Multiple-Choice Questions

(QUESTION BANK)

Chapter 1: CHEMICAL REACTIONS AND EQUATIONS

1. What are the substances that take part in a chemical reaction called?
   a. Reactants
   b. Products
   c. Catalysts
   d. Activators

2. What are the reactions which occur with the absorption of energy called?
   a. Exothermic reactions
   b. Endothermic reactions
   c. Redox reactions
   d. Oxidation reactions

3. Magnesium ribbon burns in air to form
   a. magnesium hydroxide.
   b. magnesium oxide.
   c. magnesium carbonate.
   d. magnesium sulphate.

4. In which type of chemical reactions two or more reactants combine to form a single product?
   a. Combination reactions
   b. Decomposition reactions
   c. Displacement reactions
   d. Double displacement reactions

5. The following chemical equation

   $N_2 + 3H_2 \longrightarrow 2NH_3$

   is an example of ..... reaction.
   a. combination
   b. decomposition
   c. displacement
   d. double displacement

6. Which of the following equations can be regarded as a general chemical equation for combination reactions?
   a. $A + B \longrightarrow AB$
   b. $AB \longrightarrow A + B$
   c. $AB + C \longrightarrow AC + B$
   d. $AB + CD \longrightarrow AC + BD$

7. What are the chemical reactions in which a single reactant breaks down to give two or more products called?
   a. Redox reactions
   b. Decomposition reactions
   c. Displacement reactions
   d. Double displacement reactions

8. Which of the following chemical equations is an example of decomposition reaction?
   a. $2Mg + O_2 \longrightarrow 2MgO$
   b. $2H_2 + O_2 \longrightarrow 2H_2O$
   c. $CaCO_3 \xrightarrow{heat} CaO + CO_2$
   d. $Fe + CuSO_4 \longrightarrow FeSO_4 + Cu$

9. The following equation can be regarded as the general chemical equation for ..... reactions.

   $AB \longrightarrow A + B$

   a. combination
   b. decomposition
   c. displacement
   d. double displacement

10. ..... reactions are the opposite of combination reactions.
    a. Decomposition
    b. Displacement
    c. Double displacement
    d. Redox

11. In a thermal decomposition reaction, the decomposition is brought about by
    a. heat.
    b. sunlight.

c. UV light.
d. electricity.

12. Decomposition of a chemical compound by the action of light is known as
a. hydrolysis.
b. photolysis.
c. electrolysis.
d. cytolysis.

13. Which of the following chemical reactions is used in black and white photography?
a. $CaCO_3 \xrightarrow{heat} CaO + CO_2$
b. $2FeSO_4 \xrightarrow{heat} Fe_2O_3 + SO_2 + SO_3$
c. $2AgBr \xrightarrow{sunlight} 2Ag + Br_2$
d. $2H_2O \xrightarrow{electricity} 2H_2 + O_2$

14. When silver chloride is left open in sunlight, it turns grey after some time due to the
a. formation of silver oxide and chlorine.
b. reaction of silver chloride with oxygen present in the air.
c. reaction of silver chloride with moisture present in the air.
d. decomposition of silver chloride into silver and chlorine by light.

15. A chemical equation is balanced to satisfy the
a. law of conservation of mass.
b. law of constant proportions.
c. law of multiple proportions.
d. law of combining volumes.

16. When calcium carbonate is heated, the gas formed is allowed to pass through freshly-prepared lime water. What change will be observed in the lime water?
a. The lime water will turn milky.
b. The lime water will turn black.
c. A brown ring will be formed in the lime water.
d. No change will be observed.

17. Name the chemical reaction in which a more reactive element displaces a less reactive element from the latter's salt solution.
a. Combination reaction
b. Decomposition reaction
c. Displacement reaction
d. Double displacement reaction

18. Which of the following observations will be made when a copper coin is placed in a test tube containing ferrous sulphate solution?
a. The ferrous sulphate solution will turn blue and a grey substance will be deposited on the copper coin.
b. The ferrous sulphate solution will turn colourless and a grey substance will be deposited on the copper coin.
c. The ferrous sulphate solution will turn colourless and a reddish–brown substance will be deposited on the copper coin.
d. No change will occur.

19. Which of the following equations can be regarded as a general chemical equation for displacement reactions?
a. $A + B \longrightarrow AB$
b. $AB \longrightarrow A + B$
c. $AB + C \longrightarrow AC + B$
d. $AB + CD \longrightarrow AC + BD$

20. Identify displacement reaction from the following chemical equations.
a. $CaO + H_2O \longrightarrow Ca(OH)_2 + Heat$
b. $2Pb(NO_3)_2(s) \xrightarrow{heat} 2PbO(s) + 4NO_2(g) + O_2(g)$
c. $2H_2O \xrightarrow{electricity} 2H_2 + O_2$
d. $Zn(s) + CuSO_4(aq) \longrightarrow ZnSO_4(aq) + Cu(s)$

21. In which of the following options, the given reactants will not result in the formation of the products?
a. $Zn + CuSO_4$
b. $Zn + MgSO_4$
c. $Cu + AgNO_3$
d. $Fe + CuSO_4$

22. Name the type of chemical reactions in which two chemical compounds react to form two new compounds by the exchange of their ions.
a. Combination reactions
b. Decomposition reactions

c. Displacement reactions
d. Double displacement reactions

23. Which of the following equations can be regarded as a general chemical equation for double displacement reactions?
a. A + B + C + D $\longrightarrow$ ABCD
b. ABC $\longrightarrow$ A + B + C
c. AB + C $\longrightarrow$ AC + B
d. AB + CD $\longrightarrow$ AC + BD

24. How would you classify the following chemical reaction?
$BaCl_2(aq) + H_2SO_4(aq) \longrightarrow BaSO_4(s) + 2HCl(aq)$
a. Combination reaction
b. Decomposition reaction
c. Precipitation reaction
d. Neutralisation reaction

25. Neutralisation reactions are a type of ..... reactions.
a. combination
b. decomposition
c. displacement
d. double displacement

26. Which of the following is not a double displacement reaction?
a. $NaCl(aq) + AgNO_3(aq) \longrightarrow AgCl(s) + NaNO_3(aq)$
b. $Zn(s) + H_2SO_4(aq) \longrightarrow ZnSO_4(s) + H_2(g)$
c. $HgCl_2(aq) + 2KI(aq) \longrightarrow HgI_2(s) + 2KCl(aq)$
d. $Pb(NO_3)_2(aq) + 2KI(aq) \longrightarrow PbI_2(s) + 2KNO_3(aq)$

27. When copper powder is heated in the presence of air, its colour changes to black due to the formation of
a. copper oxide.
b. copper chloride.
c. copper sulphide.
d. copper hydride.

28. In the following chemical reaction
$MnO_2 + 4HCl \longrightarrow MnCl_2 + 2H_2O + Cl_2$
a. MnO_2 is oxidised to $MnCl_2$.
b. MnO_2 is reduced to $MnCl_2$.
c. HCl is reduced to Cl_2.
d. No species is oxidised or reduced.

29. Presence of salts in water
a. accelerates rusting.
b. retards rusting.
c. prevents rusting.
d. has no effect on the rate of rusting.

30. Bags of potato chips are filled with nitrogen gas to
a. prevent the chips from getting oxidised.
b. prevent the chips from absorbing moisture.
c. enhance the flavour of chips.
d. increase the moisture-absorbing capability of chips.

ANSWERS

1. a.	**2.** b.	**3.** b.	**4.** a.	**5.** a.	**6.** a.	**7.** b.
8. c.	**9.** b.	**10.** a.	**11.** a.	**12.** b.	**13.** c.	**14.** d.
15. a.	**16.** a.	**17.** c.	**18.** d.	**19.** c.	**20.** d.	**21.** b.
22. d.	**23.** d.	**24.** c.	**25.** d.	**26.** b.	**27.** a.	**28.** b.
29. a.	**30.** a.					

Chapter 2: ACIDS, BASES AND SALTS

1. Which of the following statements about acids is not true?
   a. Acids are sour in taste.
   b. Acids are soapy to touch.
   c. Acids furnish H^+ ions on being dissolved in water.
   d. Acids change the colour of blue litmus solution to red.

2. Name the gas produced when acids react with metal carbonates and metal bicarbonates.
   a. Oxygen
   b. Hydrogen
   c. Carbon dioxide
   d. Nitrous oxide

3. ..... is an olfactory indicator.
   a. Turmeric
   b. Litmus
   c. Vanilla
   d. Red cabbage juice

4. In which of the following solutions the pungent odour of onion will not be observed?
   a. Brine
   b. Vinegar
   c. NaOH solution
   d. Dilute HCl solution

5. Which of the following is not a natural indicator?
   a. Phenolphthalein
   b. Turmeric
   c. Red cabbage juice
   d. China rose extract

6. What happens when a strip of dry blue litmus paper is placed in a gas jar containing dry SO_2 gas?
   a. Blue litmus paper turns red.
   b. Blue litmus paper turns violet.
   c. Blue litmus paper turns white.
   d. No change occurs.

7. A few drops of dilute HCl were added to a test tube containing sodium carbonate. The gas formed was allowed to pass through a test tube containing freshly-prepared lime water. Which of the following would be observed?
   a. The lime water will turn milky.
   b. The lime water will turn dirty-yellow.
   c. A black precipitate will be formed in the test tube containing lime water.
   d. No change would be observed.

8. The reaction between an acid and a base is known as ..... reaction.
   a. decomposition
   b. combination
   c. neutralisation
   d. addition

9. Which of the following oxides will form a salt with dilute sulphuric acid?
   a. SO_2
   b. CO_2
   c. NO_2
   d. Na_2O

10. How are acids classified on the basis of source?
    a. Organic acids and inorganic acids
    b. Strong acids and weak acids
    c. Dilute acids and concentrated acids
    d. Monobasic acids and polybasic acids

11. Which of the following oxides will form a salt with NaOH solution?
    a. CaO
    b. MgO
    c. SO_2
    d. Li_2O

12. A zinc granule was added to a test tube containing dilute sulphuric acid. When a burning matchstick is brought near the mouth of the test tube, the gas produced will
    a. burn with a green flame.
    b. burn with a pop sound.
    c. burn with a crackling sound.
    d. not burn.

13. Which of the following statements is false?
    a. Curd and sour substance should not be stored in brass and copper vessels.
    b. While diluting acids, water should be added to acids in small amounts.
    c. Carbon dioxide does not support combustion.
    d. When metals react with acids, hydrogen gas is liberated.

14. Mixing an acid with water results in
    a. increase in the hydronium ion concentration of the solution per unit volume.
    b. decrease in the hydronium ion concentration of the solution per unit volume.
    c. no change in the hydronium ion concentration of the solution per unit volume.
    d. dissociation of hydronium ions.

15. *p*H refers to the
    a. logarithm of the hydrogen ion concentration of a solution.
    b. negative logarithm of the hydrogen ion concentration of a solution.
    c. logarithm of the hydroxyl ion concentration of a solution.
    d. negative logarithm of the hydroxyl ion concentration of a solution.

16. When a strip of *p*H paper was dipped in the aqueous solution of a substance X, the colour of the *p*H paper changed to orange yellow. This substance is most likely to be
    a. lemon juice.
    b. baking soda.
    c. rainwater.
    d. milk of magnesia.

17. What will be the *p*H of a solution which has equal concentrations of H^+ and OH^- ions?
    a. 5.6
    b. 6.3
    c. 7.0
    d. 9.0

18. When the *p*H of rainwater is less than ....., it is called acid rain.
    a. 12.5
    b. 10.5
    c. 8.3
    d. 5.6

19. We use antacids to get relief from indigestion. This suggests that antacids are
    a. mild acids.
    b. mild bases.
    c. salts.
    d. Indicators.

20. Name the acid present in ant sting.
    a. Methanoic acid
    b. Ethanoic acid
    c. Tartaric acid
    d. Succinic acid

21. Which of the following chemical substances can be used for treating highly acidic soils?
    a. NaCl
    b. CaO
    c. $CuSO_4 \cdot 5H_2O$
    d. H_2SO_4

22. A mixture is prepared by mixing equimolar solutions of HCl and NaOH. What will be the *p*H of this mixture?
    a. 2.1
    b. 3.5
    c. 5.6
    d. 7.0

23. Which of the following is a base but not an alkali?

a. NaOH **b.** KOH

c. $Fe(OH)_3$ **d.** NH_4OH

24. The *p*H of ..... is more than 7.

a. K_2SO_4 **b.** NH_4Cl

c. $ZnSO_4$ **d.** CH_3COONa

25. ..... is the salt of a weak acid and a weak base.

a. KCl **b.** $AlCl_3$

c. CH_3COONH_4 **d.** CH_3COONa

26. Which product is liberated at the anode during the chlor-alkali process?

a. Chlorine **b.** Hydrogen

c. Sodium hydroxide **d.** Oxygen

27. One of the products obtained during the chlor-alkali process is used as a disinfectant, in the treatment of water in swimming pools, and in the manufacture of PVC and chlorofluorocarbons. This product is

a. O_2. **b.** Cl_2.

c. NaOH. **d.** H_2.

28. Bleaching powder is produced by the action of chlorine on dry

a. quicklime. **b.** slaked lime.

c. caustic soda. **d.** caustic potash.

29. Which gas is produced when baking soda is mixed with water?

a. Hydrogen **b.** Oxygen

c. Carbon dioxide **d.** Sulphur dioxide

30. Which of the following is not a hydrated salt?

a. Washing soda **b.** Baking soda

c. Plaster of Paris **d.** Gypsum

ANSWERS

1. b.	**2.** c.	**3.** c.	**4.** c.	**5.** a.	**6.** d.	**7.** a.
8. c.	**9.** d.	**10.** a.	**11.** c.	**12.** b.	**13.** b.	**14.** b.
15. b.	**16.** a.	**17.** c.	**18.** d.	**19.** b.	**20.** a.	**21.** b.
22. d.	**23.** c.	**24.** d.	**25.** c.	**26.** a.	**27.** b.	**28.** b.
29. c.	**30.** b.					

Chapter 3: METALS AND NON-METALS

1. Name the property of metals by which they can be beaten into thin sheets.
   a. Malleability
   b. Ductility
   c. Sonority
   d. Metallic Lustre

2. Metals can be drawn into thin wires because they are
   a. malleable.
   b. ductile.
   c. sonorous.
   d. lustrous.

3. Diamond and graphite are allotropes of
   a. carbon.
   b. phosphorus.
   c. sulphur.
   d. iodine.

4. What is a homogeneous mixture of two or more metals or a metal and a non-metal called?
   a. Colloid
   b. Suspension
   c. Alloy
   d. Ore

5. German silver is an alloy of
   a. Cu and Zn.
   b. Sn and Pb.
   c. Al, Cu, Mg and Mn.
   d. Cu, Zn and Ni.

6. An alloy of ..... with another metal is called amalgam.
   a. lead
   b. tin
   c. mercury
   d. cadmium

7. Magnesium burns in air with a dazzling white light and forms a white powder. What will be the action of aqueous solution of this powder on red litmus paper?
   a. The red litmus paper will turn blue.
   b. The red litmus paper will turn violet.
   c. The red litmus paper will turn black.
   d. No change will occur on the red litmus paper.

8. Metal oxides are generally ..... in nature.
   a. acidic
   b. basic
   c. neutral
   d. amphoteric

9. Which of the following oxides is amphoteric in nature?
   a. Na_2O
   b. CaO
   c. Cu_2O
   d. Al_2O_3

10. Sodium and potassium are kept immersed in kerosene oil to
    a. prevent them from melting.
    b. prevent their reaction with oxygen.
    c. prevent them from hardening.
    d. prevent their reaction with carbon dioxide.

11. ..... reacts violently with cold water.
    a. Sodium
    b. Magnesium
    c. Calcium
    d. Iron

12. Which of the following statements is false?
    a. Potassium reacts violently with cold water.
    b. The reaction of calcium with water is less violent.

c. Magnesium neither reacts with cold water nor with hot water.

d. Zinc does not react either with cold water or with hot water.

13. Which of the following statements is true?

a. Metal oxides are acidic in nature.

b. Metal oxides are only basic in nature.

c. Metal oxides are either basic or amphoteric in nature.

d. Metal oxides are either acidic or amphoteric in nature.

14. Which of the following metals will not release hydrogen gas when added to dilute HCl?

a. Magnesium

b. Calcium

c. Zinc

d. Silver

15. Gold can be dissolved in

a. aqua regia.

b. brine solution.

c. fuming nitric acid.

d. conc. HCl.

16. A student took four test tubes and labelled them as A, B, C and D. He added equal volume of freshly-prepared copper sulphate to each test tube. He added a clean iron nail, a zinc granule, a piece of clean magnesium ribbon and a piece of clean silver wire to test tubes A, B, C and D respectively. In which test tube, the blue colour of the copper sulphate solution will not disappear?

a. Test tube A

b. Test tube B

c. Test tube C

d. Test tube D

17. When a copper wire is added to ferrous sulphate solution,

a. the colour of the solution change to pale blue.

b. the solution become colourless.

c. a black precipitate is formed in the solution after some time.

d. no reaction occurs.

18. What will be the chemical formula of the compound formed by calcium and bromine?

a. CaBr

b. $CaBr_2$

c. Ca_2Br

d. Ca_2Br_3

19. Identify the correct statement from the following.

a. Ionic compounds are formed by the transfer of electrons between metals and non-metals.

b. Ionic compounds are generally soft.

c. Ionic compounds have low melting and boiling points.

d. Ionic compounds are generally soluble in kerosene oil.

20. Metals are electropositive in nature because they

a. can easily donate electrons.

b. can easily gain electrons.

c. can form anions.

d. can share their electrons.

21. A solid compound, which has high melting and boiling points, is highly soluble in water but shows poor solubility in non-polar solvents. This compound is formed by the transfer of electrons between the constituent atoms. Which of the following characteristic will be shown by this compound?

a. The compound will conduct electricity in the solid state.

b. The compound will conduct electricity in the aqueous state.

c. The compound will not conduct electricity in the molten form.

d. The compound will conduct electricity due to the presence of free electrons.

22. The elements or compounds which occur naturally in the earth's crust are called

a. semi-metals.

b. minerals.

c. alloys.

d. double salts.

23. ..... occurs in free state in the earth's crust.

a. Gold

b. Copper

c. Aluminium

d. Sodium

24. Impurities such as sand, soil, etc. present in an ore are called

a. slag.

b. flux.

c. gangue.

d. minerals.

25. Cinnabar is an alloy of

a. lead.

b. zinc.

c. tin.

d. mercury.

ANSWERS

1. a.	**2.** b.	**3.** a.	**4.** c.	**5.** d.	**6.** c.	**7.** a.
8. b.	**9.** d.	**10.** b.	**11.** a.	**12.** c.	**13.** c.	**14.** d.
15. a.	**16.** d.	**17.** d.	**18.** b.	**19.** a.	**20.** a.	**21.** b.
22. b.	**23.** a.	**24.** c.	**25.** d.			

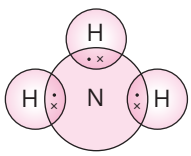
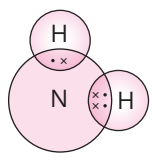
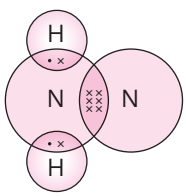
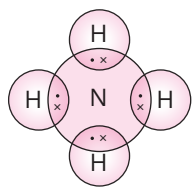
Chapter 4: CARBON AND ITS COMPOUNDS

1. What is the electronic configuration of carbon?
   a. 2, 6
   b. 2, 5
   c. 2, 4
   d. 2, 3

2. Carbon generally forms compounds by
   a. sharing electrons.
   b. gaining electrons.
   c. losing electrons.
   d. both gaining and losing electrons.

3. How many electron pairs are shared between the oxygen atoms in an oxygen molecule?
   a. One
   b. Two
   c. Three
   d. Four

4. Which of the following molecules contains a triple bond?
   a. Cl_2
   b. N_2
   c. H_2O
   d. CH_4

5. Which of the following is the correct electron dot structure of ammonia?
   a. 
   b. 
   c. 
   d. 

6. What are the compounds formed by the sharing of electrons between atoms called?
   a. Ionic compounds
   b. Electrovalent compounds
   c. Covalent compounds
   d. Inorganic compounds

7. Covalent compounds are generally poor conductors of electricity because
   a. they have weak intermolecular forces of attraction.
   b. they have low melting and boiling points.
   c. they have strong forces within their molecules.
   d. they do not have any charged particles.

8. Which of the following compounds will easily dissolve in carbon tetrachloride?
   a. Naphthalene
   b. Potassium chloride
   c. Sodium nitrite
   d. Copper sulphate

9. What are the compounds of carbon having double and triple bonds between their atoms called?
   a. Saturated compounds
   b. Unsaturated compounds

c. Cyclic compounds
d. Acyclic compounds

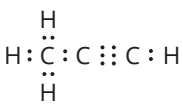
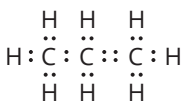
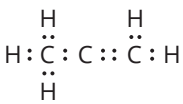
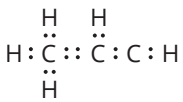
10. Which of the following statements is false?
a. In diamond, each carbon atom is bonded to four other carbon atoms.
b. Diamond has a rigid three-dimensional structure.
c. In graphite, layers of hexagonal arrays of carbon atoms are placed one above the other.
d. Graphite contains only single bonds.

11. What is the chemical formula of buckminsterfullerene?
a. C_{10}
b. C_{45}
c. C_{60}
d. C_{80}

12. ..... is a saturated compound.
a. Ethene
b. Ethyne
c. Propane
d. Propene

13. In which of the following compounds the valencies of all carbon atoms are satisfied by single bonds?
a. Ethene
b. Propyne
c. But-1-ene
d. Pentane

14. How many carbon atoms are there in pentane?
a. Four
b. Five
c. Six
d. Seven

15. The electron-dot structure of propyne is
a. 
b. 
c. 
d. 

16. The successive members of a homologous series differ by ..... in molecular mass.
a. 2 u
b. 10 u
c. 12 u
d. 14 u

17. The functional group present in carboxylic acids is
a. —CHO.
b. —COOH.
c. —OH.
d. —Cl.

18. The compounds CH_3OH, C_2H_5OH and C_3H_7OH are
a. alcohols.
b. carboxylic acids.
c. aldehydes.
d. ketones.

19. The next higher homologue of C_2H_5Cl is
a. CH_3Cl.
b. C_3H_7Cl.
c. CH_3Br.
d. C_3H_7Br.

20. The compounds $CH_3—CH_2—CH_2—CH_3$ and $CH_3—CH(CH_3)—CH_3$ are
a. allotropes.
b. isotopes.
c. homologues.
d. structural isomers.

21. What is the general chemical formula of alcohols?

a. C_nH_nO
b. $C_nH_{2n}O$
c. $C_nH_{n+1}O$
d. $C_nH_{2n+2}O$

22. How many isomers are possible for the compound with the chemical formula C_5H_{12}?

a. Two
b. Three
c. Four
d. Five

ANSWERS

1. c.	**2.** a.	**3.** b.	**4.** b.	**5.** a.	**6.** c.	**7.** d.
8. a.	**9.** b.	**10.** d.	**11.** c.	**12.** c.	**13.** d.	**14.** b.
15. a.	**16.** d.	**17.** b.	**18.** a.	**19.** b.	**20.** d.	**21.** d.
22. b.						

Chapter 5: PERIODIC CLASSIFICATION OF ELEMENTS

1. In Dobereiner's triads, elements are arranged in the order of increasing
   a. atomic number.
   b. atomic mass.
   c. melting point.
   d. density.

2. The atomic masses of lithium and potassium are 7 u and 39 u, respectively. If lithium, sodium and potassium form a Dobereiner's triad, what will be the atomic mass of sodium?
   a. 23 u
   b. 32 u
   c. 46 u
   d. 53 u

3. In Newlands' classification, elements were arranged in the order of increasing
   a. valency.
   b. atomic volume.
   c. atomic mass.
   d. density.

4. Name the eighth element after beryllium in Newlands' octaves.
   a. Sodium
   b. Magnesium
   c. Aluminium
   d. Silicon

5. The Newlands' law of octaves was found to be applicable only till
   a. cobalt.
   b. iron.
   c. zinc.
   d. calcium.

6. Newlands' classification of elements ended at which of the following elements?
   a. Tellurium
   b. Cadmium
   c. Osmium
   d. Thorium

7. The elements in which of the following options were placed in the same slot in Newlands' law of octaves?
   a. F and Cl
   b. Co and Ni
   c. Mn and Zn
   d. O and Br

8. According to Mendeleev's periodic law, the properties of elements are a periodic function of their
   a. atomic mass.
   b. atomic volume.
   c. atomic size.
   d. atomic number.

9. According to Mendeleev, the general chemical formula of the oxides formed by the elements of group V is
   a. EO.
   b. EO_2.
   c. E_2O_3.
   d. E_2O_5.

10. In the Mendeleev's periodic table, sulphur is present in group VI. What will be the chemical formula of the hydride of sulphur as per Mendeleev's classification?
    a. SH
    b. SH_2
    c. SH_3
    d. SH_4

11. In which of the following options the sequence of the given elements was inverted by Mendeleev (with respect to atomic mass) while arranging elements in his periodic table?
    a. Mg and Al
    b. As and Se
    c. I and Te
    d. Se and Br

12. ..... has properties similar to those predicted for *eka*-boron.
    a. Silicon
    b. Scandium
    c. Gallium
    d. Germanium

13. The formula of the chloride formed by *eka*-aluminium is similar to that formed by
    a. scandium.
    b. manganese.
    c. gallium.
    d. germanium.

14. One of the merits of Mendeleev's periodic table was that
    a. the atomic masses of elements increased in an irregular manner on moving from one element to another.
    b. noble gases could be placed in a new group without disturbing the existing order.
    c. isotopes could not be placed properly in his periodic table.
    d. no fixed position could be allotted to hydrogen.

15. Hydrogen resembles both
    a. alkali metals and halogens.
    b. alkaline earth metals and halogens.
    c. alkali metals and noble gases.
    d. alkaline earth metals and noble gases.

16. According to the Modern Periodic Law, the properties of elements are a periodic function of their
    a. atomic mass.
    b. atomic size.
    c. atomic volume.
    d. atomic number.

17. In the Modern Periodic Table, there are ..... groups.
    a. 7
    b. 9
    c. 17
    d. 18

18. How many elements are there in the fourth period of the periodic table?
    a. 2
    b. 8
    c. 18
    d. 32

19. The elements in a group have the same
    a. atomic number.
    b. atomic mass.
    c. electronic configuration.
    d. valency.

20. Which of the following elements is not a semi-metal?
    a. Boron
    b. Silicon
    c. Germanium
    d. Osmium

21. The electronic configuration of an element X is 2, 8, 8, 7. This element should be placed in the same group as
    a. sodium.
    b. aluminium.
    c. sulphur.
    d. chlorine.

22. An element with electronic configuration 2, 8, 4 belongs to the ..... period of the periodic table.
    a. second
    b. third
    c. fourth
    d. eighth

23. The electronic configuration of an element is 2, 8, 6. To which period and group does this element belong?
    a. 2nd period and 6th group
    b. 2nd period and 16th group
    c. 3rd period and 6th group
    d. 3rd period and 16th group

24. An element M belongs to the third period and group 13 of the periodic table. What will be the chemical formula of the chloride of this element?
    a. MCl
    b. MCl_2
    c. M_3Cl
    d. MCl_3

25. How does atomic radius of elements vary down a group?

a. It increases down a group.
b. It decreases down a group.
c. It first decreases then increases down a group.
d. It does not vary down a group.

26. Which of the following does not increase as we move down a group?

a. Atomic radius
b. Number of shells in an atom
c. Metallic character
d. Electronegativity

27. Which of the following elements is the most metallic in nature?

a. Sodium
b. Calcium
c. Caesium
d. Strontium

28. The amount of energy required to remove the most loosely-bound electron from an isolated gaseous atom is called

a. electronegativity.
b. electron affinity.
c. ionisation energy.
d. atomisation energy.

29. Which of the following elements will have the least ionisation energy?

a. Calcium
b. Caesium
c. Bismuth
d. Aluminium

30. Name the most electronegative element in the periodic table.

a. Fluorine
b. Chlorine
c. Oxygen
d. Sulphur

ANSWERS

1. b.	**2.** a.	**3.** c.	**4.** b.	**5.** d.	**6.** d.	**7.** b.
8. a.	**9.** d.	**10.** b.	**11.** c.	**12.** b.	**13.** c.	**14.** b.
15. a.	**16.** d.	**17.** d.	**18.** c.	**19.** d.	**20.** d.	**21.** d.
22. b.	**23.** d.	**24.** d.	**25.** a.	**26.** d.	**27.** c.	**28.** c.
29. b.	**30.** a.					