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ANSWER KEY - 2ⁿᵈ Term Exam 2019   Std 10   CHEMISTRY

Any 4 From 1 to 5 (1 mark for each)

1. 14
2. Volume is directly proportional to number of molecules of a gas at constant temperature and pressure
3. Carboxylic group
4. Barium Sulphate ($BaSO_4$)
5. ZnS

Any 4 From 6 to 10 (2 mark for each)

6. (a) Copper Sulphate ($CuSO_4$) Solution   (b) $Cu^{2+} + 2e^- \rightarrow Cu$

7. (i) At the equilibrium both the reactants and products coexist
   (iv) Chemical equilibrium is attained in a closed system

8. (a) A = C_3H_6 (b) Alkene

9. (a) Mg   (b) $Mg + 2HCl \rightarrow MgCl_2 + H_2$

10. (a) Liquation   (b) Low boiling point

Any 4 From 11 to 15 (3 mark for each)

11.

(a) Ammonium Chloride (NH_4Cl) and Calcium Hydroxide ($Ca(OH)_2$)

(b) Calcium Oxide (CaO)

(c) The density of Ammonia gas is less than the density of Air .

12.

(a) Leaching

(b) Aluminium is highly reactive metal . Its compounds are highly stable . So to reduce Aluminium from its ore a strong reducing agent is required . Hence electricity is used as the reducing agent in the manufacture of Aluminium .

(c) At Cathode .

13.

(a) Number of moles in 112 L SO_2 at STP = $\dfrac{\text{Volume in Litre at STP}}{22.4 \text{ Litre}}$ = $\dfrac{112}{22.4}$ = 5

(b) Number of molecules = Number of moles x N_A = $5 \times 6.022 \times 10^{23}$

(c) Mass of 112L of NH_3 gas at STP = $\underline{\text{Volume in Litre at STP}}$ x GMM of NH_3

$$= \frac{112}{22.4} \times 17 = 5 \times 17 = 85 \text{ g}$$

14.

(a) $X = SO_2$; $Y = H_2S_2O_7$ (Oleum)

(b) Vanadium pentoxide (V_2O_5)

(c) The dissolution of Sulphur trioxide in water is an exothermic reaction. It may turn
    Sulphuric acid initially formed into fine smog which will hinder further dissolution.

15.

(a) 6   (b) 2 , 4

(c) 2 , 4 - Dimethyl Hexane

Any 4 From 16 to 20 (4 mark for each)

16. (a) Carbon Monoxide (CO)

(b) $CaCO_3$ + Heat $\rightarrow$ $\underline{CaO}$ + CO_2 ; $\underline{CaO}$ + SiO_2 $\rightarrow$ $\underline{CaSiO_3}$

(c) CaO (A) is acting as Flux which helps to remove acidic gangue (SiO_2) by converting
    it into slag ($CaSiO_3$) in the process of extraction of Iron.

17. (a) Propene   (b) $CH_3 - O - CH_2 - CH_3$

(c) Butan - 2 - ol   (d) $CH_3 - C \equiv C - CH_3$

18. (a) $_9X - 1s^2\ 2s^2\ 2p^5$ (b) s block ($_{12}Y - 1s^2\ 2s^2\ 2p^6\ 3s^2$) ; Valency = 2 (c) YX_2

19. (a) Cu^{2+} ion   (b) Beaker B (Fe in $CuSO_4$ solution)

(c) Fe + $CuSO_4$ $\rightarrow$ $FeSO_4$ + Cu   (d) Ag

20

(a) $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$;

Because number of Reactant molecules is equal to number of Product molecules

(b) (i) If more reactants are added the rate of Forward reaction increases

(ii) If products are removed the rate of Forward reaction increases

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