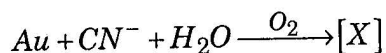
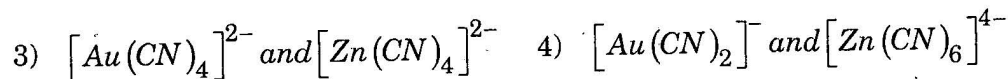
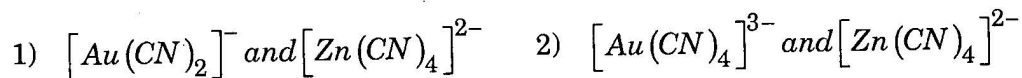


61. During the extraction of gold the following reactions take place –



X and Y are respectively –



62. The number of gram molecules of chlorine in 6.02×10^{25} hydrogen chloride molecules is –

1) 5

2) 50

3) 100

4) 10

63. Graphite is a soft solid lubricant extremely difficult to melt. The reason for this anomalous behaviour is that graphite –

1) has molecules of variable molecular masses like polymers.

2) has carbon atoms arranged in large plates of rings of strongly bound carbon atoms with weak interplate bonds.

3) is a non-crystalline substance.

4) is an allotropic form of carbon.

64. Paracetamol is a / an

1) antimalarial

2) antipyretic

3) analgesic

4) both 2 and 3

65. Which one of the following has maximum number of atoms of oxygen ?

1) 2 g of water

2) 2 g of sulphur dioxide

3) 2 g of carbon dioxide

4) 2 g of carbon monoxide.

(Space for Rough Work)

66. Which one of the following shows functional isomerism ?

- | | |
|-----------------------------|------------------------------------|
| 1) CH_2Cl_2 | 2) $\text{C}_2\text{H}_5\text{OH}$ |
| 3) C_3H_6 | 4) C_2H_4 |

67. In the ionic equation – $\text{BiO}_3^- + 6\text{H}^+ + \text{Xe}^- \longrightarrow \text{Bi}^{3+} + 3\text{H}_2\text{O}$,
the values of X is –

- | | |
|------|------|
| 1) 3 | 2) 4 |
| 3) 2 | 4) 6 |

68. Molarity of a given orthophosphoric acid solution is 3M. It's normality is –

- | | |
|----------|--------|
| 1) 1 N | 2) 3 N |
| 3) 0.3 N | 4) 9 N |

69. Acidified sodium fusion extract on addition of ferric chloride solution gives blood red colouration which confirms the presence of –

- | | |
|------------|-------------|
| 1) S | 2) N |
| 3) N and S | 4) S and Cl |

70. A body of mass 10 mg is moving with a velocity of 100 ms^{-1} . The wavelength of de-Broglie wave associated with it would be –

(Note : $h = 6.63 \times 10^{-34} \text{ Js}$)

- | | |
|-------------------------------------|-------------------------------------|
| 1) $6.63 \times 10^{-37} \text{ m}$ | 2) $6.63 \times 10^{-31} \text{ m}$ |
| 3) $6.63 \times 10^{-34} \text{ m}$ | 4) $6.63 \times 10^{-35} \text{ m}$ |

(Space for Rough Work)

71. Mg^{2+} is isoelectronic with

1) Ca^{2+}

2) Na^+

3) Zn^{2+}

4) Cu^{2+}

72. Gram molecular volume of oxygen at STP is -

1) 11200 cm^3

2) 22400 cm^3

3) 5600 cm^3

4) 3200 cm^3

73. Presence of halogen in organic compounds can be detected using -

1) Beilstein's test

2) Kjeldahl test

3) Duma's test

4) Leibig's test

74. The electronic configuration of Cr^{3+} is

1) $[Ar]3d^5 4s^1$

2) $[Ar]3d^2 4s^1$

3) $[Ar]3d^3 4s^0$

4) $[Ar]3d^4 4s^2$

75. The mass of a metal, with equivalent mass 31.75, which would combine with 8 g of oxygen is

1) 31.75

2) 3.175

3) 8

4) 1

(Space for Rough Work)

76. Benzene reacts with chlorine in sunlight to give a final product –
- 1) C_6H_5Cl
 - 2) C_6Cl_6
 - 3) $C_6H_6Cl_6$
 - 4) CCl_4
77. In the periodic table metals usually used as catalysts belong to
- 1) s - block
 - 2) p - block
 - 3) d - block
 - 4) f - block
78. Dalton's law of partial pressures is applicable to which one of the following systems ?
- 1) $CO + H_2$
 - 2) $H_2 + Cl_2$
 - 3) $NO + O_2$
 - 4) $NH_3 + HCl$
79. The general formula of a cycloalkane is
- 1) C_nH_{2n+2}
 - 2) C_nH_{2n-2}
 - 3) C_nH_{2n}
 - 4) C_nH_n
80. In acetylene molecule, between the carbon atoms there are –
- 1) three sigma bonds
 - 2) two sigma and one pi bonds
 - 3) one sigma and two pi bonds
 - 4) three pi bonds

(Space for Rough Work)

81. Denatured alcohol is
- 1) Rectified spirit
 - 2) Undistilled ethanol
 - 3) Rectified spirit + methanol + naphtha
 - 4) Ethanol + methanol
82. During the formation of a chemical bond
- 1) energy decreases
 - 2) energy increases
 - 3) energy of the system does not change
 - 4) electron-electron repulsion becomes more than the nucleus-electron attraction
83. One mole of oxygen at 273 k and one mole of sulphur dioxide at 546 k are taken in two separate containers, then,
- 1) kinetic energy of O_2 > kinetic energy of SO_2 .
 - 2) kinetic energy of O_2 < kinetic energy of SO_2 .
 - 3) kinetic energy of both are equal.
 - 4) None of these
84. +I effect is shown by
- | | |
|------------|------------|
| 1) $-NO_2$ | 2) $-Cl$ |
| 3) $-Br$ | 4) $-CH_3$ |
85. Formation of coloured solution is possible when metal ion in the compound contains
- | | |
|---------------------------|-----------------------|
| 1) paired electrons | 2) unpaired electrons |
| 3) lone pair of electrons | 4) none of these |

(Space for Rough Work)

1) temperature 2) surface tension
3) viscosity 4) all of these

1) amine to amide 2) amide to amine
3) alcohol to acid 4) acid to alcohol

1) sodium cobaltinitrite 2) sodium hexanitrito cobaltate (III)
3) sodium hexanitro cobalt (III) 4) sodium hexanitrito cobaltate (II)

1) 0°C and 1 atm 2) 273 k and 101.3 k Pa
3) 298 k and 1 atm 4) 0°C and 101.3 k Pa

1) 3 2) 2
3) 1 4) 4

SR - 33

- (Space for Rough Work)

96. According to Bayer's strain theory which is highly stable ?

- | | |
|-----------------|-----------------|
| 1) cyclohexane | 2) cycloheptane |
| 3) cyclopentane | 4) cyclobutane |

97. The number of antibonding electron pairs in O_2^{2-} molecular ion on the basis of molecular orbital theory is

[Note - Atomic number of O is 18]

- | | |
|------|------|
| 1) 2 | 2) 3 |
| 3) 4 | 4) 5 |

98. Hydroxyl ion concentration of 1M HCl is

- | | |
|--|---|
| 1) $1 \times 10^{-14} \text{ mol dm}^{-3}$ | 2) $1 \times 10^{-1} \text{ mol dm}^{-3}$ |
| 3) $1 \times 10^{-13} \text{ mol dm}^{-3}$ | 4) $1 \times 10^1 \text{ mol dm}^{-3}$ |

99. Geometrical isomerism is shown by

- | | |
|------------------------------|-------------------|
| 1) $-C-C-$ | 2) $-C \equiv C-$ |
| 3) $\diagup C = C \diagdown$ | 4) None of these |

100. The oxidation state of iron in $K_4[Fe(CN)_6]$ is

- | | |
|------|------|
| 1) 2 | 2) 3 |
| 3) 4 | 4) 1 |

(Space for Rough Work)

101. In which of the following process, a maximum increase in entropy is observed ?

- | | |
|---------------------------------|--------------------------|
| 1) dissolution of salt in water | 2) condensation of water |
| 3) sublimation of naphthalene | 4) melting of ice |

102. Decomposition of benzene diazonium chloride by using Cu_2Cl_2/HCl to form chlorobenzene is

- | | |
|---------------------------|-----------------------|
| 1) Cannizzarro's reaction | 2) Kolbe's reaction |
| 3) Sandmeyer's reaction | 4) Raschig's reaction |

103. Which complex can not ionise in solution ?

- | | |
|-----------------------|-----------------------|
| 1) $[Pt(NH_3)_6]Cl_4$ | 2) $K_2[Pt(F_6)]$ |
| 3) $K_4[Fe(CN)_6]$ | 4) $[CoCl_3(NH_3)_3]$ |

104. Considering the reaction $C(s) + O_2(g) \rightarrow CO_2(g) + 393.5 \text{ kJ}$ the signs of ΔH , ΔS and ΔG respectively are

- | | |
|--------------|--------------|
| 1) $-, +, -$ | 2) $-, -, -$ |
| 3) $-, +, +$ | 4) $+, -, -$ |

105. The product formed when hydroxylamine condenses with a carbonyl compound is called

- | | |
|--------------|--------------|
| 1) hydrazone | 2) hydrazine |
| 3) oxime | 4) hydrazide |

(Space for Rough Work)

106. Which of the following forms a colourless solution in aqueous medium?

- | | |
|--------------|--------------|
| 1) Ti^{3+} | 2) Sc^{3+} |
| 3) V^{3+} | 4) Cr^{3+} |

107. When a sulphur sol is evaporated sulphur is obtained. On mixing with water sulphur sol is not formed. The sol is

- | | |
|----------------|----------------|
| 1) hydrophilic | 2) hydrophobic |
| 3) reversible | 4) lyophilic |

108. An alkyl halide reacts with alcoholic ammonia in a sealed tube, the product formed will be

- | | |
|---------------------|-------------------------------|
| 1) a primary amine | 2) a secondary amine |
| 3) a tertiary amine | 4) a mixture of all the three |

109. When conc. H_2SO_4 is heated with P_2O_5 , the acid is converted into

- 1) sulphur
- 2) sulphur dioxide
- 3) sulphur trioxide
- 4) a mixture of sulphur dioxide and sulphur trioxide

110. Entropy of the universe is

- | | |
|----------------------------|----------------------------|
| 1) continuously increasing | 2) continuously decreasing |
| 3) zero | 4) constant |

(Space for Rough Work)

111. Which of the following salts on being dissolved in water gives $\text{pH} > 7$ at 25°C ?

- | | |
|---------------------------|---------------------------|
| 1) NH_4CN | 2) NH_4Cl |
| 3) KNO_3 | 4) KCN |

112. The reagent used in Clemmenson's reduction is

- | | |
|---------------------------------------|----------------------------------|
| 1) alc. KOH | 2) aq. KOH |
| 3) Zn-Hg / con. HCl | 4) Conc. H_2SO_4 |

113. When KBr is dissolved in water, K^+ ions are

- | | |
|---------------|-------------|
| 1) oxidised | 2) reduced |
| 3) hydrolysed | 4) hydrated |

114. The noble gas mixture is cooled in a coconut bulb at 173 K . The gases that are not adsorbed are

- | | |
|--------------------------------|--------------------------------|
| 1) He and Ne | 2) Ar and Kr |
| 3) He and Xe | 4) Ne and Xe |

115. The volume of 10N and 4N HCl required to make 1 litre of 7N HCl are

- | |
|---|
| 1) 0.75 litre of 10N HCl and 0.25 litre of 4N HCl |
| 2) 0.80 litre of 10N HCl and 0.20 litre of 4N HCl |
| 3) 0.60 litre of 10N HCl and 0.40 litre of 4N HCl |
| 4) 0.50 litre of 10N HCl and 0.50 litre of 4N HCl |

(Space for Rough Work)

116. A metal present in insulin is

- | | |
|-----------|--------------|
| 1) copper | 2) iron |
| 3) zinc | 4) aluminium |

117. Carbon forms two oxides which have different compositions. The equivalent mass of which remains constant ?

- | | |
|------------------------------|---------------------------|
| 1) carbon | 2) oxygen |
| 3) neither carbon nor oxygen | 4) both carbon and oxygen |

118. Maximum number of molecules of CH_3I that can react with a molecule of CH_3NH_2 are

- | | |
|------|------|
| 1) 1 | 2) 2 |
| 3) 4 | 4) 3 |

119. Ellingham diagram represents a graph of

- | | |
|----------------------|------------------------|
| 1) ΔG Vs T | 2) ΔG^0 Vs T |
| 3) ΔS Vs P | 4) ΔG Vs P |

120. Identify the ore not containing iron

- | | |
|------------------|---------------|
| 1) chalcopyrites | 2) carnallite |
| 3) siderite | 4) limonite |

(Space for Rough Work)