: B) HI > HBr > HCl > HF**

Explanation: Atomic size increases down the group. The larger the halogen atom, the longer the bond it forms with hydrogen. Therefore, HI has the longest bond, and HF has the shortest.

34

Halogens exist as diatomic molecules. This means they exist as:

A Single atoms

B Two atoms chemically bonded



C Three atoms chemically bonded

D Ionic crystals

✓ **Correct Answer: B) Two atoms chemically bonded**

Explanation: Halogens have 7 valence electrons. To complete their octet, they share one electron with another halogen atom, forming a covalent bond and existing as X_2 molecules (e.g., Cl_2 , Br_2).

35 Which of the following is NOT a characteristic of halogens?

A They are highly electronegative

B They are non-metals

C They are good conductors of electricity



D They exist as diatomic molecules

✓ **Correct Answer: C) They are good conductors of electricity**

Explanation: Halogens are non-metals. Non-metals generally do not conduct electricity because they do not have free electrons or mobile ions in their solid state.

9.3 Group Properties of Transition Elements

36 Transition elements belong to which block of the periodic table?

A s-block

B p-block

C d-block



D f-block

✓ **Correct Answer: C) d-block**

Explanation: Transition elements are located in the center of the periodic table and are characterized by the filling of d-orbitals. Hence, they are called d-block elements.

37 Which groups of the modern periodic table contain transition elements?

A Group 1 and 2

B Group 13 to 18

C Group 3 to 12



D Group 1 to 8

✓ **Correct Answer: C) Group 3 to 12**

Explanation: The transition metals are defined as the elements in Groups 3 through 12 of the periodic table.

38

Which of the following is a typical property of transition metals?

- A They have low melting points
- B They have variable oxidation states**
- C They are brittle
- D They are poor conductors of heat



✓ **Correct Answer: B) They have variable oxidation states**

Explanation: Transition metals can lose different numbers of electrons from their s and d orbitals, giving them multiple oxidation states (e.g., Iron can be Fe^{2+} or Fe^{3+}).

39

Transition metals often form:

- A Colorless compounds
- B Coloured compounds**
- C Ionic compounds only
- D Gaseous compounds



✓ **Correct Answer: B) Coloured compounds**

Explanation: Due to the presence of partially filled d-orbitals, transition metal ions absorb certain wavelengths of light and reflect others, resulting in beautifully colored compounds (e.g., Copper sulfate is blue).

40

Which transition metal is used as a catalyst in the Haber process for the manufacture of ammonia?

A Vanadium

B Platinum

C Iron



D Nickel

✓ **Correct Answer: C) Iron**

Explanation: The Haber process synthesizes ammonia from nitrogen and hydrogen gas. Iron (Fe) is the catalyst used to speed up this reaction.

41

Which catalyst is used in the Contact process for the manufacture of sulfuric acid?

A Iron

B Vanadium pentoxide (V_2O_5)



C Nickel

D Platinum

✓ **Correct Answer: B) Vanadium pentoxide (V_2O_5)**

Explanation: The Contact process oxidizes sulfur dioxide to sulfur trioxide. Vanadium pentoxide is the preferred catalyst because it is cheaper and less susceptible to poisoning than platinum.

42

Catalytic converters in automobiles use which metals as catalysts?

- A Iron, Cobalt, Nickel
- B Platinum, Palladium, Rhodium**
- C Copper, Silver, Gold
- D Zinc, Cadmium, Mercury

✓ **Correct Answer: B) Platinum, Palladium, Rhodium**

Explanation: These precious metals are coated on the honeycomb structure of catalytic converters to convert harmful exhaust gases (like CO and NO_x) into less harmful gases.

43

Nickel is used as a catalyst in the hydrogenation of oils to form:

- A Butter
- B Solid margarine**
- C Liquid oil
- D Glycerol

✓ **Correct Answer: B) Solid margarine**

Explanation: Nickel catalyzes the addition of hydrogen to unsaturated vegetable oils, turning them into saturated fats, which are solid at room temperature (margarine).

44

What does the “high tensile strength” of transition metals mean?

A They can be easily broken

B They can hold heavy weights without breaking



C They are highly reactive

D They have low density

✓ **Correct Answer: B) They can hold heavy weights without breaking**

Explanation: Tensile strength refers to the resistance of a material to breaking under tension. High tensile strength means transition metals are very strong and can withstand heavy loads.

45 Which of the following is NOT a transition metal?

- A Iron
- B Copper
- C Zinc

D Calcium



✓ **Correct Answer: D) Calcium**

Explanation: Calcium is an alkaline earth metal (Group 2, s-block). Although Zinc is technically a d-block element, it is often excluded from typical transition metal behavior because it has a full d-orbital ($3d^{10}$). However, Calcium is definitively not a transition metal.

46 Transition metals are often hard and have high densities because of:

- A Weak metallic bonding
- B Strong metallic bonding**
- C Ionic bonding
- D Covalent bonding



✓ **Correct Answer: B) Strong metallic bonding**

Explanation: Transition metals have strong metallic bonds due to the involvement of both s and d electrons in bonding. This strong bonding leads to high density, high melting points, and hardness.

9.4 Properties of Noble Gases

47

Noble gases are present in which group of the modern periodic table?

A Group 1

B Group 17

C Group 18



D Group 2

✓ **Correct Answer: C) Group 18**

Explanation: Group 18 of the periodic table contains the noble gases (Helium, Neon, Argon, Krypton, Xenon, Radon).

48 Why are noble gases highly unreactive?

- A They have incomplete outer shells
- B They have complete outer shells** ✓
- C They are highly electronegative
- D They have low ionization energies

✓ **Correct Answer: B) They have complete outer shells**

Explanation: Noble gases have a stable electronic configuration ($ns^2 np^6$), meaning their outermost shells are completely filled. They have no tendency to gain or lose electrons, making them chemically inert.

49 Which noble gas has an electronic configuration of $1s^2$ instead of the typical $ns^2 np^6$?

- A Neon
- B Argon
- C Helium** ✓
- D Krypton

✓ **Correct Answer: C) Helium**

Explanation: Helium is the first noble gas and has only two electrons, filling its $1s$ orbital. This is a duet rule exception to the octet rule, but it is still a stable configuration.

50 Noble gases exist as:

- A Diatomic molecules
- B Monatomic gases** ✓
- C Polyatomic molecules
- D Solid crystals

✓ **Correct Answer: B) Monatomic gases**

Explanation: Noble gases do not need to bond with other atoms to achieve stability because they already have complete outer shells. Therefore, they exist as single, isolated atoms (monatomic).

51 What is the trend of boiling points of noble gases?

- A Very high
- B Very low** ✓
- C Moderate
- D Zero

✓ **Correct Answer: B) Very low**

Explanation: Noble gases have very weak interatomic forces (van der Waals forces) because they are monatomic and have full shells. Thus, they have extremely low boiling points and are gases at room temperature.

52 Which of the following is NOT a noble gas?

- A Argon
- B Krypton
- C Xenon

D Nitrogen



✓ **Correct Answer: D) Nitrogen**

Explanation: Nitrogen is a diatomic non-metal in Group 15. Argon, Krypton, and Xenon are all noble gases in Group 18.

53 The electronic configuration of noble gases (except Helium) is:

A $ns^2 np^5$

B $ns^2 np^6$



C ns^1

D $ns^2 np^4$

✓ **Correct Answer: B) $ns^2 np^6$**

Explanation: Noble gases have 8 electrons in their outermost shell (2 in s, 6 in p), giving them a stable octet configuration.

54

Because noble gases have very little chemical reactivity, they are often used in:

A Fertilizers

B Lighting and welding



C Cooking oil

D Pesticides

✓ **Correct Answer: B) Lighting and welding**

Explanation: Their inertness makes them perfect for environments where reactions must be prevented. For example, Argon is used in welding to shield the hot metal from oxygen, and Neon is used in lighting.

9.5 Physical Properties of Metals and Non-metals

55

The property of metals by which they can be hammered into thin sheets is called:

A Ductility

B Malleability



C Sonorous

D Brittleness

✓ **Correct Answer: B) Malleability**

Explanation: Malleability allows metals to be deformed under compressive stress (hammering) without breaking, allowing them to form thin sheets (e.g., aluminum foil).

56

The property of metals by which they can be drawn into wires is called:

A Malleability

B Ductility



C Conductivity

D Lustrous

✓ **Correct Answer: B) Ductility**

Explanation: Ductility is the ability of a material to be stretched into a wire without breaking. Copper is highly ductile and is used for electrical wiring.

57

Why do metals conduct electricity?

A They have free/mobile electrons



B They have ionic bonds

C They are hard

D They have low melting points

✓ **Correct Answer: A) They have free/mobile electrons**

Explanation: In metallic bonding, valence electrons are delocalized and free to move throughout the structure. When a voltage is applied, these free electrons flow, conducting electricity.

58 Which non-metal is an exception and conducts electricity?

- A Sulfur
- B Phosphorus
- C Graphite** ✓
- D Bromine

✓ **Correct Answer: C) Graphite**

Explanation: Graphite is a non-metal, but its structure consists of layers of carbon atoms with free/mobile electrons between the layers. These delocalized electrons allow graphite to conduct electricity.

59 Which of the following is a characteristic property of non-metals?

- A They are malleable
- B They are ductile
- C They are brittle** ✓
- D They are lustrous

✓ **Correct Answer: C) They are brittle**

Explanation: Non-metals are generally brittle. When hammered, they break into pieces rather than flattening into sheets (e.g., sulfur or phosphorus).

60 Which metal is liquid at room temperature?

A Bromine

B Mercury ✓

C Sodium

D Gallium

✓ **Correct Answer: B) Mercury**

Explanation: Mercury (Hg) is the only metal that exists as a liquid at room temperature. It is used in thermometers.

61 Which non-metal is liquid at room temperature?

A Chlorine

B Bromine ✓

C Iodine

D Fluorine

✓ **Correct Answer: B) Bromine**

Explanation: Bromine is the only non-metal that exists as a liquid at room temperature. It is a volatile, red-brown liquid.

62 Metals are generally sonorous. This means they:

- A Conduct heat
- B Make a ringing sound when hit** ✓
- C Are shiny
- D Can be drawn into wires

✓ **Correct Answer: B) Make a ringing sound when hit**

Explanation: Sonorous is the property of metals to produce a deep, ringing sound when struck. This is why bells are made of metal.

63 Non-metals are generally poor conductors of heat and electricity because:

- A They have free electrons
- B They do not have free electrons** ✓
- C They are hard
- D They are lustrous

✓ **Correct Answer: B) They do not have free electrons**

Explanation: Non-metals form covalent bonds where electrons are shared and localized between atoms. Without free-moving electrons, they cannot conduct heat or electricity (with the exception of graphite).

64

Which of the following non-metals has a very high melting point?

- A Sulfur
- B Phosphorus
- C Diamond** ✓
- D Bromine

✓ **Correct Answer: C) Diamond**

Explanation: Diamond is an allotrope of carbon. It has a giant covalent structure where each carbon atom is bonded to four others, requiring a massive amount of energy to break, giving it a very high melting point.

65

Metals have high densities because:

- A Their atoms are loosely packed
- B Their atoms are closely packed** ✓
- C They have low atomic masses
- D They are brittle

✓ **Correct Answer: B) Their atoms are closely packed**

Explanation: The strong metallic bonding in metals pulls the atoms close together, resulting in a high mass per unit volume, which translates to high density.

66

Which of the following is an exception to the property of metals being lustrous?

A Gold

B Silver

C Mercury



D Copper

✓ **Correct Answer: C) Mercury**

Explanation: Most metals are lustrous (shiny), but Mercury is a liquid and has a dull appearance compared to solid metals like gold or silver.

67

Non-metals cannot be polished because:

A They are too hard

B They are dull and brittle



C They are good conductors

D They have high density

✓ **Correct Answer: B) They are dull and brittle**

Explanation: Non-metals generally have a dull texture and break upon applying pressure. They cannot be given a shiny surface like metals because of their weak intermolecular forces.

68 Which of the following statements about metals is FALSE?

- A Metals are good conductors of heat
- B Metals are malleable and ductile
- C Metals have low melting and boiling points** ✓
- D Metals are generally sonorous

✓ **Correct Answer: C) Metals have low melting and boiling points**

Explanation: Most metals have high melting and boiling points due to strong metallic bonding. Alkali metals are exceptions, but the general property of metals is high melting/boiling points.

69 The high tensile strength of metals allows them to:

- A Break easily
- B Hold heavy weights** ✓
- C Conduct electricity
- D Be drawn into wires

✓ **Correct Answer: B) Hold heavy weights**

Explanation: Tensile strength is the resistance to breaking under tension. High tensile strength means the metal can withstand heavy loads without snapping.

70

Which of the following pairs consists of non-metals that exist in powdered form?

- A Iron and Copper
- B Sulfur and Phosphorus**
- C Gold and Silver
- D Sodium and Potassium



✓ **Correct Answer: B) Sulfur and Phosphorus**

Explanation: The text specifically mentions that sulfur and phosphorus exist in powdered form, making them non-malleable and non-ductile.

71

Graphite conducts electricity due to:

- A Its ionic bonds
- B The mobility of electrons between its layers**
- C Its high density
- D Its brittleness



✓ **Correct Answer: B) The mobility of electrons between its layers**

Explanation: In the graphite crystal structure, carbon atoms form hexagonal layers. The electrons between these layers are loosely held and can move freely, conducting electricity.

72

Which of the following is NOT a physical property of non-metals?

A Poor conductors of heat

B High density

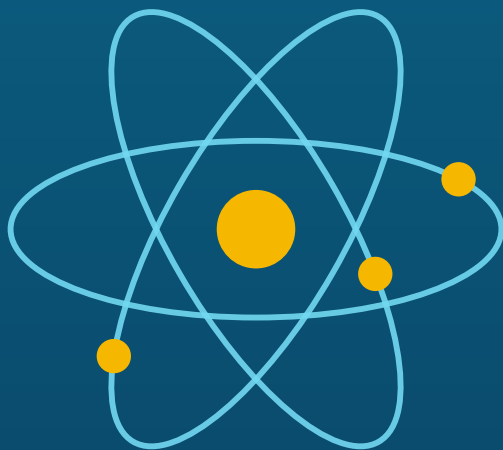


C Brittle

D Dull appearance

✓ **Correct Answer: B) High density**

Explanation: Non-metals generally have low densities because their atoms are not tightly packed together. Metals have high densities.



Thank You!

Best of Luck for Your Annual Exams

Revise every explanation, not just the answers.
Understanding the “why” is the real secret to top marks.

What You Practised

9.1	Alkali Metals (Group 1)	15 MCQs
9.2	Halogens (Group 17)	20 MCQs
9.3	Transition Elements	11 MCQs
9.4	Noble Gases (Group 18)	8 MCQs
9.5	Metals and Non-metals	18 MCQs

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