Chemistry Model Question Paper - 1

Question 1 : +I effect is shown by

(A) -N02

(B) -Cl

(C) -Br

(D) -CH3

Answer: (D)

Question 2 : 0.023 g of sodium metal is reacted with 100 cm3 of water. The pH of the resulting solution is _____.

(A) 11

(B) 10

(C) 12

(D) 9

Answer: (C)

Question 3 : 0.5 mole of each of H2, SO2 and CH4 are kept in a container. A hole was made in the container. After 3 hours, the order of partial pressures in the container will be

(A) pH2 > pSO2 > pCH4

(B) pH2 > pCH4 > pSO2

(C) pSO2 > pH2 > pCH4

(D) pSO2 > pCH4, > pH2

Answer: (D)

Question 4 : 10 cm3 of 0.1 N monobasic acid requires 15 cm3 of sodium hydroxide solution whose normality is

(A) 1.5 N

(B) 0.15 N

(C) 0.066 N

(D) 0.66 N

Answer: (C)

Question 5 : 10-6 M NaOH is diluted 100 times. The pH of the diluted base is

(A) between 6 and 7

(B) between 10 and 11

(C) between 7 and 8

(D) between 5 and 6

Answer: (C)

Question 6 : 2 gm of a radioactive sample having half life of 15 days was synthesised on 1st Jan 2009. The amount of the sample left behind on 1st March. 2009 (including both the days)

(A) 1 gm

(B) 0.5 gm

(C) 0 gm

(D) 0.125 gm

Answer: (D)

Question 7 : 2HI(g) Ý H2(g) + I2(g)
The equilibrium constant of the above reaction is 6.4 at 300 K. If 0.25 mole each of H2 and I2 are added to the system, the equilibrium constant will be

(A) 3.2

(B) 1.6

(C) 6.4

(D) 0.8

Answer: (C)

Question 8 : $2SO_2(g) + O_2(g) \underset{\nwarrow}{\overset{V_2O_5}{\rightleftharpoons}}$ is an example for

(A) irreversible reaction

(B) heterogeneous catalysis

(C) homogenous catalysis

(D) neutralisation reaction

Answer: (B)

Question 9 : 30 cc of $\frac{M}{3}$ HCl, 20 cc of $\frac{M}{2}$ 5 HNO3 and 40 cc of $\frac{M}{4}$ NaOH solutions are mixed and the volume is made up to 1 dm3. The pH of the resulting solution is

(A) 1

(B) 3

(C) 8

(D) 2

Answer: (D)

Question 10 : 5 moles of SO_2 and 5 moles of O_2 are allowed to react. At equilibrium, it was found that 60% of SO_2 is used up. If the partial pressure of the equilibrium mixture is one atmosphere. the partial pressure of O_2 is

(A) 0.21 atm

(B) 0.41 atm

(C) 0.82 atm

(D) 0.52 atm

Answer: (B)

Question 11 : Which one of these is NOT TRUE for benzene?

(A) It forms only one type of monosubstituted product

(B) There are three carbon-carbon single bonds and three carbon-carbon double bonds

(C) Heat of hydrogenation of benzene is less than the theoretical value

(D) The bond angle between carbon-carbon bonds is 120°

Answer: (B)

Question 12 : Which one of the following is paramagnetic?

(A) N2

(B) NO

(C) CO

(D) O3

Answer: (B)

Question 13 : Which one of the following is a covalent crystal?

(A) Ice

(B) Rock salt

(C) Dry ice

(D) Quartz

Answer: (D)

Question 14 : Which one of the following DOES NOT involve coagulation?

(A) Formation of delta region

(B) Clotting of blood by the use of ferric chloride

(C) Peptization

(D) Treatment of drinking water by potash alum

Answer: (C)

Question 15 : Which one is not a constituent of nucleic acid?

(A) Uracil

(B) Guanidine

(C) Phosphoric acid

(D) Ribose sugar

Answer: (B)