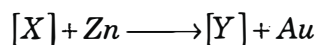
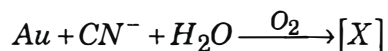


**Consortium of Medical Engineering and  
Dental Colleges of Karnataka  
(COMEDK)  
Undergraduate Entrance Test(UGET)**

**Chemistry Sample Paper-2**

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



X and Y are respectively –

- 1)  $[Au(CN)_2]^-$  and  $[Zn(CN)_4]^{2-}$     2)  $[Au(CN)_4]^{3-}$  and  $[Zn(CN)_4]^{2-}$   
3)  $[Au(CN)_4]^{2-}$  and  $[Zn(CN)_4]^{2-}$     4)  $[Au(CN)_2]^-$  and  $[Zn(CN)_6]^{4-}$

62. The number of gram molecules of chlorine in  $6.02 \times 10^{25}$  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.

66. Which one of the following shows functional isomerism ?

- |               |               |
|---------------|---------------|
| 1) $CH_2Cl_2$ | 2) $C_2H_5OH$ |
| 3) $C_3H_6$   | 4) $C_2H_4$   |

67. In the ionic equation -  $BiO_3^- + 6H^+ + Xe^- \longrightarrow Bi^{3+} + 3H_2O$ ,  
the values of  $X$  is -

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

68. Molarity of a given orthophosphoric acid solution is 3M. Its 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  $100 \text{ ms}^{-1}$ . 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) $6.63 \times 10^{-35} \text{ m}$ |

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     |

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

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      |

86. Which of the following is an intensive property ?
- 1) temperature
  - 2) surface tension
  - 3) viscosity
  - 4) all of these
87. Hofmann's bromamide reaction is to convert
- 1) amine to amide
  - 2) amide to amine
  - 3) alcohol to acid
  - 4) acid to alcohol
88. IUPAC name of  $Na_3[Co(NO_2)_6]$  is
- 1) sodium cobaltinitrite
  - 2) sodium hexanitrito cobaltate (III)
  - 3) sodium hexanitro cobalt (III)
  - 4) sodium hexanitrito cobaltate (II)
89. Thermodynamic standard conditions of temperature and pressure are
- 1)  $0^{\circ}C$  and 1 atm
  - 2) 273 k and 101.3 k Pa
  - 3) 298 k and 1 atm
  - 4)  $0^{\circ}C$  and 101.3 k Pa
90. How many chiral carbon atoms are present in 2, 3, 4 - trichloropentane ?
- 1) 3
  - 2) 2
  - 3) 1
  - 4) 4

91. The number of unidentate ligands in the complex ion is called
- 1) EAN
  - 2) Coordination number
  - 3) primary valency
  - 4) oxidation number
92.  $2SO_{2(g)} + O_{2(g)} \xrightleftharpoons{V_2O_5}$  is an example for
- 1) irreversible reaction
  - 2) heterogenous catalysis
  - 3) homogenous catalysis
  - 4) neutralisation reaction
93. The amino acid which is not optically active is
- 1) glycine
  - 2) alanine
  - 3) serine
  - 4) lactic acid
94. For a stable molecule the value of bond order must be
- 1) negative
  - 2) positive
  - 3) zero
  - 4) there is no relationship between stability and bond order.
95. Which one of the following is a second order reaction ?
- 1)  $CH_3COOCH_3 + NaOH \longrightarrow CH_3COONa + H_2O$
  - 2)  $H_2 + Cl_2 \xrightarrow{\text{sunlight}} 2HCl$
  - 3)  $NH_4NO_3 \longrightarrow N_2 + 3H_2O$
  - 4)  $H_2 + Br_2 \longrightarrow 2HBr$

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 |



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 diozonium chloride by using  $Cu_2Cl_2/HCl$  to form chlorobenzene is

- 1) Cannizzaro'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  $\Delta H$ ,  $\Delta S$  and  $\Delta G$  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

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                |

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

- |                           |                           |
|---------------------------|---------------------------|
| 1) $\text{NH}_4\text{CN}$ | 2) $\text{NH}_4\text{Cl}$ |
| 3) $\text{KNO}_3$         | 4) $\text{KCN}$           |

112. The reagent used in Clemmenson's reduction is

- |  |                                  |
|--|----------------------------------|
| 1) alc. $\text{KOH}$                         | 2) aq. $\text{KOH}$              |
| 3) $\text{Zn} - \text{Hg} / \text{con. HCl}$ | 4) Conc. $\text{H}_2\text{SO}_4$ |

113. When  $\text{KBr}$  is dissolved in water,  $\text{K}^+$  ions are

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

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

- |                                |                                |
|--------------------------------|--------------------------------|
| 1) $\text{He}$ and $\text{Ne}$ | 2) $\text{Ar}$ and $\text{Kr}$ |
| 3) $\text{He}$ and $\text{Xe}$ | 4) $\text{Ne}$ and $\text{Xe}$ |

115. The volume of  $10\text{N}$  and  $4\text{N HCl}$  required to make 1 litre of  $7\text{N HCl}$  are

- 0.75 litre of  $10\text{N HCl}$  and 0.25 litre of  $4\text{N HCl}$
- 0.80 litre of  $10\text{N HCl}$  and 0.20 litre of  $4\text{N HCl}$
- 0.60 litre of  $10\text{N HCl}$  and 0.40 litre of  $4\text{N HCl}$
- 0.50 litre of  $10\text{N HCl}$  and 0.50 litre of  $4\text{N HCl}$

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) $\Delta G$ Vs $T$ | 2) $\Delta G^0$ Vs $T$ |
| 3) $\Delta S$ Vs $P$ | 4) $\Delta G$ Vs $P$   |

120. Identify the ore not containing iron

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