

Chemistry Model Question Paper - 2

Question 1 : 50 cm³ of 0.2 N HCL is titrated against 0.1 N NaOH solution. The titration is discontinued after adding 50 cm³ of NaOH. The remaining titration is completed by adding 0.5 N KOH. The volume of KOH required for completing the titration is _____.

- (A) 10 cm³
- (B) 12 cm³
- (C) 10.5 cm³
- (D) 25 cm³

Answer: (A)

Question 2 : 80 g of oxygen contains as many atoms as in

- (A) 80 g of hydrogen
- (B) 1 g of hydrogen
- (C) 10 g of hydrogen
- (D) 5 g of hydrogen

Answer: (D)

Question 3 : 9.65 C of electric current is passed through fused anhydrous magnesium chloride. The magnesium metal thus obtained is completely converted into a Grignard reagent. The number of moles of the Grignard reagent obtained is _____.

- (A) 1×10^{-4}
- (B) 5×10^{-4}
- (C) 1×10^{-5}
- (D) 5×10^{-5}

Answer: (D)

Question 4 : A 6% solution of urea is isotonic with

- (A) 6% solution of Glucose
- (B) 25% solution of Glucose
- (C) 1 M solution of Glucose
- (D) 0.05 M solution of Glucose

Answer: (C)

Question 5 : A bivalent metal has an equivalent mass of 32. The molecular mass of the metal nitrate is

- (A) 192
- (B) 188
- (C) 182
- (D) 168

Answer: (B)

Question 6 : 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 : $h = 6.63 \times 10^{-34} \text{ Js}$)

- (A) $6.63 \times 10^{-37} \text{ m}$
- (B) $6.63 \times 10^{-31} \text{ m}$
- (C) $6.63 \times 10^{-34} \text{ m}$
- (D) $6.63 \times 10^{-35} \text{ m}$

Answer: (B)

Question 7 : A body of mass x kg is moving with a velocity of 100 ms^{-1} . Its de Broglie wavelength is $6.62 \times 10^{-35} \text{ m}$.

Hence x is ($h = 6.62 \times 10^{-34} \text{ Js}$)

(A) 0.15 kg

(B) 0.2 kg

(C) 0.1 kg

(D) 0.25 kg

Answer: (C)

Question 8 : A buffer solution is prepared in which the concentration of NH_3 is 0.30 M and the concentration of NH_4^+ is 0.20 M. If the equilibrium constant, K_b for NH_3 equals 1.8×10^{-5} , what is the pH of this solution?

(A) 8.73

(B) 9.08

(C) 9.43

(D) 11.72

Answer: (C)

Question 9 : A buffer solution contains 0.1 mole of sodium acetate dissolved in 1000 cm^3 of 0.1 M acetic acid. To the above buffer solution, 0.1 mole of sodium acetate is further added and dissolved. The pH of the resulting buffer is equal to _____.

(A) $\text{p}K_a$

(B) $\text{pK}_a - \text{Log}2$

(C) $\text{pK}_a + \text{Log}2$

(D) $\text{pK}_a + 2$

Answer: (C)

Question 10 : A complex compound in which the oxidation number of a metal is zero is

(A) $\text{K}_4 [\text{Fe} (\text{CN})_6]$

(B) $\text{K}_3 [\text{Fe} (\text{CN})_6]$

(C) $[\text{Ni} (\text{CO})_4]$

(D) $[\text{Pt} (\text{NH}_3)_4]\text{Cl}_2$

Answer: (C)

Question 11 : Which of the following is used to prepare Cl_2 gas at room temperature from concentrated HCl ?

(A) MnO_2

(B) H_2S

(C) KMnO_4

(D) Cr_2O_3

Answer: (C)

Question 12 : Which of the following is not an ore of magnesium?

- (A) Carnallite
- (B) Dolomite
- (C) Calamine
- (D) Sea water

Answer: (C)

Question 13 : Which of the following has the highest bond order?

- (A) N_2
- (B) O_2
- (C) He_2
- (D) H_2

Answer: (A)

Question 14 : Which of the following gives an aldehyde on dry distillation?

- (A) Calcium acetate + calcium benzoate
- (B) Calcium formate + calcium acetate
- (C) Calcium benzoate
- (D) Calcium acetate

Answer: (B)

Question 15 : Which of the following does not give benzoic acid on hydrolysis?

(A) phenyl cyanide

(B) benzoyl chloride

(C) benzyl chloride

(D) methyl benzoate

Answer: (C)