SCIENCE

PRACTICE SET-TERM II

SESSION- 2021-2022

Praadis Education
The Complete Learning App

ASSIGNMENT QUESTIONS SET – 1
CHAPTER – 4
CARBON AND ITS COMPOUND

1. Which of the following is not a saturated hydrocarbon ?

i) Cyclohexane.

ii) Benzene.

iii) Butane

iv) isobutene

2. The bond between two identical non metallic atom has a pair of electron ?

i) un equally shared between two atoms.

ii) Transferred completely from one atom to another.

iii) With identical spins

iv) Unequally shared between them.

3. Covalent compounds are generally

i) Soluble in water

ii) Insoluble in water

iii) Ionize in water

iv) Hydrolyse in water

4. Propane with the molecular formula C_3H_8 has

i) 7covalent bonds

ii) 8 covalent bonds

iii) 9 covalent bonds

iv) 10 Covalent bonds.

5. A hydrocarbon reacts with ammonical cuprous chloride solution to form a red precipitate .The hydrocarbon is

i)ethane

ii)ethene

iii)butane

iv)1-propyne

6. Which of the following substance is added to denature Ethanol ?

i)methanol ii)pyridine

iii)copper sulphate iv)all of them

7. Which of the following is not an allotropic form of carbon

i)fluorine ii)fullerene

iii)diamond iv)graphite

8. Which of the following represents the correct decreasing order of hydrogen atoms ?

i)alkanes , alkenes , alkynes

ii)alkanes , alkaynes , alkenes

iii)alkenes , alkynes , alkanes

iv)alkynes , alkanes , alkenes

9. Detergents are sodium or potassium salts of long chain of ;-

i)aldehydes

ii)ketones

iii)carboxylic acid

iv)sulphonic acid

10. Which of the following represents the structure of N_2 Mmolecule ?

i) N≡ N

ii) N = N

iii) N - N

iv) None of the above

11. In double covalent bond there is sharing of

i) 2 electrons

ii) 4 electrons

iii) 6 electrons

iv) 3 electrons

12. Cation is formed when

i) atom gains electrons

ii) atom loses electrons

iii) proton is lost by the atom

iv) atom shared by electrons

13. The total no. of electrons that take part in forming a bond in N_2 is

i) 2

ii) 4

iii) 6

iv) 10

14. Which of the following has the weakest carbon-carbon strength?

i)C_2H_2

ii)C_2H_4

iii)C_2H_6

iv)all have the same bond strength

15. Which of the following salt when dissolved in water produce hard water.

i) calcium sulphate

ii) magnesium bicarbonate

iii) calcium chloride

iv) any of the above

16. Which of the following is not a saturated hydrocarbon ?

i) cyclohexane

ii) benzene

iii) butane

iv) isobutane

17. The bond between two identical nonmetallic atom has a pair of electron ?

i) unequally shared between two atoms

ii) transferred completely from one atom to another

iii) With identical spins

iv) Equally shared between them

18. Covalent compounds are generally –

i) Soluble in water

ii) insoluble in water

iii) Ionize in water

iv) hydrolyse in water

19. Propane with molecular formula C_3H_8 has –

i) 7 covalent bonds

ii) 8 covalent bonds

iii) 9 covalent bonds

iv) 10 covalent bonds

20. A hydrocarbon reacts with ammonical cuprous chloride solution to form a red precipitate, the hydrocarbon is –

i) Ethane

ii) ethane

iii) butane

iv) 1-propyne

21. Which of the following substance is added to denature Ethanol?

i) Methanol ii) pyridine

iii) copper sulphate iv) all of these

22. Which of the following is not an allotropic form of carbon ?

i) fluorine

ii) fullerene

iii) diamond

iv) graphite

23. Which of the following represents the correct deceasing order of hydrogen atoms ?

i) alkanes, alkenes, alkynes

ii) alkanes, alkynes, alkenes

iii) alkenes, alkynes, alkanes

iv) alkynes, alkanes, alkenes

24. Detergents are sodium or potassium salts of long chain of :

i) aldehydes

ii) ketones

iii) carboxylic acid

iv) sulphonic acid

25. In double covalent bond there is a sharing of

i) 2 electrons

ii) 4 electrons

iii) 6 electrons

iv) 3 electrons

26. Cation is formed when

i) atom gains electrons

ii) atom losses electrons

iii) proton is lost by the atom

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27. The total number of electrons that take part in forming a bond in N_2 is

i) 2

ii) 4

iii) 6

iv) 10

28. Which of the following has the weakest carbon-carbon strength ?

i) C_2H_2

ii) C_2H_4

iii) C_2H_6

iv) all have the same bond strength

29. Which of the following salt when dissolved in water produce hard water ?

i) calcium sulphate

ii) magnesium bicarbonate

iii) calcium chloride

iv) any of the above.

30. The two colours seen at the extreme ends of the pH charts are:-

i) red and blue

ii)red and green

iii) green and blue

iv) orange and green

31. Carboxylic acids on heating with P_2O_5 gives:-

i) ethers

ii) alcohol

iii) carbonyl compounds

iv) anhydrides

32. Synthetic flavours contain:-

i) unsaturated acids

ii) esters

iii) dilute carboxylic acids

iv) hydroxyl acids

33. Out of the following which one is used as preservative for pickle and sauces:-

i) esters ii) acetone

iii) aldehyde iv) acetic acid

34. Brisk effervescences produced when a pinch of Na_2CO_3 is added to CH_3COOH is due to the formation of :-

i) H_2 gas ii) CO_2 gas

iii) CO gas iv) CH_4 gas

35. When an acetic acid reacts with an alcohol in the presence of conc. H_2SO_4:-

i) esters are formed ii) ketones are formed

iii) aldehydes are formed iv) none of these

36. Sodium bi carbonate solution is added to dilute Ethanoic acid. It is observed that:-

i) a gas evolves

ii) a solid settles at the bottom

iii) the mixture becomes vapour

iv) the colour of the mixture becomes light Yellow

37. Ethanoic acid was added to sodium bicarbonate sol. And the gas evolved was tested with a burning splinter. The following four observations were reported:-

1) the gas burns with the pop sound and the flame gets extinguished.

2) the gas does not burn out but the splinter burns with a pop sound

3) the flame extinguishes and the gas does not burn

4) the gas burns with a blue flame and the splinter burns brightly.

The correct observation is reported in:-

i) 1

ii) 2

iii) 3

iv) 4

38. 2ml of ethanoic acid was taken in each test tube 1 and 2 .A red litmus paper was introduced in test tube 1 and a pH paper was introduced in test tube 2. The experiment was performed by 4 students A, B, C, D and they reported their observation as given in the table. Student action on red action on litmus PH paper

A) Turned blue turned pink

B) Remains unchanged turned green

C) Turned blue turned blue

D) Remains unchanged turned pink

The correct observation is reported in

i) A

ii) B

iii) C

iv) D

39. Acetic acid was added to a solid X kept in a Test tube. A colourless, odourless gas Y was evolved. The gas was passed through the lime water, which turned milky. It concludes that:-

i) solid X is NaOH and the gas Y is CO_2

ii) solid X is Na_2CO_3 and the gas Y is CO_2

iii) solid X is sodium acetate and the gas y is CO_2

iv) solid X is sodium chloride and the gas Y is CO_2

40. Why is carbon tetravalent?

41. The formula of a hydrocarbon is C_nH_{2n}. Name the family to which it belongs and also predicts its nature.

42. What is the valency of carbon in CH_3-CH_3, CH_2=CH_2 and HC=CH ?

43. Out of butter and ground nut oil , which is unsaturated in Nature?

44. Why is high temperature not favourable for alcoholic fermentation?

45. Name a cyclic unsaturated hydrocarbon, containing three double bonds?

46. What is the difference in the molecular mass of any two adjacent homologues?

47. Which has triple bond ; C_2H_4 ,C_3H_6 and C_3H_4 ?

48. Which substance is added to denature ethyl alcohol?

49. Which ions are responsible for making water hard?

50. Name the catalyst commonly used in hydrogenation of oil to form fats?

51. Write the name and molecular formula of alcohol derived from butane ?

52. Which gas is evolved when sodium carbonate or bicarbonate is added to ethanoic acid?

53. What is SCUM ?

54. What are hydrophobic and hydrophilic parts in soaps?

55. How much percentage of earth's crust constitutes carbon element ?

56. What do you mean by covalency ?

57. What is covalent bond ?

58. What is functional group ?

59. What is organic chemistry ?

60. What name is given to the reaction which take place when Ethanoic acid reacts with ethanol in the presence of conc. Sulphuric acid ? Name the products obtained in this reaction.

61. What is bromination ? Write the structural formula of product obtained on bromination of propene.

62. Define covalency ?

63. Write the structural formula of the isomers of n-butane?

64. Name the organic acid present in vinegar. Write its Chemical formula also.

65. The structural formula of an ester is $HCOOCH_2CH_2CH_3$ write the formula of acid and the alcohol from which it is made ?

66. What happens when ethanol reacts with

(i) sodium

(ii) potassium permanganate solution.

67. Which of the following hydrocarbons undergo addition reactions : C_2H_6, C_3H_8, C_3H_6, C_2H_2 and CH_4.

68. What is hydrogenation? Write its industrial application.

69. Give a test that can be used to differentiate between butter and cooking oil ?

70. Give the names of the functional group;-

(i) –CHO

(ii) -C=O

(iii) –OH

(iv) –COOH

71. Explain the following terms :

a) Etherification

b) Saponification

c) Dehydration

72. An organic compound A having molecular fomula $C_2H_4O_2$ reacts with Sodium metal Na evolves a gas B which readily catches fire. A also reacts with Ethanol in the presence of concentrated Sulphuric acid to form a sweet smelling substance C in making perfumes.

a) Identify the compounds A, B and C.

b) Write balanced chemical equation to represent the conversion of

(i). Compound A to compound B.

(ii). Compound A to compound C.

73. Give the name of the following :

a) An Aldehyde derived from Ethane.

b) Ketone derived from Butane.

c) The compound obtained by the Oxidation of Ethanol by Chromic anhydride.

74. Write chemical equations of the reactions of Ethanoic acid with :

a) Sodium

b) Sodium Carbonate

c) Ethanol in the presence of conc. H_2SO_4.

75. Give a test to distinguish between:

a) Ethane and Ethene

b) Ethanol with Ethanoic acid.

c) Soaps and detergents.

76. Complete the following reactions:

a) $H_2C=CH_2 + H_2O\ H_2SO_4$

b) $HC\equiv CH + Br_2$

c) $C_2H_5OH + Na$

d) $CH_3COOH + C_2H_5OH$

77. Two carbon compounds A and B have the molecular formula C3H8 and C3H6 respectively. Which one of the two each most likely to show addition reaction? Justify your

answer. Explain with the help of a chemical equation, how an addition is useful in vegetable Ghee industry.

78. What substance should be oxidised to prepare acetic acid (CH_3COOH)? How can ethanol and Ethanoic acid be differentiated?

79. Write down the difference between soap and detergents.

80. An organic compound A is widely used as a preservative in pickles and has a molecular formula $C_2H_4O_2$. This compound reacts with ethanol to form a sweet smelling compound B.

i) Identify the compound A.

ii) Write the chemical equation for its reaction with Ethanol to form compound B.

iii) How can we get compound A back from B?

iv) Name the process and write corresponding chemical equation.

v) Which gas is produced when compound A reacts with washing soda? Write the chemical equation

81. An organic compound X with a molecular formula C_2H_6O undergoes oxidation with in presence of alkaline $KMnO_4$ to form a compound Y. X on heating in presence of Conc. H_2SO_4 at 443K gives Z.which on reaction with H_2O in presence of H_2SO_4 gives back `X.` `Z` reacts with Br_2 (aq) and decolorizes it. Identify X, Y, & Z.and write the reactions involved.

82. An organic compound 'A' is widely used as a preservative in pickles and has a molecular formula $C_2H_2O_2$. This compound reacts with ethanol to form a sweet smelling compound 'B.

(i) Identify the compound 'A'

(ii) Write the chemical equation for its reaction with ethanol to form compound 'B'. (iii) How can we get compound 'A' back from 'B'?

(iv) Name the process and write corresponding chemical equation.

(v) Which gas is produced when compound 'A' reacts with washing soda? Write the chemical equation.

83. Hydrocarbon `X` and `Y` having molecular formulae C_3H_8 and C_3H_6 respectively. Both are burnt in different spatula on the bunsen flame. Indicate the color of the flame produced by `X` and `Y`. Identify `X` and `Y`. Write the structural formulae.

84. A compound `X` has molecular formula C_4H_{10}. It undergoes substitution reaction readily than addition reaction. It burns with blue flame and is present in LPG. Identify `X` and give the balanced equation for its combustion and substitution reaction with C_{l2} in presence of sunlight.

85. `A` compound works well with hard water. It is used for making shampoos & products for cleaning clothes. A is not 100% biodegradable and causes water pollution. `B` does not work well with hard water. It is 100% biodegradable and does not create water pollution. Identify A & B.

86. An organic compound P with molecular formula C_2H_6O is an active ingredient of all alcoholic drinks. It is also used in medicines such as tincture iodine, cough syrups. Identify `P`. Drop a small piece of sodium into the test tube containing `P`.A new compound `Q` is formed with the evaluation of colorless and odorless gas Name the gas evolved and compound `Q` write the chemical reaction.

87. A cyclic compound `X` has molecular formula C_6H_6. It is unsaturated and burns with sooty flame. Identify `X` and write its structural formula. Will it decolorize bromine water or not and why?

88. An organic compounds `A` is a constituent of antifreeze and has the molecular formula C_2H_6O. upon reaction with alkaline $KMnO_4$, the compound `A` is oxidized to another `B` with formula $C_2H_6O_2$. Identify the compound A` and `B`. Write the chemical equation for the reaction which leads to the formulation of `B`

89. Two compounds `X` and `Y` have the same formula $C_2H_4O_2$. One of them reacts with sodium metal to liberate H_2 and CO_2 with $NaHCO_3$. Second one does not reacts with Na metal and $NaHCO_3$ but undergo hydrolysis with NaOH to form salt of carboxylic acid and compound `Z` which is called wood spirit. Identify `X`, `Y`, and `Z` and write chemical equation for the reaction involved.

90. A compound `X` with molecular formula C_2H_4 burns with a sooty flame. It decolourise bromine water. Identify `X`. Will it dissolve in water or not? Will it conduct electricity in aq. Solution? Will it have high melting point or low melting point ?

ASSIGNMENT QUESTIONS SET – 2
CHAPTER – 4
CARBON AND ITS COMPOUND

1. Carbon exists in the atmosphere in the form of

(a) carbon monoxide only

(b) carbon monoxide in traces and carbon dioxide

(c) carbon dioxide only

(d) coal

2. Which of the following statements are usually correct for carbon compounds? These

(i) are good conductors of electricity

(ii) are poor conductors of electricity

(iii) have strong forces of attraction between their molecules

(iv) do not have strong forces of attraction between their molecules

(a) (i) and (iii) (b) (ii) and (iii)

(c) (i) and (iv) (d) (ii) and (iv)

3. A molecule of ammonia (NH_3) has

(a) only single bonds

(b) only double bonds

(c) only triple bonds

(d) two double bonds and one single bond

4. Buckminsterfullerene is an allotropic form of

(a) phosphorus

(b) sulphur

(c) carbon

(d) tin

5. Oils on treating with hydrogen in the presence of palladium or nickel catalyst form fats. This is an example of

(a) Addition reaction

(b) Substitution reaction

(c) Displacement reaction

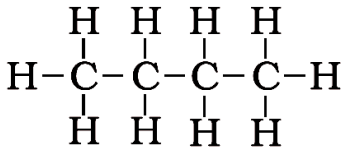
(d) Oxidation reaction

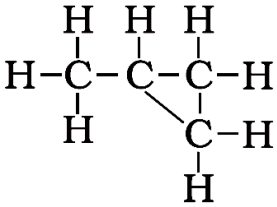
6. In which of the following compounds, — OH is the functional group?

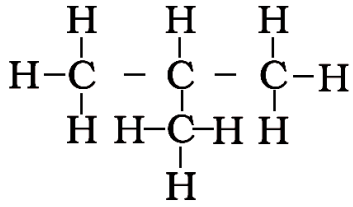
(a) Butanone (b) Butanol

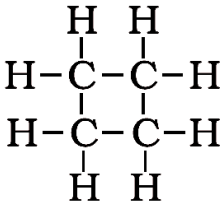
(c) Butanoic acid (d) Butanal

7. Which of the following are correct structural isomers of butane?

(i) 

(iii) 

(ii) 

(iv) 

(a) (i) and (iii) (b) (ii) and (iv)

(c) (i) and (ii) (d) (iii) and (iv)

8. In the below given reaction, alkaline KMnO4 acts as

$$CH_3 - CH_2 - OH \xrightarrow{\text{Alkaline } KMnO_4 + \text{Heat}} CH_3 - COOH$$

(a) reducing agent

(b) oxidising agent

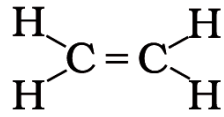
(c) catalyst

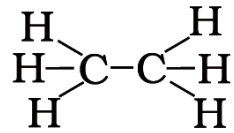
(d) dehydrating agent

9. Structural formula of ethyne is

(a) $H - C \equiv C - H$

(b) $H_3 - C \equiv C - H$

(c) 

(d) 

10. The soap molecule has a

(a) hydrophilic head and a hydrophobic tail

(b) hydrophobic head and a hydrophilic tail

(c) hydrophobic head and a hydrophobic tail

(d) hydrophilic head and a hydrophilic tail

11. Which of the following is the correct representation of electron dot structure of nitrogen?

(a) :N⋮⋮N:

(b) :N⋮⋮N:

(c) :N⋮N:

(d) :N⋮⋮N:

12. Identify the unsaturated compounds from the following

(i) Propane

(ii) Propene

(iii) Propyne

(iv) Chloropropane

(a) (i) and (ii) (b) (ii) and (iv)

(c) (iii) and (iv) (d) (ii) and (iii)

13. Chlorine reacts with saturated hydrocarbons at room temperature in the

(a) absence of sunlight

(b) presence of sunlight

(c) presence of water

(d) presence of hydrochloric acid

14. In the soap micelles

(a) the ionic end of soap is on the surface of the cluster while the carbon chain is in the interior of the cluster.

(b) ionic end of soap is in the interior of the cluster and the carbon chain is out of the cluster.

(c) both ionic end and carbon chain are in the interior of the cluster

(d) both ionic end and carbon chain are on the exterior of the cluster

15. Pentane has the molecular formula C_5H_{12}. It has

(a) 5 covalent bonds

(b) 12 covalent bonds

(c) 16 covalent bonds

(d) 17 covalent bonds

16. Ethanol reacts with sodium and forms two products. These are

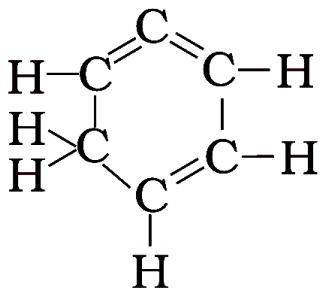
(a) sodium ethanoate and hydrogen

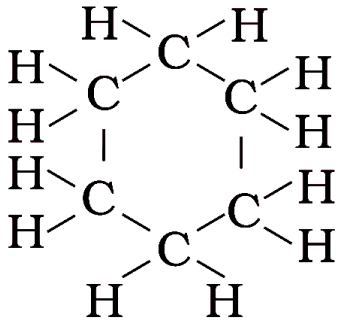
(b) sodium ethanoate and oxygen

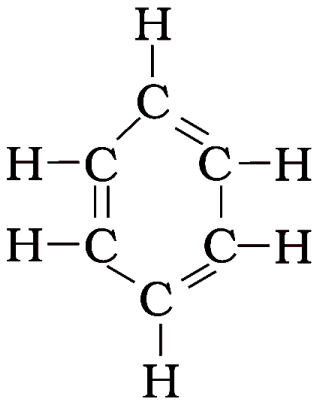
(c) sodium ethoxide and hydrogen

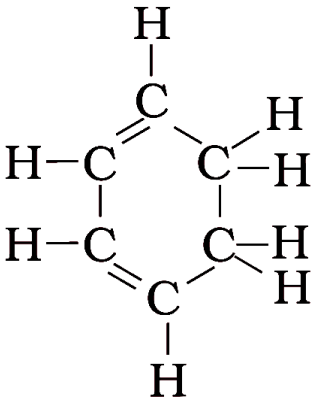
(d) sodium ethoxide and oxygen

17. Structural formula of benzene is:

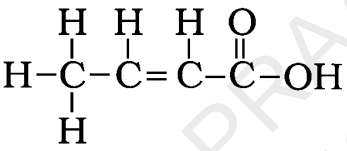
(a) 

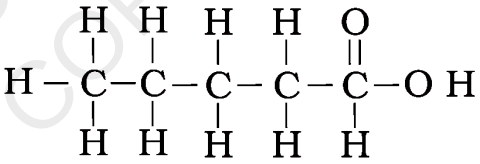
(b) 

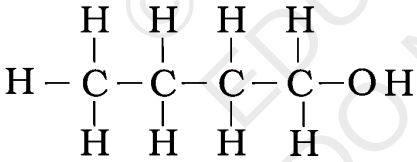
(c) 

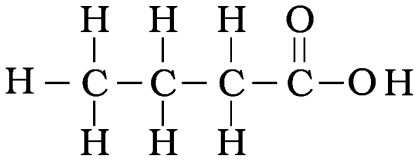
(d) 

18. The correct structural formula of butanoic acid is

(a) 

(b) 

(c) 

(d) 

19. Vinegar is a solution of

(a) 50% – 60% acetic acid in alcohol

(b) 5% – 8% acetic acid in alcohol

(c) 5% – 8% acetic acid in water

(d) 50% – 60% acetic acid in water

20. Mineral acids are stronger acids than carboxylic acids because

(i) mineral acids are completely ionised

(ii) carboxylic acids are completely ionised

(iii) mineral acids are partially ionised

(iv) carboxylic acids are partially ionised

(a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (ii) (d) (iii) and (iv)

21. Carbon forms four covalent bonds by sharing its four valence electrons with four univalent atoms, e.g. hydrogen. After the formation of four bonds, carbon attains the electronic configuration of

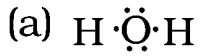
(a) helium

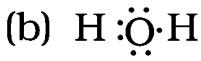
(b) neon

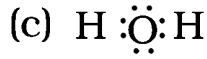
(c) argon

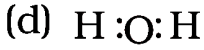
(d) krypton

22. The correct electron dot structure of a water molecule is

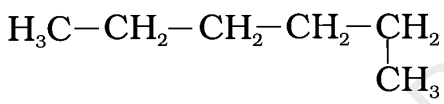
(a) 

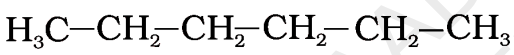
(b) 

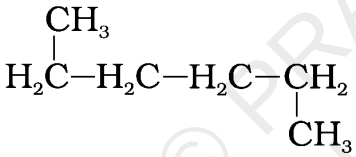
(c) 

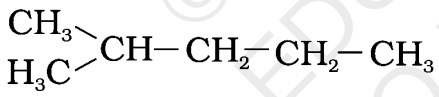
(d) 

23. Which of the following is not a straight chain hydrocarbon?

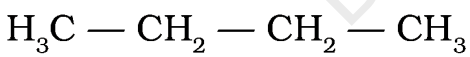
(a) 

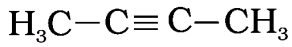
(b) 

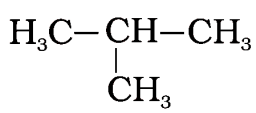
(c) 

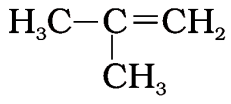
(d) 

24. Which among the following are unsaturated hydrocarbons?

(i) 

(ii) 

(iii) 

(iv) 

(a) (i) and (iii) (b) (ii) and (iii)

(c) (ii) and (iv) (d) (iii) and (iv)

25. Which of the following does not belong to the same homologous series?

(a) CH_4 (b) C_2H_6

(c) C_3H_8 (d) C_4H_8

26. The name of the compound $CH_3 — CH_2 — CHO$ is

(a) Propanal

(b) Propanone

(c) Ethanol

(d) Ethanal

27. The heteroatoms present in $CH_3 — CH_2 — O — CH_2— CH_2Cl$ are

(i) oxygen

(ii) carbon

(iii) hydrogen

(iv) chlorine

(a) (i) and (ii) (b) (ii) and (iii)

(c) (iii) and (iv) (d) (i) and (iv)

28. Which of the following represents saponification reaction?

(a) $CH_3COONa + NaOH \xrightarrow{CaO} CH_4 + Na_2CO_3$

(b) $CH_3COOH + C_2H_5OH \xrightarrow{H_2SO_4} CH_3\ COOC_2H_5 + H_2O$

(c) $2CH_3COOH + 2Na \rightarrow\ 2CH_3\ COONa + H_2$

(d) $CH_3COOC_2H_5 + NaOH \rightarrow CH_3\ COONa + C_2\ H_5OH$

29. The first member of alkyne homologous series is

(a) ethyne

(b) ethene

(c) propyne

(d) methane

30. Draw the electron dot structure of ethyne and also draw its structural formula

31. Why detergents are better cleansing agents than soaps? Explain.

32. Name the functional groups present in the following compounds

(a) $CH_3\ CO\ CH_2\ CH_2\ CH_2\ CH_3$

(b) $CH_3\ CH_2\ CH_2\ COOH$

(c) $CH_3\ CH_2\ CH_2\ CH_2\ CHO$

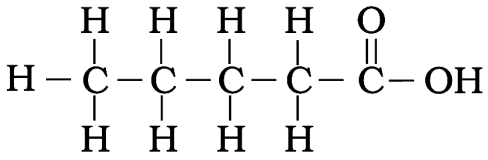
(d) $CH_3\ CH_2\ OH$

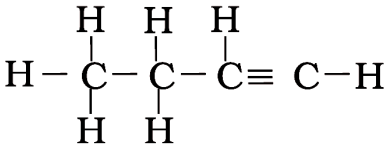
33. How is ethene prepared from ethanol? Give the reaction involved in it.

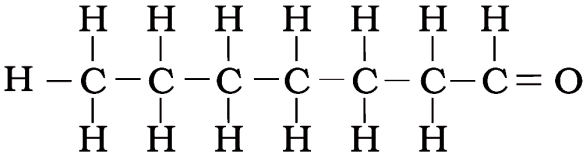
34. Intake of small quantity of methanol can be lethal. Comment.

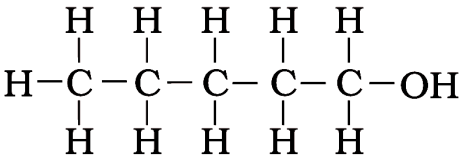
35. A gas is evolved when ethanol reacts with sodium. Name the gas evolved and also write the balanced chemical equation of the reaction involved.

36. Write the names of the following compounds

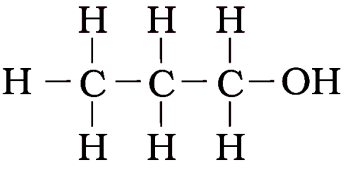
(a) 

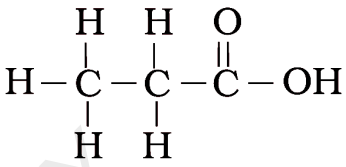
(b) 

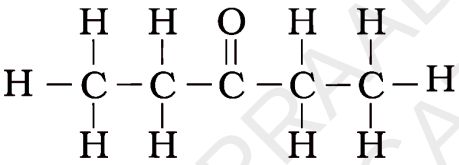
(c) 

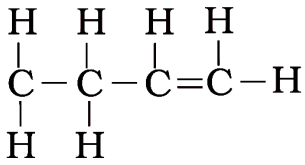
(d) 

37. Identify and name the functional groups present in the following compounds.

(a) 

(b) 

(c) 

(d) 

38. A compound X is formed by the reaction of a carboxylic acid $C_2H_4O_2$ and an alcohol in presence of a few drops of H_2SO_4. The alcohol on oxidation with alkaline $KMnO_4$ followed by acidification gives the same carboxylic acid as used in this reaction. Give the names and structures of (a) carboxylic acid, (b) alcohol and (c) the compound X. Also write the reaction.

39. Ethene is formed when ethanol at 443 K is heated with excess of concentrated sulphuric acid. What is the role of sulphuric acid in this reaction? Write the balanced chemical equation of this reaction.

40. Carbon, Group (14) element in the Periodic Table, is known to form compounds with many elements. Write an example of a compound formed with

(a) chlorine (Group 17 of Periodic Table)

(b) oxgygen (Group 16 of Periodic Table)

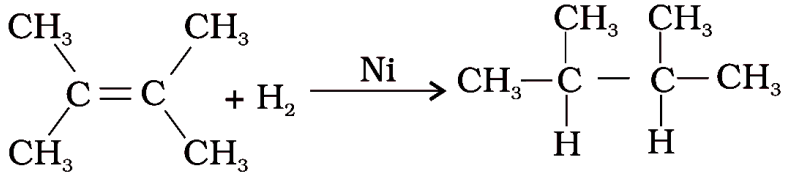
41. In electron dot structure, the valence shell electrons are represented by crosses or dots. (a) The atomic number of chlorine is 17. Write its electronic configuration (b) Draw the electron dot structure of chlorine molecule.

42. Catenation is the ability of an atom to form bonds with other atoms of the same element. It is exhibited by both carbon and silicon. Compare the ability of catenation of the two elements. Give reasons.

43. Unsaturated hydrocarbons contain multiple bonds between the two C-atoms and show addition reactions. Give the test to distinguish ethane from ethene.

44. Write the structural formulae of all the isomers of hexane.

45. What is the role of metal or reagents written on arrows in the given chemical reactions?

(a) 

(b) $CH_3\,COOH + CH_3\,CH_2\,OH \xrightarrow{\text{Conc. } H_2SO_4} CH_3\,COOC_2\,H_5 + H_2O$

(c) $CH_3\,CH_2\,OH \xrightarrow[\text{Heat}]{\text{Alk. } KMnO_4} CH_3\,COOH$

46. A salt X is formed and a gas is evolved when ethanoic acid reacts with sodium hydrogencarbonate. Name the salt X and the gas evolved. Describe an activity and draw the diagram of the apparatus to prove that the evolved gas is the one which you have named. Also, write chemical equation of the reaction involved.

47. What are hydrocarbons? Give examples.

48. Give the structural differences between saturated and unsaturated hydrocarbons with two examples each.

49. What is a functional group? Give examples of four different functional groups.

50. Name the reaction which is commonly used in the conversion of vegetable oils to fats. Explain the reaction involved in detail.

51. Write the formula and draw electron dot structure of carbon tetrachloride.

52. What is saponification? Write the reaction involved in this process.

53. Esters are sweet-smelling substances and are used in making perfumes. Suggest some activity and the reaction involved for the preparation of an ester with well labeled diagram.

54. A compound C (molecular formula, $C_2H_4O_2$) reacts with Na – metal to form a compound R and evolves a gas which burns with a pop sound. Compound C on treatment with an alcohol A in presence of an acid forms a sweet smelling compound S (molecular formula, $C_3H_6O_2$). On addition of NaOH to C, it also gives R and water. S on treatment with NaOH solution gives back R and A. Identify C, R, A, S and write down the reactions involved.

55. Draw the possible isomers of the compound with molecular formula C_3H_6O and also give their electron dot structures.

56. How would you bring about the following conversions? Name the process and write the reaction involved.

(a) ethanol to ethene.

(b) propanol to propanoic acid.

Write the reactions.

57. Explain the given reactions with the examples

(a) Hydrogenation reaction

(b) Oxidation reaction

(c) Substitution reaction

(d) Saponification reaction

(e) Combustion reaction

58. An organic compound A on heating with concentrated H_2SO_4 forms a compound B which on addition of one mole of hydrogen in presence of Ni forms a compound C. One mole of compound C on combustion forms two moles of CO_2 and 3 moles of H_2O. Identify the compounds A, B and C and write the chemical equations of the reactions involved.

59. Define Allotropy.

60. What is vinegar ?

61. What is combustion ?

62. How can you differentiate saturated and unsaturated Hydrocarbon on the basis of burning behaviour ?

63. Give two advantages of synthetic detergents over soaps ?

64. What are substitution reactions ?

65. Differentiate between diamond and graphite.

66. Discuss the method of preparation of soap in the laboratory.

67. Write five ill effects of alcohol drinking.

68. Differentiate between ionic compounds and covalent compounds.

69. Give some important properties of ethanol (ethyl alcohol).

70. Give five main advantages of synthetic detergents over soaps.

71. Write important uses of (a) ethanol and (b) ethanoic acid.

72. What happens when ethanol reacts with (i) sodium (ii) potassium permanganate solution.

73. An organic acid ‘X’ is a liquid which often freezes during winter time in cold countries, has the molecular formula, $C_2H_4O_2$. On warming it with ethanol in the presence of a few drops of concentrated sulphuric acid, a compound ‘Y’ with a sweet smell is formed

(i) Identify ‘X’ and ‘Y’. (ii) Write a chemical equation for the reaction involved.

74. Write name of the following –

i. Alkaline earth metal belonging to the third period

ii. The alkali metal atom having largest atomic radius

iii. The halogen atom belonging to fourth period

iv. The element having lowest ionization energy

v. The element having second lowest electronegativity

75. Organic compound 'x' of molecular formula $C_2H_4O_2$ gives brisk effervescence with sodium bi carbonate . give name and molecular formula of x with balanced equation

76. Soaps are not considered as effective cleansing agent. Why?

77. How does melting and boiling points of hydrocarbon change with the increase in molecular mass ?

78. Write down the relevant chemical equation involved in decolourisation.

79. A compound X has molecular formula C3H4 one mole of X reacts with 2 moles of hydrogen to yield a compound Y deduce the structure of X and Y.

80. What is dehydration reaction? Give one example.

81. What is hydrolysis?

82. Why doesn't soap form micelles in ethanol as they form in water?

83. Three elements X,Y and Z belong to 17TH group but to 2nd 3th and 4th period respectively. Number of valance electrons in X is 7Find the number of valance electrons in X and Z.

84. What is the use of oxyacetylene flame?

85. What is observed on adding 5% solution of alkaline potassium permanganate solution drop by drop to some warm ethanol taken in testube.

86. Write the name of the compound formed during chemical reaction.

87. How would you distinguish experimentally between an alcohol and a carboxylic acid on the basis of a chemical property?

88. Why are vegetable oils healthy as compared to vegetable ghee ? how are vegetable oils converted into vegetable ghee name the process.

89. When acetic acid reacts with X, a salt is formed which on reaction with soda lime gives a gas Y. Identify X and Y

90. "Alkenes form a homologous series" Explain.

91. Why does Ethanoic acid called glacial acetic acid? (Imp.)

92. Why is the conversion of ethanol to ethanoic acid an oxidation reaction? (Imp.)

93. A mixture of ethyne and oxygen is burnt for welding. Can you tell why a mixture of ethyne and air is not used? (Imp.)

94. Why is the conversion of ethanol to ethanoic acid considered an oxidation reaction?

95. Who was the first to suggest the classification of chemical compounds into inorganic compounds and organic compounds?

96. Why are the compounds of carbon studied as a separate branch of chemistry?

97. Compounds like calcium carbide, carbon monoxide, carbon dioxide, calcium carbonate etc., are considered as inorganic compounds although they have carbon atoms in their molecule. Give reason.

98. Why compounds like B-B, Si-Si, and S-S do not exist in nature?

99. What is “Buckminster fullerene”? And why it is called so?

100. Name the first organic compound obtained from an inorganic source in the laboratory. Who synthesized it?

ASSIGNMENT QUESTIONS SET – 1
CHAPTER – 5
PERIODIC CLASSIFICATION OF ELEMENTS

1. The property of an element in the periodic table depends on its, _____.

i) atomic size

ii) atomic mass

iii) electronic configuration

iv) number of protons

2. An element has configuration 2, 8, 1. It belongs to, _____.

i). 1 group and 3rd period

ii). 3 group and 1st period

iii). 1 group and 8th period

iv). 17 group and 3rd period

3. The number of electrons in the valence shell is equal to its _____.

i). atomic mass

ii). group number

iii). period number

iv). atomic volume

4. The non-metallic element present in the third period other than sulphur and chlorine is

i). oxygen

ii). fluorine

iii). nitrogen

iv). phosphorus

5. At the end of each period the valence shell is _____.

i). incomplete

ii). half filled

iii). singly occupied

iv). completely filled

6. The family of elements having seven electrons in the outermost shell is _____.

i). alkali metals

ii). alkaline earth metals

iii). halogens

iv). noble gases

7. Which of the following factors does not affect the metallic character of an element?

i). Atomic size

ii). Ionisation potential

iii). Electronegativity

iv). Atomic radius

8. The family of elements to which potassium belongs is _____.

i). alkali metals

ii). alkaline earth metals

iii). halogens

iv). noble gases

9. The modern periodic table is given by _____

i). Mendeleev

ii). Einstein

iii). Bohr

iv). Mosley

10. Elements belonging to groups 1 to 17 are called _____.

i). noble gases

ii). normal elements

iii). transition elements

iv). inner transition elements

11. A liquid non-metal is _____.

i). phosphorous

ii). mercury

iii). bromine

iv). nitrogen

12. The first alkali metal is _____.

i). hydrogen

ii). lithium

iii). sodium

iv). francium

13. A purple coloured solid halogen is _____.

i). chlorine

ii). bromine

iii). iodine

iv). astatine

14. Lanthanides and actinides are also called _____.

i). normal elements

ii). transition elements

iii). noble gases

iv). inner transition elements

15. The family of elements to which calcium belongs is _____.

i). alkali metals

ii). alkaline earth metals

iii). halogens

iv). noble gases

16. The least reactive element in group 17 is _____.

i). fluorine

ii). chlorine

iii). bromine

iv). iodine

17. The valency of chlorine with respect to oxygen is _____.

i). 1

ii). 3

iii). 5

iv). 7

18. The number of shells in the elements of 3rd period is _____.

i). 1

ii). 2

iii). 3

iv). 0

19. Four elements along a period have atomic number (11, 13, 16 and 17). The most metallic among these has an atomic number of _____.

i). 11

ii). 12

iii). 16

iv). 17

20. Six elements A, B, C, D, E and F have the following atomic numbers (A = 12, B = 17, C = 18, D = 7, E = 9 and F = 11). Among these elements, the element, which belongs to the 3rd period and has the highest ionisation potential, is _____.

i). A

ii). B

iii). C

iv). F

21. A factor that affects the ionisation potential of an element is _____.

i). atomic size

ii). electron affinity

iii). electro-negativity

iv). neutrons

22. The element, which has the highest electron affinity in the 3rd period is _____.

i). Na

ii). Mg

iii). Si

iv). Cl

23. The element, which has zero electron affinity in the 3rd period is _____.

i). Al

ii). P

iii). Ar

iv). S

24. The statement that is not true about electron affinity is

i). It causes energy to be released

ii). It causes energy to be absorbed

iii). It is expressed in electron volts

iv). It involves formation of an anion

25. Down a group, the electron affinity _____.

i). increases

ii). decreases

iii). remains same

iv). increases and then decreases

26. Name an element with five electrons in the outer shell.

27. Name an element which tends to lose two electrons.

28. Name an element that would tend to gain two electrons.

29. Name the group having a non metal liquid as well as non metal gas at room temperature.

30. Name the group having element with zero valency.

31. Name the metalloid present in group 14.

32. What is the name given to group of three similar elements by Dobereiner?

33. State "Newlands law of Octaves" for classification of elements.

34. Name the fundamental property used by Mendeleev as the basis of classification.

35. How many groups and periods are there in the Modern periodic table?

36. What was the prediction of Mendeleev regarding the gaps in his periodic table?

37. How is valence of an element determined?

38. What will be the valence of an element having atomic number 16?

39. How does valence vary in going down a group?

40. Why inert gases have zero valences?

41. What would be the valence of an atom containing 8 electrons in its outermost shell?

42. How does the electronegative character of elements vary along a period of the periodic table?

43. The present classification of elements is based on which fundamental property of elements?

44. Among first ten elements in the modern periodic table name the metals present.

45. Metals are on which side of Modern periodic table?

46. State Mendeleev's periodic law.

47. Name two elements, other than Gallium, whose existence was predicted by Mendeleev.

48. State Modern Periodic law.

49. Write the name given to the vertical columns in a periodic table.

50. What name is given to the horizontal rows in a periodic table?

51. Why does silicon is classified as Metalloid?

52. State two limitations of Newland's law of Octaves.

53. Name the scientist who proposed modern periodic law? On which fundamental property of elements it is based?

54. Why could no fixed position be given to hydrogen in Mendeleev's Periodic table?

55. What are metalloids? Give two examples.

56. In group 1 of periodic table three elements X, Y and Z have atomic radii 133 pm , 95pm and 65pm respectively giving a reason, arrange them in the increasing order of their atomic number in the group.

57. In modern periodic table, the isotopes of Chlorine Cl-35 and Cl-37 having different atomic masses will be kept in different slots or they would be assigned same position on the basis of their chemical properties? Give reason in support of your answer.

58. Nitrogen (At no. 7) and Phosphorus (At no. 15) belong to group 15 of the periodic table:-

(i) Write the electronic configuration of the two.

(ii) Predict whether they are metallic or nonmetallic in nature.

59. How and why does the atomic size vary as you go down a group?

60. Why was Dobereiner system of classification of elements into triads not found to be useful?

61. State three merits of Modern periodic table.

62. What are amphoteric oxides? Choose the amphoteric oxide from among the following oxides :– Na_2O, ZnO, Al_2O_3, CO_2, H_2O

63. Study the variation in the atomic radii of first group elements given below and arrange them in increasing order :–

Group I element	Na	Li	Rb	Cs	K
Atomic Radii P.M	86	152	244	262	231

64. An element X has the electronic configuration as 2, 8, 7 :–

(a) What is the atomic number of the element?

(b) What will be the formula of its compound formed with Na?

(c) What is the name given to the family of this element?

65. How do you calculate the valence of the element from its electronic configuration? What is the valence of Mg with atomic number 12 and sulphur with atomic number 16? How does the valence vary in going down in a group?

66. Atomic radii of the elements of the period II are as follows:–

Period II elements :	Be	B	O	N	C	Li
Atomic Radius : 111	88	66	74	77	152	

(i) Arrange them in decreasing order of their atomic radii.

(ii) How does the atomic size vary on moving from left to right in a period? Explain why?

(iii) How will the tendency to lose electrons will vary on moving from left to right in this period II?

67. Oxygen (O, 8) and sulphur (S, 16) belong to group 16 of the periodic table:-

(i) Write the electronic configuration and valence of these two elements?

(ii) Which among these will be more electronegative? Why?

68. Two elements ‘A’ and ‘B’ belong to group 1 and 2 respectively in the same period. Compare them with respect to :–

(a) Number of valence electrons. (b) Valency

(c) Metallic character (d) Size of atom

(e) Formulae of their oxides.

69. What is periodicity?

70. Who showed for the first time that there is periodicity in properties of elements?

71. Are the properties of elements placed in a group same?

72. Give reason for the need of classification of elements.

73. Hydrogen can be placed in group 1 and group 7 of periodic table. Why?

74. Name two elements whose properties were correctly predicted by Mendeleev. Mention their present day name.

75. State Mendeleev's periodic law. Why did he leave gaps in his periodic table?

76. An element Z is of second group of the periodic table. Write the formula of its oxide.

77. Noble gases did not find a place in Newland's Octaves. Explain.

78. Give formula for the following:

(i) bromide of element X of second group.

(ii) oxide of element Y of third group.

(iii) chloride of element Z of fourth group.

79. How many elements are present in (i) Second period (ii) Six period

80. Name (i) A Non metal solid at room temperature (ii) A Metal liquid at room temperature

81. Arrange the following elements in the decreasing order of metallic character.

(i) Si, Be, Mg, Na, P

(ii) B, Al, Mg, K

82. How in modern periodic table position of elements in groups and periods is decided?

83. Why metallic character decreases across a period and increases down a group?

84. Among the elements of second period 'Li' to 'Ne' pick out the element.

(i) with the largest atomic radius

(ii) that is the most reactive non metal

(iii) that is the most reactive metal

(iv) which is a metalloid.

85. Elements A, B, C, D, E have following electronic configurations-

A: 2,3

B: 2,8,3

C: 2,8,5

D: 2,8,7

E: 2,8,8,2

(i) Which of these belong to same group?

(ii) Which of these belong to same period?

ASSIGNMENT QUESTIONS SET – 2
CHAPTER – 5
PERIODIC CLASSIFICATION OF ELEMENTS

1. Upto which element, the Law of Octaves was found to be applicable

(a) Oxygen

(b) Calcium

(c) Cobalt

(d) Potassium

2. According to Mendeleev's Periodic Law, the elements were arranged in the periodic table in the order of

(a) increasing atomic number

(b) decreasing atomic number

(c) increasing atomic masses

(d) decreasing atomic masses

3. In Mendeleev ’s Periodic Table, gaps were left for the elements to be discovered later. Which of the following elements found a place in the perioidc table later

(a) Germanium

(b) Chlorine

(c) Oxygen

(d) Silicon

4. Which of the following statement (s) about the Modern Periodic Table are incorrect

(i) The elements in the Modern Periodic Table are arranged on the basis of their decreasing atomic number

(ii) The elements in the Modern Periodic Table are arranged on the basis of their increasing atomic masses

(iii) Isotopes are placed in adjoining group (s) in the Periodic Table

(iv) The elements in the Modern Periodic Table are arranged on the basis of their increasing atomic number

(a) (i) only (b) (i), (ii) and (iii)

(c) (i), (ii) and (iv) (d) (iv) only

5. Which of the following statements about the Modern Periodic Table is correct:

(a) It has 18 horizontal rows known as Periods

(b) It has 7 vertical columns known as Periods

(c) It has 18 vertical columns known as Groups

(d) It has 7 horizontal rows known as Groups

6. Which of the given elements A, B, C, D and E with atomic number 2, 3, 7, 10 and 30 respectively belong to the same period?

(a) A, B, C

(b) B, C, D

(c) A, D, E

(d) B, D, E

7. The elements A, B, C, D and E have atomic number 9, 11, 17, 12 and 13 respectively. Which pair of elements belong to the same group?

(a) A and B

(b) B and D

(c) A and C

(d) D and E

8. Where would you locate the element with electronic configuration 2,8 in the Modern Periodic Table?

(a) Group 8

(b) Group 2

(c) Group 18

(d) Group 10

9. An element which is an essential constituent of all organic compounds belongs to

(a) group 1

(b) group 14

(c) group 15

(d) group 16

10. Which of the following is the outermost shell for elements of period 2?

(a) K shell

(b) L shell

(c) M shell

(d) N shell

11. Which one of the following elements exhibit maximum number of valence electrons?

(a) Na (b) Al

(c) Si (d) P

12. Which of the following gives the correct increasing order of the atomic radii of O, F and N ?

(a) O, F, N (b) N, F, O

(c) O, N, F (d) F, O, N

13. Which among the following elements has the largest atomic radii?

(a) Na

(b) Mg

(c) K

(d) Ca

14. Which of the following elements would lose an electron easily?

(a) Mg

(b) Na

(c) K

(d) Ca

15. Which of the following elements does not lose an electron easily?

(a) Na (b) F

(c) Mg (d) Al

16. Which of the following are the characteristics of isotopes of an element?

(i) Isotopes of an element have same atomic masses

(ii) Isotopes of an element have same atomic number

(iii) Isotopes of an element show same physical properties

(iv) Isotopes of an element show same chemical properties

(a) (i), (iii) and (iv) (b) (ii), (iii) and (iv)

(c) (ii) and (iii) (d) (ii) and (iv)

17. Arrange the following elements in the order of their decreasing metallic character

Na, Si, Cl, Mg, Al

(a) Cl > Si >Al > Mg >Na

(b) Na >Mg >Al >Si > Cl

(c) Na > Al > Mg > Cl > Si

(d) Al > Na> Si > Ca> Mg

18. Arrange the following elements in the order of their increasing nonmetallic character

Li, O, C, Be, F

(a) F < O < C < Be < Li

(b) Li < Be < C < O< F

(c) F < O < C < Be < Li

(d) F < O < Be < C < Li

19. What type of oxide would Eka– aluminium form?

(a) EO_3 (b) E_3O_2

(c) E_2O_3 (d) EO

20. Three elements B, Si and Ge are

(a) metals (b) non-metals

(c) metalloids (d) metal, non-metal and metalloid respectively

21. Which of the following elements will form an acidic oxide?

(a) An element with atomic number 7

(b) An element with atomic number 3

(c) An element with atomic number 12

(d) An element with atomic number 19

22. The element with atomic number 14 is hard and forms acidic oxide and a covalent halide. To which of the following categories does the element belong?

(a) Metal (b) Metalloid

(c) Non-metal (d) Left-hand side element

23. Which one of the following does not increase while moving down the group of the periodic table?

(a) Atomic radius

(b) Metallic character

(c) Valence

(d) Number of shells in an element

24. On moving from left to right in a period in the periodic table, the size of the atom.

(a) increases (b) decreases

(c) does not change appreciably (d) first decreases and then increases

25. Which of the following set of elements is written in order of their increasing metallic character?

(a) Be Mg Ca

(b) Na Li K

(c) Mg Al Si

(d) C O N

26. The three elements A, B and C with similar properties have atomic masses X, Y and Z respectively. The mass of Y is approximately equal to the average mass of X and Z. What is such an arrangement of elements called as? Give one example of such a set of elements.

27. Elements have been arranged in the following sequence on the basis of their increasing atomic masses.

F, Na, Mg, Al, Si, P, S, Cl, Ar, K

(a) Pick two sets of elements which have similar properties.

(b) The given sequence represents which law of classification of elements?

28. Can the following groups of elements be classified as Dobereiner's triad ?

(a) Na, Si, Cl (b) Be, Mg, Ca

Atomic mass of Be 9; Na 23; Mg 24; Si 28; Cl 35; Ca 40

Explain by giving reason.

29. In Mendeleev ’s Periodic Table the elements were arranged in the increasing order of their atomic masses. However, cobalt with atomic mass of 58.93 amu was placed before nickel having an atomic mass of 58.71 amu. Give reason for the same.

30. “Hydrogen occupies a unique position in Modern Periodic Table”. Justify the statement.

31. Write the formulae of chlorides of Eka-silicon and Eka-aluminium, the elements predicted by Mendeleev.

32. Three elements A, B and C have 3, 4 and 2 electrons respectively in their outermost shell. Give the group number to which they belong in the Modern Periodic Table. Also, give their valencies.

33. If an element X is placed in group 14, what will be the formula and the nature of bonding of its chloride?

34. Compare the radii of two species X and Y. Give reasons for your answer.

(a) X has 12 protons and 12 electrons

(b) Y has 12 protons and 10 electrons

35. Arrange the following elements in increasing order of their atomic radii.

(a) Li, Be, F, N (b) Cl, At, Br I

36. Identify and name the metals out of the following elements whose electronic configurations are given below.

(a) 2, 8, 2 (b) 2, 8, 1

(c) 2, 8, 7 (d) 2, 1

37. Write the formula of the product formed when the element A (atomic number 19) combines with the element B (atomic number 17). Draw its electronic dot structure. What is the nature of the bond formed?

38. Arrange the following elements in the increasing order of their metallic character

Mg, Ca, K, Ge, Ga

39. Identify the elements with the following property and arrange them in increasing order of their reactivity

(a) An element which is a soft and reactive metal

(b) The metal which is an important constituent of limestone

(c) The metal which exists in liquid state at room temperature

40. Properties of the elements are given below. Where would you locate the following elements in the periodic table?

(a) A soft metal stored under kerosene

(b) An element with variable (more than one) valency stored under water.

(c) An element which is tetravalent and forms the basis of organic chemistry

(d) An element which is an inert gas with atomic number 2

(e) An element whose thin oxide layer is used to make other elements corrosion resistant by the process of " anodising"

41. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.

(a) Identify the element

(b) Write the electronic configuration

(c) Write the balanced equation when it burns in the presence of air

(d) Write a balanced equation when this oxide is dissolved in water

(e) Draw the electron dot structure for the formation of this oxide

42. An element X (atomic number 17) reacts with an element Y (atomic number 20) to form a divalent halide.

(a) Where in the periodic table are elements X and Y placed?

(b) Classify X and Y as metal (s), non-metal (s) or metalloid (s)

(c) What will be the nature of oxide of element Y? Identify the nature of bonding in the compound formed

(d) Draw the electron dot structure of the divalent halide

43. Atomic number of a few elements are given below 10, 20, 7, 14

(a) Identify the elements

(b) Identify the Group number of these elements in the Periodic Table

(c) Identify the Periods of these elements in the Periodic Table

(d) What would be the electronic configuration for each of these elements?

(e) Determine the valency of these elements

44. In which form matter is present around us?

45. At present, how many elements are known to us?

46. The earliest attempt in classifying elements resulted in the formation of two groups of elements. What are they?

47. Who made the first attempt of classifying elements?

48. On what basis Dobereiner classified elements?

49. Dobereiner classified elements into how many groups?

50. What name was given to Dobereiner groups?

51. What is the total number of elements in Dobereiner groups?

52. How did John Newlands classify elements?

53. Name the first element of Newland's octaves.

54. Name the last element of Newland's octaves.

55. What is your observation from Newland's octaves?

56. What is Newland's Law of octaves?

57. Besides atomic masses, on what other basis were the elements arranged in the Mendleev's periodic table?

58. Which chemical property of an element was treated as one of the basic property for classifying elements and why?

59. What name is given to vertical columns in Mendleev's periodic table?

60. What name is given to horizontal rows in Mendleev's periodic table?

61. While developing the Periodic table, at few places Mendleev inverted the sequence of some elements i.e. he placed an element with slightly greater atomic mass before the element of lower atomic mass. Why did he do so?

62. Though the atomic mass of cobalt (58.9) is greater than nickel (58.7) yet Co is placed before Ni in Mendleev's periodic table. Why?

63. Which elements did not exist at the time of Mendleev's periodic classification? What name was given to these elements?

64. In what way hydrogen resembles alkali metals?

65. In what way hydrogen resembles halogens?

66. Why hydrogen cannot be given a fixed position in periodic table?

67. What is the first limitation of Mendleev's periodic table?

68. How isotopes of all the elements posed a challenge to Mendleev's periodic table?

69. Who proposed that atomic number is the more fundamental property for classifying elements?

70. In Modern periodic table, How do elements belonging to the same group resemble each other? Write two points.

71. Different elements have same number of shells, in group or in period?

72. First period of the Modern periodic table contains only two elements. Justify.

73. How many elements are present in second group of the periodic table? Justify.

74. "The valence electrons determine the kind and number of bonds formed by an element". Justify.

75. An element belongs to the first group and third period of the periodic table. What conclusion can you draw from its position ?

76. A metal M forms an oxide having the formula M2O3. It belongs to the third period and thirteenth group of the Modern periodic table. Write the atomic number and valency of the element.

77. What were the two major shortcomings of Mendleev's periodic table? How have these been removed in the modern periodic table?

78. Two elements X and Y have atomic numbers 12 and 16 respectively. Write the electronic configuration for these elements. To which period of the modern periodic table do these two elements belong? What type of bond will be formed between them and Why?

79. What were the two achievements of Mendleev's periodic table? What was the basis of classification of elements in it?

80. Atomic radius decreases in moving from left to right in a period. Why?

81. Atomic radius increases down the group. Why?

82. In the modern periodic table a zig-zag line separates metals from non-metals. What are these elements called and why?

83. X, Y and Z are the elements of a doberniers triad. If the atomic mass of X is 7and that of z is 39, what should be the atomic mass of Y?

84. A and B are the two elements having similar properties which obey Newlands law of octaves. How many elements are there in between A and B?

85. Why Na is greater in atomic size than Na+ ?

86. Why does ionization energy generally decrease going down a group or family?

87. An element X (2,8,2) combines separately with NO_3^- and $(SO_4)^{2-}$, $(PO_4)^{3-}$ radicals. Write the formulae of the three compounds so formed. To which group of the periodic table does the element 'X' belong? Will it form covalent or ionic compound? Why?

88. A metal M forms an oxide having the formula M_2O_3. It belongs to 3rd period in the modern periodic table. Write the atomic number and valency of the metal.

89. Which of the two elements A=2,8,1 B = 2,8,8,1 i s more electropositive?

90. How does the atomic size vary in going from A) Left to right in a period B) Top to Bottom in a group

91. An element has atomic number 13. In which group and period it should be placed?

92. How many periods and groups are there in the long from of P.T?

93. Why does the size of the atoms progressively become smaller when we move from sodium (Na) to chlorine (Cl) in the third period of the period table ?

94. Give symbols for A. A metal of group 2. B. A metal of group 13. C. Two non metals of group 16. D. Most reactive non- metal of group 17.

95. Explain Why-

(a) All the elements of a group have similar chemical properties.

(b) All the elements in a period have different chemical properties.

96. The atomic number of an element X is 17. Predict –

A. Its valency.

B. Nature of the elements.

C. Whether it is metal or non – metal.

D. Name of the element.

E. Relative size with respect to other members of its group.

97. The three elements predicted by mendeleev from the gaps in his periodic table were known as eka- boron, eka- aluminum, eka- silicon. What names were given to these elements when they were discovered later on?

98. The atomic numbers of Nitrogen, Oxygen and fluorine are 7, 8, and 9 respectively. Write the electronic configuration of each element and answer the following:

(a) Out of N, O and F which is most electronegative and which one is least electronegative?

(b) What is the number of valence electrons of F?

(c) What is the valency of each of N, O and F?