EQUIP - DIET KASARAGOD

SSLC QUESTION POOL

CHEMISTRY - ENGLISH MEDIUM

1 Mark Questions

1. The Subshell present in all shells is

   (s, p, d, f)

2. What is the total number of electron present in 'P' subshells of $_{13}Al$?

3. Metal which reacts with cold water is .....

   (Na, Fe, Ag, Zn)

4. $C_3H_6 + Cl_2 \rightarrow$ .....

   ($C_3H_6Cl_2$, C_3H_8, $C_3H_7Cl_2$, $C_3H_8Cl_2$)

5. Write the IUPAC name of $CH \equiv CH$.

6. Write the functional group of alcohols.

7. Find out the volume of 1 mole of N_2 at STP?

8. Which block elements are used as fuels in nuclear reactors?

9. Whether iron bangle is used as cathode or anode while electroplating it with copper?

10. The Maximum number of electrons that can be accomodated in 'd' subshell is .....

    (14, 6, 2, 10)

11. Which substance is used to remove moisture from NH_3?

12. Which is the Anode in Zn - Ag cell?

13. Which is the Monomer of natural rubber?

14. Which is the concentration method used for concentrating Bauxite?

15. Name the functional group present in $CH_3 - O - CH_3$?

16. 5 - 8% Ethanoic acid is known as .....

17. Which property of Sulphuric acid is used in the preparation of SO_2 and HCl?

18. What is the Oxidation state of Mn in MnO_2?

    (Hint. Oxidation state of Oxygen is $^{-}2$)

19. Which one of the following subshells is not possible in an atom?

    (1s, 2p, 4d, 3f)

20. Identify the law in which the relationship between volume and number of molecules of a gas at constant temperature and pressure?

    (Boyle's law, Charle's law, Avagadro's law)

21. Tin stone (SnO_2) is the ore of tin. Which is the magnetic impurity present in tin stone?

22. Which of the following metal does not displace hydrogen from dilute acids?

    (Sodium, Iron, Copper, Magnesium)

23. Name the non-metallic compound used as a refrigerant in ice plants.

24. PVC is a polymer commonly used for making pipes. What is the name of its Monomer?

25. Elements used as catalysts in the refining of petroleum belongs to which block?

26. Name the process of the industrial prepation of Aluminium ?

27. Based on which process refining of metals like Copper and Gold is done?

28 3s, 4s subshells are given.Which subshell has more energy?

29. Which gas law shows the relation between volume and pressure at constant temperature?

30. What is the general formula of Alkenes?

31. 6.022×10^{23} is known as .....

32. Name the industrial preparation of Sulphuric acid?

33. What is the energy change in Galvanic Cell?

34. What is the volume of one mole of any gas at STP known as?

35. What is the number of moles present in 44.8L of any gas at STP?

36. The electrode at which reduction takes place in an electrolytic cell is .....

37. The maximum number of electrons occupied by 'P' subshell is .....

(14, 6, 10, 2)

38. Which is the mathematical expression of Boyl's law from the given expressions.

(PV = constant, $\frac{V}{T}$ = constant, $\frac{V}{n}$ = constant)

39. From the given elements, which one is less reactive?

(Na, Zn, Ag)

40. Calamine is the ore of .....

41. The density of ammonia is ..... compared to that air.

(Low / High)

42. Name the polymer used to line the inside of non-stick vessels.

43. In which block lanthanoid and actinoids belong?

44. Name the substance obtained by mixing methanol and ethanol to prevent from mis use as beverage?

45. Which solution is used as electrolite for plating gold on an iron bangle?

46. Name the industrial preparation of NH_3?

47. Write the subshell electronic configuration of O^{2-} ion?

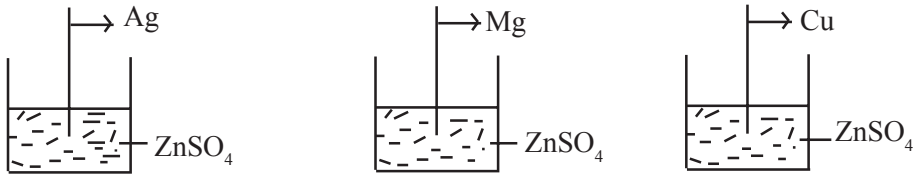
2 Mark Questions

48. The industrial preparation of H_2SO_4 is called Contact process.

a) Which substance is used as a catalyst here?

b) Name the compound formed after the dissolution of SO_3 in H_2SO_4. What is its molecular formula?

49. Some metals and $ZnSO_4$ solution is given.



(i) (ii) (iii)

a) In which beaker chemical reaction takes place? Why?

b) Write the chemical equation for the reaction?

50. $N_2 + 3H_2 \rightleftharpoons 2NH_3 + \text{heat}$

Chemical equation for the preparation of Ammonia in Habour process is given above. To get more Ammonia in this equilibrium,

a) What changes are to be done in the concentration of N_2 and NH_3?

b) At what temperature the yield will be more? Why?

51. Some Sugar is taken in a watch glass and concentrated Sulphuric acid is added to it.

a) What changes occur?

b) Which property of Sulphuric acid is shown here?

52. Molecular mass of water is 18.

a) Find the number of moles in 180g water?

b) Find out the number of molecules present in it?

53. $N_2 + 3H_2 \rightleftharpoons 2NH_3 + \text{heat}$

Write any two methods to increase the rate of forward reaction.

54. Alcohols are Hydrocarbons with - OH as functional group.

a) Name the alcohol used in Beverages.

b) Write the chemical equation for the industrial preparation of methanol.

55. Haematite (Fe_2O_3), Magnetite (Fe_3O_4) and Copper Pyrites ($CuFeS_2$) are some ores of metals.

a) Which ore is concentrated by froath floation process?

b) Which ore is concentrated by Magnetic separation?

56. A glass rod dipped in concentrated hydrochloric acid is shown inside a jar which is filled with ammonia gas.

a) Write down your observation

b) $NH_3 + HCl \rightarrow$ .....

57. a) Which compound is added to Alumina during the electrolytical preparation of Aluminium?

b) Explain why it is done?

58. Write answers for the given questions related to Zn - Cu Galvanic cell.

a) Which Metal is acting as anode

b) Write the Chemical equation for the reaction at anode?

59. A little Ammonium Chloride (NH_4Cl), and Calcium hydroxide ($Ca(OH)_2$) are taken in a watch glass and mixed well.

a) Which gas is formed here?

b) Write its chemical nature? (Acidic / Basic)

60. a) Name the substance formed by the reaction of a carboxylic acid with alcohol?

b) Write any one pecularity in their property?

61. Size of a balloon is increased on blowing.

a) On the basis of which gas low it can be explained?

b) State the law?

62. See the electronic configuration of an atom with atomic number 12 written by children.

A - $1s^2\ 2s^2\ 2p^6\ 3s^2$

B - $1s^2\ 2s^2\ 2p^6\ 2d^2$

Which one is correct? Why?

3 Mark Questions

63. The given table is based on a gas law.

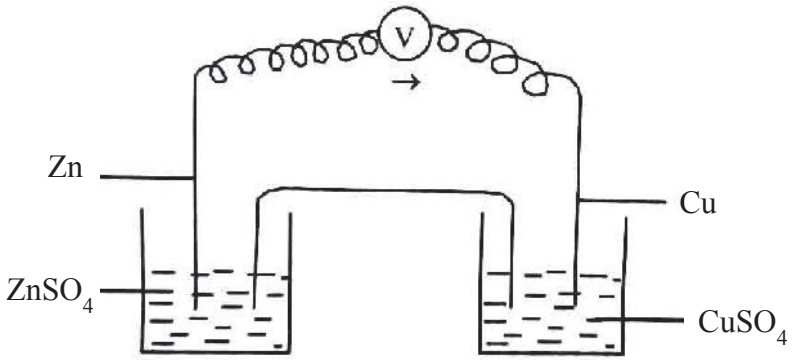
P	V	PV
100	20	2000
50	40	2000
20	100	2000

a) Identify the gas law?

b) Write the Mathematical expression of this law?

c) Which law relates volume and temperature of gases?

64.



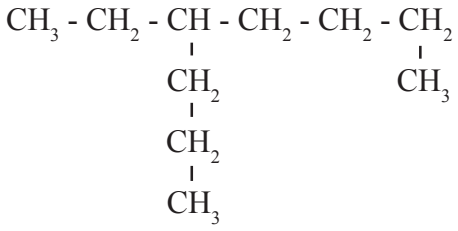
A galvanic cell made of Cu and Zn is given above.

a) Identify the cathode and anode in the above cell?

b) Write the chemical equation for the reaction taking place at cathode?

c) Show the direction of flow of electrones?

65. The structure of an organic compound is given.



a) How many carbon atos are present in the main chain of this compound?

b) Give the number of carbon at which the branch is seen?

c) Write the IUPAC name of this compound?

66. The element cromium with atomic number 24 is a d-block element. If so,

a) Write the complete subshell electronic configuration of this element?

b) Why does this atom show this type of difference in the electronic configuration?

c) In which group and period this element belongs?

67. During the electrolysis of solution of NaCl,

a) Name the products obtained at cathode and anode?

b) Write the equation for the reaction at anode?

c) Which compound can be prepared using this process?

68. a) Find the Oxidation state of Fe in $FeCl_3$ and write the subshell electronic configuration of Fe^{3+} ion .

(Hint : Fe = 26)

b) Find out the group and period of Fe?

69. $CH_3 - CH_2 - \underset{\displaystyle CH_3 - CH - CH_3}{\underset{|}{CH}} - CH_3$

a) Write the number of Carbon atoms in the main chain?

b) Name the branch?

c) Write the IUPAC name of the compound?

70. The extraction of iron from its ore is done in a blast furnace?

a) Which is the ore used here?

b) Which are the substance fed into the blast furnace?

c) Identify the gangue and flux here?

71. Complete the table related to a gas law.

Temperature (T)	Volume (V)
300K	900L
(a) ____K	600L
450K	(b) ____L

a) Write the values (a) and (b)?

b) Identify the gas law?

72. The following are the chemical equation representing the industrial preparation of Ethanol.

A) $C_{12}H_{22}O_{11} + H_2O \xrightarrow{(A)} C_6H_{12}O_6 + C_6H_{12}O_6$

Glucose Fructose

B) $C_6H_{12}O_6 \xrightarrow{(B)} C_2H_5OH + 2CO_2$

Ethanol

a) Identify the enzymes A and B? (1)

b) What is rectified spirit? (1)

c) What is power alcohol? (1)

73. The electronic configuration of the elements A, B, C, D are given below.

A - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$

B - $1s^2\ 2s^2\ 2p^6\ 3s^2$

C - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^5$

D - $1s^2\ 2s^2\ 2p^6\ 3s^1$

a) Which of these elements show +2 oxidation state?

b) Which element belongs to 17^{th} group?

c) Which is the period number of the element A? What is the basis of your findings?

(Symbols are not real)

74. Complete the table

Substance	GMM	Given Mass	No.of Moles	Number of Molecules
Oxygen O_2 (Molecular Mass = 32)	32g	64g	....(a)....	....(b)....
Ammonia (NH_3) (Molecular Mass = 17)	....(c)....	....(d)...	3	$3x6.022x10^{23}$
Water (H_2O) (Molecular Mass = 18)	18g	72g	....(e)....	....(f)...

75. The features of an organic compound are given.

* It's an alkane
* There are 6 Carbon atoms in the longest chain.
* There are Methyl radicals (1 each) on the 3rd & 4th carbon.

a) Write the structural formula of the compound? (2)

b) Write the IUPAC name of the compound? (1)

76. 5ml $AgNO_3$ is taken in a test tube and a Copper rod is dipped in it.

a) Observe the change occuring with the copper rod? (1)

b) Complete the equation of the reaction? (2)

$Cu + 2\ AgNO_3 \rightarrow$ ..... + ...

77. Some reactions regarding the production of an alcohol are given below.

$$C_{12}H_{22}O_{11} + H_2O \xrightarrow{\text{Invertase}} C_6H_{12}O_6 + ...(A).....$$

$$.....(A)..... \xrightarrow{\text{Zymase}} .....(B)..... + 2CO_2$$

a) Identify A and B? (1)

b) Write the name of the ester formed when the product B reacts with ethanoic acid? (1)

c) Write the Chemical equation for the formation of that ester. (1)

78. The Atomic number of element M is 17.

a) Write the complete sub shell electronic configuration of M?

b) In which block the element belongs to?

c) Write the molecular formula of the compound formed when it combines with N, which belongs to 1st group? (Symbols are not real)

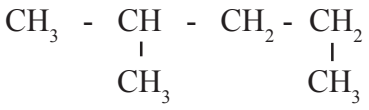
79. Answer the following questions related to the large scale preparation of Iron (Fe)

a) Name the ore used in the Extraction of Iron?

b) Why is limestone added during this process?

c) Write the chemical formula of the slag removed from blast furnace?

80.



Answer the following questions based on the hydrocarbon given above.

a) Write the number of Carbon atoms present in the longest chain?

b) Name branch in this compound?

c) Write the IUPAC name of this compound?

81. Combination of smaller molecules to form a very large chain like molecule is called Polymerisation.

a) What are the smaller molecules taking part in this reactions called?

b) Which is the monomer unit of Polythene?

c) Give any one use of Polythene?

82. Chemical equations for the Industrial preparation of Sulphuric acid is given

$$S + O_2 \rightarrow SO_2$$

$$2SO_2 + O_2 \xrightleftharpoons{V_2O_5} 2SO_3$$

$$SO_3 + H_2SO_4 \rightarrow H_2S_2O_7$$

a) Name the compound $H_2S_2O_7$ formed during this process?

b) In which other name this acid known as?

c) Name the products formed during the dehydration reaction of Sulphuric acid with Sugar?

83. 85g of ammonia gas is stored at STP.

a) Calculated the number of molecules present in it?

b) Find out its volume

c) Find out the number of atoms present in this sample?
(Molecular mass of ammonia is 17)

84. Some metals and salt solutions are given.

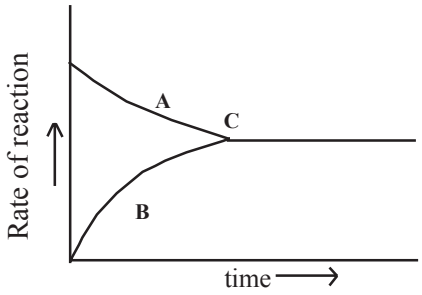
$MgSO_4$ solution, $CuSO_4$ solution, $AgNO_3$ solution
KNO_3 solution, Pb rod Cu rod, Mg rod, Pb rod)

a) Select the substance required for the construction of galvanic cell?

b) Which metal is anode in the cell constructed?

c) Write the chemical equation for the reaction taking place at cathode?

85. Observe the graph of chemical reaction and answer the following questions.



a) What do 'A' and 'B' represent?

b) What do 'C' represent?

c) What happen to the rate of forward and backward reaction at 'C'?

86. Chemical formula of some hydrocarbon chain are given.

C_4H_8, C_2H_6, C_3H_4, CH_4, C_5H_{10}, C_6H_{10}

a) Which are alkenes?

b) Write the general molecular formula of alkane?

c) Write the molecular formula of an alkyne with 5 carbon atoms from these?

87. During the electrolysis of NaCl,

a) Which substance is liberatd at anode?

b) Which is liberated at cathode?

c) Write the chemical equation for the reaction taking place at anode?

4 Mark Questions

88. Find out the isomer pairs from the given compounds and state which type of isomerism is shown?

i) $CH_3 - CH_2 - CH_2 - OH$

ii) $CH_3 - CH_2 - CH_2 - CH_3$

iii) $CH_3 - \underset{\displaystyle Cl}{\underset{|}{CH}} - CH_3$

iv) $CH_3 - CH_2 - CH_2 - Cl$

v) $CH_3 - O - CH_2 - CH_3$

vi) $CH_3 - CH_2 - \underset{\displaystyle CH_3}{\underset{|}{CH_2}}$

89. Complete the given table.

Nature of ore	Method of concentration	Example
Ore is denser than impurity	...(a)....	Ore of Iron, gold
....(b)....	Magnetic separation	Tin stone
....(c)....	Froth floatation	Sulphide
Soluble Impurities	Leaching	.....(d)....

90. a) Write the complete subshell electronic configuration of $_{25}Mn$.

b) Find the oxidation state of Mn in MnO_2?

c) Write the complete subshell electronic configuration of Mn^{2+} ion?

d) Write any one property of d-block elements?

91. Some terms related to the industrial preparation of ethanol is given.

a) Wash

b) Rectified spirit

c) Absolute alcohol

d) Power alcohol

Define the above terms.

92. A few drops of con.H_2SO_4 is dropped into sugar taken in a watch glass.

a) What is your observation?

b) Which property of H_2SO_4 is shown here?

c) Why isn't H_2SO_4 used as a drying agent in the laboratory preparation of NH_3?

d) Name the acidic substance obtain by the reaction of this acid with NaCl?

93. a) Find out the Isomeric pair from those given below. (2)

i) $CH_3 - CH_2 - CH_2 - CH_3$

ii) $CH_3 - O - CH_2 - CH_3$

iii) $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_3$

iv) $CH_3 - CH_2 - CH_2 - OH$

b) Mention the type of Isomerism in each pair? (2)

94. Sub shell electronic configuration of an element is given below.

$1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^4$

a) Write the atomic number of this element?

b) How many shells are present in this atom?

c) Which is the outermost shell?

d) Find the block and group in which this element belongs?

95. $AgNO_3$ solution, $MgSO_4$ solution, Ag rod, Mg ribbon are given.

a) Draw and label the figure of a Galvenic cell using these? (2)

b) Write the Chemical equation of the reactions at Anode and Cathode? (2)

96. During the electrolysis of NaCl solution.

a) Name the products formed at Anode and Cathode? (2)

b) Write the Chemical equation occurs at Anode? (1)

c) Which is the product remains in the solution. (1)

97. Select the pecularities of 'f' block elements from the given statements.

a) They are transition elements.

b) Electrons are added to the anti penultimate shells.

c) Most of them are arificial elements.

d) Electrons are added to the penultimate shells.

e) They include both actinoids and lanthanoids.

f) They form coloured compounds.

g) Used in Petroleum industry.

98. A portion of the periodic table is given below. The symbols given are not real.

A	B
C	D 2, 8, 7

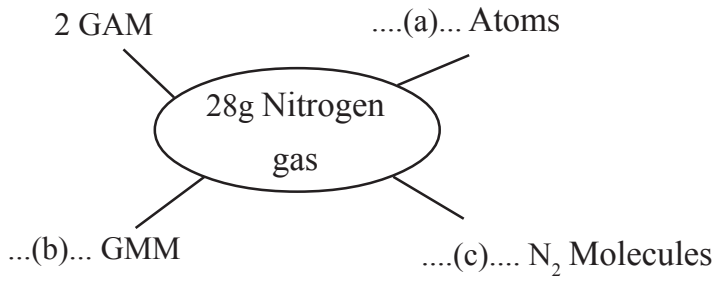
a) Write the electronic configuration of B and C? (1)

b) Find the atomic number of A and C? (1)

c) Which elements have the same valency? What is their valency? (1)

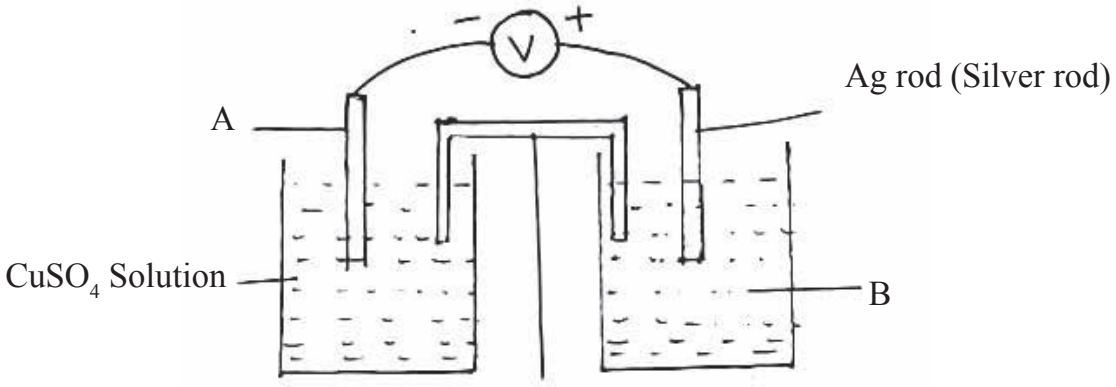
d) The valency of the element X is 1. Write the chemical formulae of the compound formed when the element X combines with A.

99. i) Complete the word web. (Atomic mass of Nitrogen is 14)



(ii) Write down the Avagadro number.

100. The picture of a Galvanic cell is given below.



a) Identify A and B?

b) Give the direction of electron flow?

c) Write the chemical equation at the anode and cathod?

101. Iron is industrially prepared mainly from Haematite.

a) Which substance reduces haematite in the metallurgy of iron?
How is this reducing agent produced in furnace? (2)

b) Which is the main impurity found in haematite?
Which substance is used to remove this gangue? (2)

102. a) Analyse the given organic compounds and answer the following questions.

(i) $CH_3 - O - CH_2 - CH_3$

(ii) $CH_3 - O - CH_3$

(iii) $CH_3 - CH_2 - CH_2 - OH$

(iv) $CH - \underset{\displaystyle OH}{\underset{|}{CH}} - CH_3$

a) Identify the isomer pairs. Write the type of isomerism observed in them?

b) Write the IUPAC name of the compound (i)?

103. 88g CO_2 given in a sample

(Atomic mass C-12, O-16)

a) What is the number of moles of CO_2 present in it?

b) What is the total number of atoms present in this sample?

c) Find out the numbers of molecules present in it?

d) What is the volume of this gas at STP?

104. Copper plays a very important role in our daily life.

a) Name one ore of Copper?

b) By which process Copper is refined?

c) Name the electrolyte used in this process?

d) Write the Chemical equation for the reaction taking place at Cathode?

105. Match the coloums B and C with coloumn A.

A	B	C
$H_2 + I_2 \rightleftharpoons 2HI$	Irreversible Reaction	Products get converted into reactants.
$NaOH + HCl \longrightarrow NaCl + H_2O$	Reversible Reaction	Products are not get converted into reactants.

106. Write the answers based on the electro plating of Iron bangle with gold.

a) Which is the electrolyte used here?

b) Identify the Cathode and Anode?

c) What happens to the gold ions reached on the bangle?
(Oxidation / reduction)

d) What happens to the gold plate?
(Oxidation / reduction)

107. Ethanol is a very important Solvent in Industry.

a) Name 8-10% solution of ethanol?

b) What is denatured spirit?

c) Write any two uses of ethanol?

d) Name the enzymes present in yeast during the process of Fermentation?

108. $CH_3 - CH_2 - \underset{\displaystyle CH_2 - CH_3}{\underset{|}{CH}} - CH_2 - CH_2 - CH_3$

a) Write the root name of the main chain?

b) Write the position of branch?

c) What is the name of the branch?

d) Write the IUPAC name of the compound?

109. Chemical reaction of certain hydrocarbon are given.

a) $2C_4H_{10} + 13O_2 \rightarrow 8CO_2 + 10H_2O$

b) $CH_3 - CH_2 - CH_2 + Cl_2 \rightarrow CH_3 - CH_2 - CH_2Cl + HCl$

c) $CH_3 - CH_2 - CH = CH_2 + H_2 \rightarrow CH_3 - CH_2 - CH_2 - CH_3$

d) $nCH_2 = \underset{\displaystyle Cl}{\underset{|}{CH}} \rightarrow \left[CH_2 - \underset{\displaystyle Cl}{\underset{|}{CH}} \right]_n$

1) Which represents displacement reaction?

2) Which shows combustion?

3) Which shows polymerisation?

4) Draw the structure of teflon?

110. Complete the table given below.

Element	Atomic number	Subshell electronic configuration	block	group	period
Na	11	$1s^2 2s^2 2p^6 3s^1$	s	1	3
Cl	17	$1s^2 2s^2 2p^6 3s^2 3p^5$	p	..(a)..	3
Mn	25	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$	..(b)..	7	4
Zn	30	$1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2$	d	...(c)...	...(d)...

111. Structure of some hydrocarbons are given.

1) $CH_3 - CH_2 - O - CH_3$

2) $CH_3 - CH_2 - CH_2 - OH$

3) $CH_3 - CH_2 - CH_2 - CH_3$

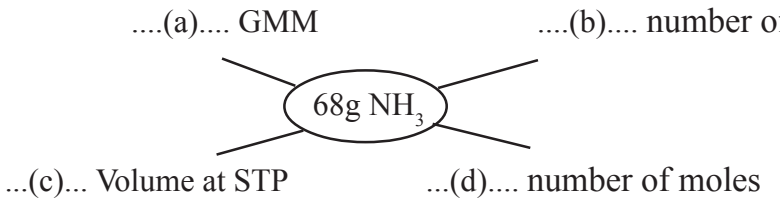
a) Write the position isomer of second compound?

b) Find out the functional isomer from them?

c) Write the chain isomer of compound (iii)?

d) Write the IUPAC name of first compound?

112. Find out a, b, c and d.



113. Some chemical equations based on the industrial preparation of iron is given.

i) $CO_2 + C \rightarrow 2\,CO$

ii) $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

iii) $CaCO_3 \rightarrow CaO + CO_2$

iv) $CaO + SiO_2 \rightarrow CaSiO_3$

a) Which substance is acting as reducing agent during this process?

b) Write the chemical equation for the formation of slag?

c) Which reaction shows the reduction of iron ore?

d) Name the substances used in blast furnace?

e) Name the iron obtained from blast furnace?

114. Match the following

Reaction	**Type of reaction**
$CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$	Addition
$C_4H_{10} \rightarrow CH_4 + C_3H_6$	Combustion
$CH_4+2O_2 \rightarrow CO_2 + 2H_2O$	Polymarisation
$nCH_2 = CH_2 \rightarrow \ddagger CH_2\text{-}CH_2 \ddagger_n$	Displacement
$CH \equiv CH+H_2 \rightarrow CH_2 = CH_2$	Thermal decomposition

115. CH_3 - COO - CH_2 - CH_3 is an ester.

a) Name the ester?

b) Which is acid and alcohol used to prepare this?

c) What is this type of reaction known as?

d) What the chemical equation for the reaction?

116. Write the answers of a, b, c, d and e of the following table. (5)

Substance	GMM	Given Mass	No.of. Moles	No.of Molecules
NO_2	....(a).....	138g	3	.....(b)....
CO	28g	14g	.....(c).....	½x6.022x10^{23}
HNO3	63g	.....(d).....	2	.....(e).....

117.a) Match the following (4)

Reactants	Products	Name of the reactions
(i) CH_4+Cl_2	$\neg[CH_2 - CH_2]\neg_n$	Thermal cracking
(ii) $C_2H_6 + O_2$	$CH_3Cl + HCl$	Polymerisation
(iii) $nCH_2=CH_2$	$CH_3-CH_2-CH_2-CH_3$ + $CH_3-CH = CH_2$	Combustion
(iv) $CH_3-CH_2-CH_2-CH_2-CH_2-CH_2-CH_3$	$CO_2 + H_2O$	Substitution reaction

b) Which is the main component in LPG? (1)

118. The main chain of an alkane without branch is given.

C - C - C - C

a) Complete the structural formulae.

b) Write the IUPAC name of this compound?

c) -COOH is added as functional group to the first carbon?

If so,

i) Write the structural formulae of the compound?

ii) Write the IUPAC name of that compound?

d) What is the name of the compounds having -COOH as functional group?

119. The Subshell electronic configuration of $_{29}Cu$ is given.

i) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^9, 4s^2$

ii) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^1$

a) Which is the correct subshell electronic configuration?

b) Justify your answer?

c) In which block the element belongs to?

d) Write any one property of elements of this block?

e) Write the group and period of this element?

120.. C_2H_4, C_3H_6, C_4H_8, ... are members of a homologous series.

a) Name this homologes series?

b) Write the Chemical formula of the next member?

c) What is the general formula of these compounds?

d) Write the structure of C_2H_4?

e) Write the structural formula and IUPAC name of the compound formed when C_2H_4 reacts with H_2.

121. Chemical reaction in a blast furnace during the preparation of iron is given,

i) $C + O_2 \rightarrow CO_2 + heat$

ii) $CO_2 + C + heat \rightarrow CO$

iii) $Fe2O_3 + 3CO \rightarrow 2Fe + 3CO_2$

iv) $CaCO_3 + heat \rightarrow CaO + CO_2$

v) $CaO + SiO_2 \rightarrow CaSiO_3$

a) Which reaction shows the reduction of iron ore?

b) Which compound is acting as flux here?

c) Which shows the formation of slag?

d) Name the slag formed here?

e) Name the ore fed into blast furnace?

122. Match the name of the given compounds.

a) $CH_3 - CH_2 - \underset{\displaystyle CH_3}{\underset{\vert}{CH}} - CH_3$	Butan - 2 - ol
b) $CH_3 - \underset{\displaystyle CH_3}{\underset{\vert}{\overset{\displaystyle CH_3}{\overset{\vert}{C}}}} - CH_3$	Pent - 2 - ene
c) $CH_3 - CH_2 - CH = CH - CH_3$	2 - Methyl butane
d) $CH_3 - CH_2 - \underset{\displaystyle OH}{\underset{\vert}{CH}} - CH_3$	Methoxy ethane
e) $CH_3 - CH_2 - O - CH_3$	2, 2 - Di Methyl propane
	2 - Methyl pentane
	Propan - 1 - ol

EQUIP - DIET KASARAGOD

SSLC QUESTION POOL

CHEMISTRY - ENGLISH MEDIUM

Answer Key

---

1 Mark Question - Answers

1. s
2. 7
3. Na
4. $C_3H_6Cl_2$
5. Ethyne
6. - OH
7. 22.4L
8. f
9. Cathode
10. 10
11. Calcium Oxide or CaO or quick lime
12. Zn or Zinc
13. Isoprene
14. Leaching
15. Alkoxy group
16. Vinegar
17. Drying Agent
18. +4
19. 3f
20. Avagadro's Law

21. Iron Tungstate

22. Copper

23. Ammonia

24. Vinyl Chloride

25. f Block

26. Hall-Heroult Process

27. Electrolysis

28. 4s

29. Boyel's Law

30. $C_n H_{2n}$

31. Avagadro Number

32. Contact Process

33. Chemical Energy $\longrightarrow$ Electrical Energy

34. Molar Volume (22.4L)

35. $\frac{44.8}{22.4} = 2$ Mole

36. Cathode

37. 6

38. PV = Constant

39. Ag

40. Zinc

41. Low

42. Teflon

43. f - block

44. Methylated spirit

45. Mixture of sodium cynide and gold cyanid

46. Habour Process

47. $1s^2\ 2s^2\ 2p^6$

2 Mark Question - Answers

48. a) V_2O_5 (Vanadium pentoxide)

Oleum $H_2S_2O_7$

49. a) Beaker 2 - Mg is more reactive than Zn

b) $Mg + ZnSO_4 \rightarrow MgSO_4 + Zn$

50. a) Increase the concentration of N_2 or decrease concentration of NH_3.

b) 450^0C. The optimum temperature for this reaction to take place is 450^0C.

51. a) black residue is formed

b) Dehydrating property

52. a) 10 b) $10xN_A$ ($10x6.022x10^{23}$)

53. Increase the concentration of H_2 or N_2; remove the NH_3 formed from the system.

(Any two points)

54. a) Ethanol (Ethyl alcohol)

b) $CO + 2H_2 \xrightarrow{catalyst} CH_3OH$

55. a) Copper Pyrites

b) Magnetite

56. a) Dense white fumes are forming

b) $NH_3 + HCl \rightarrow NH_4Cl$

57. a) Cryolite

b) To decrease the melting point of Alumina and to increase the electrical conductivity.

58. a) Zn

b) $Zn \longrightarrow Zn^{2+} + 2^{e-}$

59. a) Ammonia

b) Basic

60. a) Ester b) They are having smell of fruits or flowers

61. a) Avagadro's law

b) Statement of the law

62. A - $1s^2 2s^2 2p^6 3s^2$ because 2 d subshell doesn't exist.

3 Mark Question - Answers

63. a) Boyle's law

b) PV = a constant, $P\alpha\frac{1}{V}$

c) Charl's Law

64. a) Zn - Anode, Cu - Cathode

b) $Cu^{2+} + 2e^- \rightarrow Cu$

c) $Zn \rightarrow Cu$

65. a) 8

b) 4^{th}

c) 4 - Ethyl octane

66. a) $_{24}Cr$ - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^1\ 3d^5$

b) Half filled sub shells are more stable than partially filled subshells.

c) Group 6, Period 4

67. a) Anode - Cl_2, Cathode - H_2

b) $2Cl \rightarrow Cl_2 + 2e^-$

c) NaOH (Sodium hydroxide)

68. +3, $Fe^{3+} = 1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5$

69. a) 5 b) Methyl c) 2, 3 - di methyl pentane

70. a) Haematite b) Haematite Ore, Limestone, Coke

c) Gangue $\rightarrow$ Silica (SiO_2) Flux $\rightarrow$ CaO

71. a) 200K b) 1350L c) Charl's Law

72. a) A-Invertase, B - Zymase

b) 95.6% concentrated Ethanol is known as rectified spirit.

c) A mixture of absolute alcohol and petrol.

73. a) B

b) C

c) Periodic number 3. The period number is same as the shell number of shells present in the atom.

74. a) 2

b) $2 \times 6.022 \times 10^{23}$

c) 17g

d) 51g

e) 4

f) $4 \times 6.022 \times 10^{23}$

75. a)

$$CH_3 - CH_2 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_2 - CH_3$$

b) 3, 4 - Dimethyl hexane

76. a) Silver gets deposited at the copper plate.

b) $Cu + 2AgNO_3 \rightarrow Cu(NO_3)_2 + 2Ag$

77. a) A - $C_6H_{12}O_6$ B - $CH_3 - CH_2 - OH$ (C_2H_5OH)

b) Ethyl ethanoate

c) $CH_3 - COOH + CH_3 - CH_2 - OH \rightarrow CH_3 - COO - CH_2 - CH_3 + H_2O$

Ethyl Ethanoate

78. a) $1s^2, 2s^2, 2p^6, 3s^2, 3p^5$

b) P block

c) NM

79. a) Hematite

b) Remove Sand SiO_2

c) Ca Si O_3

80. a) 5

b) Methyl

c) 2-Methyl Pentane

81. a) Monomers

b) Ethene

c) Covers/Carry bags

82. a) Oleum

b) King of Chemicals

c) Carbon

83. a) 5 mole, $5x6.022x10^{23}$, $5N_A$

b) 5x22.4 / 112.0L

c) $4x5x6.022x10^{23}$

84. a) $Mg/MgSO_4$ and $Cu/CuSO_4$

b) Mg

c) $Cu^{2+} + 2e^- \rightarrow Cu$

85. a) A - forward reaction B - backward reaction

b) Equilibrium

c) Both become equal

86. a) C_5H_{10}, C_4H_8

b) C_nH_{2n+2}

c) C_5H_8

87. a) Cl_2

b) Na

c) $2Cl^- \rightarrow Cl_2 + 2e^-$

4 Mark Question - Answers

88. (i) and (v) are functional isomers

(iii) and (iv) are position isomers

89. a - Levigation

b - Ore or impurity is magnetic in nature

c - Ore is lighter

d - Bauxite

90. a) $_{25}Mn$ - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 4s^2\ 3d^5$

b) $Mn^{+4}\ O_2^{-2}$ / +4

c) Mn^{2+} - $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^6\ 3d^5$

d) d-block elements are metals.

91. a) 8-10% alcohol

b) 95.6% alcohol

c) 100% alcohol

d) Mixture of petrol and alcohol

92. a) It turns black

b) Dehydration

c) They react to form ammonium sulphate

d) HCl

93. a) 'a' and c, b and d

b) i and iii - Chain Isomerism

ii and iv - Functional Isomerism

94. a) -16 b) 3 c) Third (M) d) Block - P, Group 16

95. a) Mg-Ag Cell diagram and labelling

b) Anode - $Mg \rightarrow Mg^{2+} + 2e^-$

Cathode - $Ag^+ 1e^- \rightarrow Ag$

96. a) Anode - Cl_2 gas b) H_2 gas

b) $2Cl^- \rightarrow Cl_2 + 2e^-$

c) NaOH

97. b, c, e, g

98. a) B - 2, 7

C - 2, 8, 6

b) Atomic number of A - 8

Atomic number of C - 16

c) AC & BD

Valency of A & C - 2

Valency of B & D - 1

d) X_2A

99. i) a) $2x6.022x10^{23}$ atoms

b) 1 GMM

c) $6.022x10^{23}$ molecules

ii) 6.022×10^{23}

100. a) A - Copper rod

B - $AgNO_3$ solution (Salt solution of Silver)

b) From Copper rode to Silver rod

c) Anode

$Cu \rightarrow Cu^{2+} + 2e^-$

Cathode

$Ag^+ + le^- \rightarrow Ag$ or $2Ag^+ + 2e^- \rightarrow 2Ag$

101. a) Carbon monoxide

Coke(c) reacts with Oxygen and form CO_2.

$C + O_2 \rightarrow CO_2$

CO_2 combines with more Carbon & produce CO

b) Silica (Silicon dioxide - S_1O_2)

CaO (Calcium Oxide) is used to remove Silica.

102. i) Isomer pairs

$CH_3 - O - CH_2 - CH_3$ & $CH_3 - CH_2 - CH_2 - OH$

$CH_3 - O - CH_2 - CH_3$ & $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_3$

- Functional Isomerism

$CH_3 - CH_2 - CH_2 - OH$ & $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_3$

- Position Isomerism

ii) Methoxy ethane

103. a) 2 mole $(\frac{88}{44} = 2 \text{ mole})$

b) $3x2x6.022 \times 10^{23}$ or $6\ N_A$

c) $2x6.022x10^{23}$ Molecule $2\ N_A$

d) $2x22.4 =$ **44.8L**

104. a) Copper Pyritis/Cuprite

b) Electrolysis

c) Copper Sulphate

d) $Cu^{2+} + 2e \longrightarrow Cu$

105.

A	B	C
$H_2+I_2 \rightleftharpoons 2HI$	Reversible Reaction	Products converts in to Reactants
$NaOH + HCl \longrightarrow NaCl + H_2O$	Irreversible Reaction	Products not converts in to Reactants

106. a) Sodium Cyanide + Gold Cyanide

b) Cathode - Iron Bangle

Anode - Gold

c) Reduction

d) Oxidation

107. a) Wash

b) The poisonus mixture of methanol and ethanol to prevent the mis use of ethanol.

c) Paints, Varnish, Organic solvents.

d) Invertase, Zymase

108. a) hex

b) 3

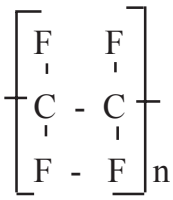
c) Ethyl

d) 3 - Ethyl hexane

109. 1 - b

2 - a

3 - d

4. 

110. a) 17

b) 'd'

c) 12

d) 4

111. a) $CH_3 - \underset{\underset{OH}{|}}{CH} - CH_3$

b) 1 and 2

c) $CH_3 - \underset{\displaystyle CH_3}{\underset{|}{CH}} - CH_3$

d) Methoxy ethane

112. a) 4 GMM b) $4x6.022x10^{23}$ c) 4 x 22.4 L d) 4

113. a) CO

b) $CaO + SiO_2 \rightarrow CaSiO_3$

c) $Fe_2O_3 + 3CO_2 \rightarrow 2Fe + 3CO_2$

d) Haematite, Coke and lime stone

e) Pig iron

114. a) Displacement

b) Thermal Cracking

c) Combustion

d) Polymarisation

e) Addition

115. i) Ethyl ethanole

ii) Ethanol and Ethanoic acid

iii) Esterification reaction

iv) $CH_3 - CH_2OH + CH_3COOH \rightarrow CH_3 - COO - CH_2 - CH_3$

116. a) 46

b) $3 \times N_A$

c) ½

d) 126

e) $2x N_A$

117. i) $CH_4 + Cl_2 \rightarrow CH_3Cl + HCl$ - Substitution reaction

$C_2H_6 + O_2 \rightarrow CO_2 + H_2O$ - Combustion

$nCH_2 = CH_2 \rightarrow [CH_2\text{-}CH_2]_n$ - Polymerisation

$CH_3 - CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - CH_3 \rightarrow CH_3 - CH_2 - CH_2 - CH_3 + CH_3 + CH = CH_2$

Thermal cracking

ii) Butane

118. a) $CH_3 - CH_2 - CH_2 - CH_3$ (Butane)

b) Butane

c) $CH_3 - CH_2 - CH_2 - CH_2 - COOH$

Pentanoic acid

d) Carboxylic acids

119. a) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 3d^{10}, 4s^1$

b) Half filled or full filled d-subshells shows more stable than the other electronic configuration.

c) In d-block

d) * Produce coloured compounds

* Shows variable valency

e) Group 11, Period 4

120. a) Alkene

b) C_5H_{10}

c) $C_n H_{2n}$

d) $CH_2 = CH_2$

e) $CH_2 = CH_2 + H_2 \longrightarrow CH_3 - CH_3$

IUPAC Name is Ethane.

121. a) iii) b) CaO c) v) d) $CaSiO_3$ e) Hametite

122. a) 2 - Methyl Butane

b) 2, 2 - dimethyl propane

c) Pent - 2 - ene

d) Butan - 2 - ol

e) Methoxy ethane

◆◆◆