

**CHEMISTRY (2014)**

91. In paints dispersed phase and dispersion medium are
- |                       |                      |
|-----------------------|----------------------|
| (1) solid and liquid  | (2) liquid and solid |
| (3) liquid and liquid | (4) gas and liquid   |

92. Which statement is incorrect?
- |  |
|--|
| (1) U-238 is used as fuel in nuclear reactor |
| (2) Co-60 is used in the treatment of cancer |
| (3) C-14 is used in carbon dating            |
| (4) I-131 is used in treatment of goiter     |

**Ans. 4**

I-131 is not used in treatment of goiter

93. Constituents of "German Silver" are
- |                |                |
|----------------|----------------|
| (1) Cu, Zn, Ni | (2) Ag, Zn, Ni |
| (3) Ag, Cu, Fe | (4) Zn, Cu, Ag |

**Ans. 1**

Constituents of "German Silver" are: Cu, Zn, Ni

94. Density of Air will be highest at
- |                     |                     |
|---------------------|---------------------|
| (1) 0°C and 1 atm   | (2) 73°C and 1 atm  |
| (3) -10°C and 2 atm | (4) -73°C and 2 atm |

**Ans. 4**

$$PM = dRT$$

$$d \propto \frac{P}{T}$$

Lesser the temperature, higher the pressure, higher the density.



Ans. 2

Increasing order of intermolecular forces of attraction.

Carbon dioxide < Acetone < Water < Sugar  
(gas) (volatile liquid) (liquid) (solid)

98. Which technique is used in diagnostic laboratories for blood and urine tests?

- (1) Filtration (2) Sublimation  
(3) Distillation (4) Centrifugation

Ans. 4

Centrifugation is used in diagnostic laboratories for blood and urine tests.

99. In rainy season, common salt get moistened due to the presence of.....

- (1) MgCl<sub>2</sub> (2) CaCl<sub>2</sub>  
(3) BaCl<sub>2</sub> (4) SrCl<sub>2</sub>

Ans. 1

MgCl<sub>2</sub> is more hygroscopic substance present in common salt responsible of moistening.

100. At 100°C steam has more heat energy than the energy of boiling water because

- (1) Steam has lesser kinetic energy than boiling water  
(2) Steam has latent heat of vaporization  
(3) Steam has lesser potential energy than boiling water  
(4) All the reasons given above

Ans. 2

At 100°C steam has more heat energy than the energy of boiling water because steam has latent heat of vaporization.

101. At 20°C the solubility of salt x is 34.7 g in 100 g of water. If the density of saturated solution is 1.3 g/mL, the weight/volume (w/v) percentage of solution is:

- (1) 25.76 (2) 32.98  
(3) 33.49 (4) 22.56

Ans. 3

Mass of solution = 134.7 g

Density of solution = 1.3 g/L

Volume of solution =  $\frac{134.7}{1.3} = 103.62$

W / v percentage =  $\frac{\text{Mass of solute}}{\text{Volume of solution}} \times 100 = \frac{34.7 \times 100}{103.62} = 33.49\%$

102. Polymer used in making of covering of medicine capsules

- (1) PEA (2) PHBV  
(3) PAN (4) PEEA

Ans. 2

PHBV = Poly hydroxyl butyrate valerate. It is a biodegradable polymer.

103. Chemical formula of Potash Alum is

- (1)  $K_2SO_4 \cdot Al(SO_4)_2 \cdot 24H_2O$  (2)  $K_2SO_4 \cdot Al_2(SO_4)_2 \cdot 24H_2O$   
(3)  $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$  (4)  $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 12H_2O$

Ans. 3

$K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ .

104. The Anion  $O^{2-}$  is iso-electronic with

- (1)  $F^+$  (2)  $F^-$   
(3)  $N^{2-}$  (4)  $N^{+3}$

Ans. 2

Anion  $O^{2-}$  has 10 electrons.

Anion  $F^-$  has 10 electrons.

105. The maximum no. of oxygen atoms are present in

- (1) 1 g of  $H_2O$  (2) 1 g of  $H_2O_2$   
(3) 1 g of  $Na_2O$  (4) 1 g of  $CO_2$

Ans. 2

For  $H_2O = \frac{N}{18^A} \text{ (O -atom)}$

For  $H_2O_2 = \frac{N}{34^A} \times 2 \text{ (O -atom)}$

For  $Na_2O = \frac{N}{62^A} \text{ (O -atom)}$

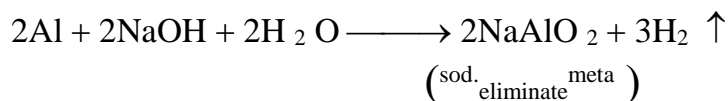
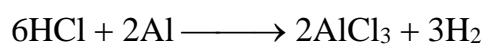
For  $CO_2 = \frac{N}{44^A} \times 2 \text{ (O-atom)}$

106. Choose the element which react with Acid as well as base

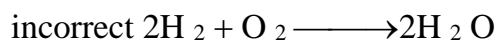
- (1) Mg (2) Cu  
(3) S (4) Al

Ans. 4

Aluminium is the element which react with Acid as well as base

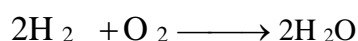


107. For the given reaction which statement is



- (1) Two molecule of hydrogen combine with one molecule of oxygen to form two molecule of water.
- (2) 4 u of hydrogen combine with 32 u of oxygen to form 36u of water.
- (3) 20 volume of hydrogen combine with 10 volume of oxygen to form 20 volume of water
- (4) 40 volume of hydrogen combine with 30 volume of oxygen to form 70 volume of water

Ans. 4



2 vol 1vol                  2 vol

∴ 40 volume of hydrogen will combine with 20 volume of oxygen to form 40 volume of water

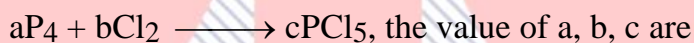
108. A mixture of water and diesel can be separated by

- |                 |                       |
|-----------------|-----------------------|
| (1) Filtration  | (2) Centrifugation    |
| (3) Evaporation | (4) Separating funnel |

Ans. 4

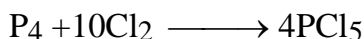
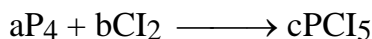
A mixture of water and diesel can be separated by separating funnel due to difference in densities.

109. For the balanced equation given below:



- |           |            |
|-----------|------------|
| (1) 1,2,2 | (2) 1,3,4  |
| (3) 2,3,4 | (4) 1,10,4 |

Ans. 4



110. The highest temperature among the following is

- |           |           |
|-----------|-----------|
| (1) 200°F | (2) 273 K |
| (3) 105°C | (4) 298 K |

Ans. 3

105°C is the highest temperature

$$200^\circ\text{F} = 93.3^\circ\text{C}$$

$$273 \text{ K} = 0^\circ\text{C}$$

$$298 \text{ K} = 25^\circ\text{C}$$

111. In extraction of metals coke is used as

- (1) Oxidising agent (2) Reducing agent  
(3) Dehydrating agent (4) Catalyst

Ans. 2

In the extraction of metal coke is used as reducing agent.

112. Choose the correct order of cooling from evaporation:

- (1) Water < Ether < Alcohol (2) Ether < Alcohol < Water  
(3) Water < Alcohol < Ether (4) Alcohol < Water < Ether

Ans. 3

Cooling from evaporation

Water < Alcohol < Ether

113. Which metals is present in Haemoglobin

- (1) Cu (2) Fe  
(3) Mg (4) Cr

Ans. 2

Fe is present in Haemoglobin.

114. Which of the following is a natural polymer:

- (1) Nylon (2) Rayon  
(3) Protein (4) Polythene

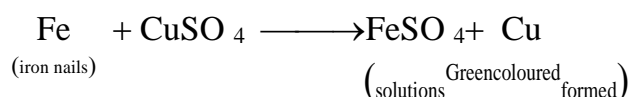
Ans. 3

Nylon, Rayon & Polyethene are synthetic polymer only protein is a natural polymer.

115. When iron nails are added to  $\text{CuSO}_4$  solution

- (1) A colourless solution is formed  
(2) A light green coloured solution is formed  
(3) A yellow coloured solution is formed  
(4) No change in colour of solution

Ans. 2



116. Which of the following is not a property shown by plaster of paris

- (1) It solidifies after mixing with water  
(2) It is used for setting of broken bones  
(3) When kept open in air it easily loses its water  
(4) A large amount of energy is released on mixing it with water

Ans. 3

117. Match the Columns and mark the correct option

**Column -1**

**Column – II**

- |                              |                                   |
|------------------------------|-----------------------------------|
| (A) PVC                      | (i) Artificial silk               |
| (B) PHBV                     | (ii) Artificial wool              |
| (C) Orion                    | (iii) Coating of electrical wires |
| (D) Rayon                    | (iv) Biodegradable polymer        |
| (1) A-i, B-ii, C-iii, D - iv | (2) A-ii, B-iii, C-iv, D-i        |
| (3) A-iii, B-iv, C-i, D-ii   | (4) A-iii, B-iv, C-ii, D-i        |

**Ans. 4**

118. Allotropes have

- |                              |                        |
|------------------------------|------------------------|
| (1) Same physical properties | (2) Same structure     |
| (3) Same chemical properties | (4) Same boiling point |

**Ans. 3**

119. A student dissolved 50 g sugar in 200 mL water at room temperature. He then heated the solution, till the final volume became 100 mL. How much sugar is still present in the solution?

- |          |           |
|----------|-----------|
| (1) 0g   | (2) 25 g  |
| (3) 50 g | (4) 100 g |

**Ans. 3**

Sugar is non volatile, only solvent will evaporate on heating, so solute amount will remain constant.

120. Which of the following elements has the last electron present in the N shell?

- |               |            |
|---------------|------------|
| (1) Potassium | (2) Sodium |
| (3) Chlorine  | (4) Oxygen |

**Ans. 1**

Potassium =19

K L M N

2 8 8 1

121. Which of the following option can't save an iron instrument from rusting?

- (1) Galvanization
- (2) Electroplating with tin
- (3) Keeping the object wrapped with copper wire
- (4) Keeping the object wrapped with magnesium wire





125. In a mixture iron filling and sulphur powder, the components of mixture can be separated by

- (1) Using a magnet
- (2) Dissolving the mixture in CS<sub>2</sub> and then filtering
- (3) Heating the mixture and then adding CS<sub>2</sub> to black mass
- (4) Using both techniques (1) and (2)

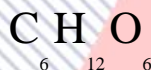
Ans. 4

Mixture of iron filling & sulphur powder can be separated either by using a magnet or dissolving the mixture in CS<sub>2</sub>.

126. Weight of a molecule of C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> is

- (1) 180 g
- (2)  $\frac{1}{180}$  g
- (3) 180 u
- (4)  $\frac{1}{180}$  u

Ans. 3

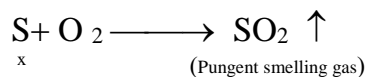


$$6 \times 12 + 12 \times 1 + 16 \times 6 = 180\text{u}$$

127. X is a yellow coloured non-metal, when X is burnt it produces a pungent smelling gas Y. Gas Y gets mixed with rain water to cause acid rain, which is harmful for building and crops both. Identify X and Y

- (1) P<sub>4</sub>, P<sub>2</sub>O<sub>5</sub>
- (2) N<sub>2</sub>, NH<sub>3</sub>
- (3) C, CO<sub>2</sub>
- (4) S, SO<sub>2</sub>

Ans. 4



128. In Shimla, where the atmospheric pressure is less than the normal atmospheric pressure (1 atm). The boiling point of water will be

- (1) less than 100°C
- (2) more than 100°C
- (3) 0°C
- (4) 100°C

Ans. 1

At higher altitude atm pressure is less, so boiling point is less than 100°C.

129. During laboratory preparation  $\text{CH}_4$  gas is collected by downward displacement of water because

- (1)  $\text{CH}_4$  is lighter than Air
- (2)  $\text{CH}_4$  is a poisonous gas
- (3) It does not dissolve in water
- (4) All the above statements are correct

Ans. 3

$\text{CH}_4$  is non-polar compound, so it cannot be dissolved in water.

130. Which of the following is an example of neutral oxide

- |                             |                             |
|-----------------------------|-----------------------------|
| (1) $\text{Fe}_2\text{O}_3$ | (2) $\text{Al}_2\text{O}_3$ |
| (3) $\text{CO}$             | (4) $\text{NO}_2$           |

Ans. 3

$\text{Fe}_2\text{O}_3$  is basic

$\text{Al}_2\text{O}_3$  is amphoteric

$\text{CO}$  is neutral

$\text{NO}_2$  is acidic