

Chemistry Mock Test 11

Q-1 An element having high first ionization energy is

- (a) Inert gas
- (b) Transition element
- (c) Representative element
- (d) Inner transition element

Q-2. Isotopes are those substances which have

- (a) Same number of protons
- (b) Same number of neutrons
- (c) Same number of nucleons
- (d) Same number of positrons

Q-3. Rutherford's atomic model suggests the existence of

- (a) Atom
- (b) Nucleus
- (c) α - particles
- (d) Mesons

Q-4. In which of following there exists a $p\pi - d\pi$ bonding?

- (a) Diamond
- (b) Graphite
- (c) Dimity lamina
- (d) Trisilylamine

Q-5. Which of the following is used as a moderator in nuclear reactor?

- (a) H_2O
- (b) D_2O
- (c) Alum

(d) Any of these

Q-6. At $80^{\circ}C$, distilled water has $[H_3O^+]$ concentration equal to $1 \times 10^6 \frac{\text{mole}}{\text{litre}}$. the value of K_w at this temperature will be

(a) 1×10^{-6}

(b) 1×10^{-9}

(c) 1×10^{-12}

(d) 1×10^{-15}

Q-7. When 0.5 g of Sulphuric acid is burnt to SO_2 , 4.6 kJ of heat is liberated. The enthalpy of formation of sulphur dioxide is (Molecular weight of S=32 O = 16)

(a) +147.2 kJ

(b) -147.2 kJ

(c) +294.4 kJ

(d) -294.4 kJ

Q-8. The internal energy of a substance

(a) Decreases with increase in temperature

(b) Increases with increase in temperature

(c) Calculated by the relation $E = mc^2$

(d) remains same with change in temperature

Q-9. At 700 K, the equilibrium constant K_p for the reaction $2SO_3(g) = 2SO_2(g) + O_2(g)$ and K_p is 14, ($R = 8.314 JK^{-1}mol^{-1}$). the numerical value in moles per liter of K for this reaction at the same temperature will be

(a) $3.09 \times 10^{-7} \text{ mol - litre}$

(b) $5.07 \times 10^{-8} \text{ mol - litre}$

(c) $8.18 \times 10^{-9} \text{ mol - litre}$

(d) $9.24 \times 10^{-10} \text{ mol - litre}$

Q-10. In the reaction: $H^+ + S^{2-} + H^+ \rightleftharpoons H_2S$, when NH_4OH is added, then

(a) S^{2-} is precipitated

(b) No action takes place

(c) Concentration of S^{2-} decreases

(d) Concentration of S^- *increases*

Q-11. At $25^\circ C$ the *pH* value of a solution is 6. The solution is

- (a) basic
- (b) Acidic
- (c) Neutral
- (d) Alkaline

Q-12. The oxidation number of nitrogen in HNO_3 is

- (a) +2
- (b) +3
- (c) +4
- (d) +5

Q-13. The e.m.f. of a galvanic cell with electrode potentials of $\frac{Zn^{+2}}{Zn} = +0.76V$ and that of $\frac{Cu^{+2}}{Cu} = -0.34 V$ is

- (a) -1.1 V
- (b) +1.1 V
- (c) +0.34 V
- (d) +0.76 V

Q-14. Effect of temperature on the reaction rate is given by

- (a) Claisen-Clapeyron equation
- (b) Arrhenius equation
- (c) Gibbs-Helmholtz equation
- (d) Kirchhoff's equation

Q-15. In preparation of sulphuric acid, vanadium pent oxide is used in which of the following reaction?

- (a) $S + O_2 \rightarrow SO_2$
- (b) $2SO_2 + O_2 \rightarrow 2SO_3$
- (c) $SO_2 + H_2O \rightarrow H_2SO_4$
- (d) $N_2 + 3H_2 \rightarrow 2NH_3$

Q-16. Which of the following is baking soda?

- (a) Sodium carbonate
- (b) Sodium Bicarbonate
- (c) Ammonia carbonate
- (d) Potassium bicarbonate

Q-17. Nessler's reagent is

- (a) $KHgI_4$
- (b) K_2HgI_4
- (c) $KHgI_4 + NH_4OH$
- (d) $HgH^+ NH_4OH$

Q-18. In which of the following process, fused sodium hydroxide is electrolyzed for the extraction of sodium?

- (a) Caster's process
- (b) Down's process
- (c) Cyanide process
- (d) Both (a) and (c)

Q-19. When isomers have the same structural formula but differ in the relative arrangement of their atoms or group then they are called

- (a) Mesmer's
- (b) Stereoisomer's
- (c) Optical isomers
- (d) Geometrical isomers

Q-20. Toluene reacts with chromyl chloride and forms

- (a) Chlorotoluene
- (b) Benzaldehyde
- (c) Benzyl chloride
- (d) Benzoic acid

Q-21. Propane is obtained from propane, by which of the following methods?

- (a) Warts reaction

(b) Dehydrogenation

(c) Falkland reaction

(d) Catalytic hydrogenation

Q-22. In Kjeldahl's method, $CuSO_4$ acts as

(a) Oxidizing agent

(b) Reducing agent

(c) Hydrolyzing agent

(d) Catalytic agent

Q-23. The percentage of sulphuric in the organic compound, when 0.2595 g of a sulphuric containing organic compound in a quantitative analysis by carious method yielded 0.35 g of barium sulphate is

(a) 14.52%

(b) 16.52%

(c) 18.52%

(d) 19.52%

Q-24. The second order Bragg's differentiation of X-rays with wavelength 1\AA form a set of parallel planes in a metal occurs at an angle of 60° . the distance between the scattering planes in the crystal is

(a) 1.00\AA

(b) 1.15\AA

(c) 2.00\AA

(d) 2.575\AA

Q-25. Solutions having same osmotic concentration are called

(a) Hypotonic

(b) Hypertonic

(c) Isotonic

(d) Normal

Q-26. If 5.85 g of NaCl (Mol. Wt. 58.5) is dissolved in water and the solution is made up to 0.5 liter, then morality of the solution will be

Visit examrace.com for free study material, doorsteptutor.com for questions with detailed explanations, and "Examrace" YouTube channel for free videos lectures

(a) 0.1

(b) 0.2

(c) 0.4

(d) 1.0

Q-27. In a face centered cubic cell, an atom at the face contributes to the unit cell

(a) 2

(b) 1

(c) 2

(d) 3

Q-28. If 0.5 amp current is passed through acidified silver nitrate solution for 10 minutes. The mass of silver deposited on cathode, is (eq. wt. of silver nitrate=108)

(a) 0.235g

(b) 0.336g

(c) 0.536g

(d) 0.636 g

Q-29. A solution of a salt of a metal was electrolyzed for 150 minutes with a current of 0.15 amperes. The weight of metal deposited was 0.783 gm. The equivalent weight of the metal is

(a) 55.97

(b) 65.97 gm

(c) 75.97 gm

(d) 85.97 gm

Q-30. A gaseous hypothetical chemical equation $2A \rightleftharpoons 4B + C$ is carried out in a closed vessel. The concentration of B is found to increase by $5 \times 10^{-3} \text{ mol L}^{-1}$ in 10 second. The rate of appearance of B is

(a) $5 \times 10^{-4} \text{ mol}^{-1} \text{ sec}^{-1}$

(b) $5 \times 10^{-5} \text{ mol}^{-1} \text{ sec}^{-1}$

(c) $6 \times 10^{-5} \text{ mol}^{-1} \text{ sec}^{-1}$

(d) $4 \times 10^{-4} \text{ mol}^{-1} \text{ sec}^{-1}$

Q-31. The alcohol that is used as a beverage is

(a) Propane

(b) Butanol

(c) Ethanol

(d) Methanol

Q-32. The boiling point of alcohol is higher than that of ether because of

(a) Higher molecular weight

(b) Association of molecule

(c) Presence of hydroxyl group

(d) Hydrogen bonding between the molecules

Q-33. Which of the following compounds is resistant to nucleophilic attack by hydroxyl ions?

(a) Ace amide

(b) Acetonitrile

(c) Dimity ether

(d) Methyl acetate

Q-34. An aldehyde can undergo the aldol condensation having

(a) An aromatic ring

(b) No alpha H atom

(c) At least one alpha H atom

(d) At least one beta H atom

Q-35. When phenol reacts with ammonia in presence of $ZnCl_2$ at $300^\circ C$, it gives

(a) Primary amine

(b) Secondary amine

(c) Tertiary amine

(d) Both (b) and (c)

Q-36. Nitrobenzene on further excessive nitration gives

(a) Trinitrobenzene

(b) m- dinitrobenzene

(c) p-dinitrobenzene

Visit examrace.com for free study material, doorsteptutor.com for questions with detailed explanations, and "Examrace" YouTube channel for free videos lectures

(d) all of these

Q-37. Which of the following statements is correct regarding the preparation of ethers?

- (a) Ethers can be prepared by the action of Grignard reagent
- (b) Ethers can be prepared by action of diazomethane with acetic acid
- (c) Ethers can be prepared by heating allyl halides with dry ferrous sulphide
- (d) Both (b) and (c)

Q-38. Which of the following is formed when n-butyl lithium reacts with tin(II) chloride?

- (a) UB_r
- (b) $EtIb$
- (c) $(C_4H_9)_4Sn$
- (d) $(C_2H_5)_4pb$

Q-40. Which of the following compounds is brown colored?

- (a) $Fe[Fe(CN)_4]$
- (b) $Fe[Fe(CN)_6]$
- (c) $Fe_4[Fe(CN)_6]$
- (d) $K_2Fe[Fe(CN)_6]$

Q-40. The number of β and β^- particles emitted in nuclear reaction ${}_{90}Th^{228} \rightarrow {}_{83}Bi^{212}$ are respectively

- (a) 4,1
- (b) 3,7
- (c) 8,1
- (d) 4,7