CHEMISTRY

BOOKS - MODERN PUBLICATION CHEMISTRY (KANNADA ENGLISH)

MOCK TEST PAPER - 4

Mcqs

1. Benzamide on reaction with $POCl_3$ gives :

A. Aniline

B. Chlorobenzene

C. Benzylamine

D. Benzonitrile

Answer: D

▶ **Watch Video Solution**

2. 200 tons of Fe_2O_3 containing 40% imurities will give iron by reduction with H_2 equal to :

A. 112 tons

B. 84 tons

C. 560 tons

D. 56 tons

Answer: D

3. Total number of e^- that can be accommodated in all orbitals having principal quantum number 3 & azimuthal quantum number 0 is :

A. 2

B. 4

C. 6

D. 8

Answer: A

4. In which of the following disaccarides, the two monosaccharides are joined through their reducing groups ?

A. Maltose

B. Sucrose

C. Lactose

D. All the above

Answer: B

▶ **Watch Video Solution**

5. Isoelectric point of a protein is related to :

A. pH

B. volatility

C. melting point

D. physiological activity.

Answer: A

▶ Watch Video Solution

6. Acetophenone and benzophenone can be distinguished

by :

A. Tollen's test

B. DNP test

C. Iodoform test

D. Schiff's reagent.

Answer: C

> ▶ **Watch Video Solution**

---

7. In a given shell, the screening effect of various orbitals is in the order :

A. $s > p > d > f$

B. $f > d > p > s$

C. $p < d < s < f$

D. $d > f < s > p$

Answer: A

> ▶ **Watch Video Solution**

8. State of hybridization of central atom and number of lone pairs over central atom in XeF_4 are :

A. sp, 0

B. sp^2, 0

C. sp^3, d^2, 2

D. dsp^2, 1

Answer: C

9. The acid formed when iodine reacts with conc. HNO_3 is :

A. Hydroiodic acid

B. Periodic acid

C. Nitrous acid

D. Iodic acid.

Answer: D

▶ **Watch Video Solution**

10. What will happen to equilibrium :

Ice $\Leftrightarrow$ Water

If pressure is applied :

A. More ice will be formed

B. Water will evaporate

C. More water will be formed

D. Equilibrium will be formed.

Answer: C

▶ **Watch Video Solution**

11. When the product of pressure and volume is plotted against pressure for a given amount of gas, the line obtained is :

A. parallel to x - axis

B. parallel to y -axis

C. linear with positive slope

D. linear with negative slope

Answer: A

12. The heat of neutralization of strong base and strong acid is 57.0 kJ. The heat released when 0.7 mole of HNO_3 solution is added to 0.50 mole of NaOH solution is :

A. 57.0kJ

B. 28.5 kJ

C. 11.40 kJ

D. 34.9 kJ

Answer: B

13. On heating salicylic acid with soda lime the product obtained is

A. Benzene

B. Phenol

C. Benzoic acid

D. Toluene

Answer: B

▶ **Watch Video Solution**

14. Pb and Sn are extracted from their chief ores by :

A. carbon reduction and self reduction respectively.

B. electrolysis and self-reduction respectively.

C. self reduction and electrolysis respectively

D. self reduction and carbon reduction respectively.

Answer: D

▶ **Watch Video Solution**

15. The formula of the complex, tris (ethylenediamine) cobalt

(III) sulphate is :

A. $\left[Co(en)_3\right]SO_4$

B. $\left[Co(en)_3\right](SO_4)_3$

C. $\left[Co(en)_3\right]_2(SO_4)_3$

D. $[Co(en)_3]_2SO_4$
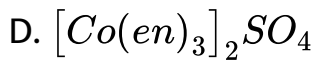
Answer: C

▶ **Watch Video Solution**

16. Which of the following cannot form a carbanion when treated with dil.NaOH?

A. CH_3CH_2CHO

B. $(CH_3)_2CHCHO$

C. $C_6H_5CH_2CHO$

D. $CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - CHO$
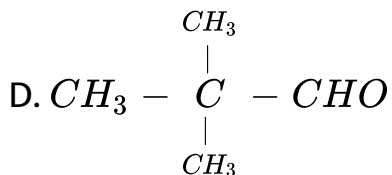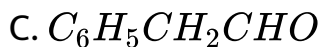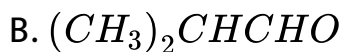
Answer: D

17. Four grams of NaOH solid are dissolved in just enough water to make 1 litre of solution. What is the $[H^+]$ of the solution ?

A. 10^{-2} moles/litre

B. 10^{-1} moles/litre

C. 10^{-12} moles/litre

D. 10^{-13} moles/litre

Answer: D

18. During rusting, iron gets :

A. oxidized
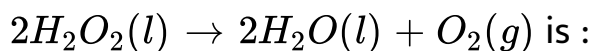
B. reduced

C. evaporated

D. decomposed.

Answer: A

▶ **Watch Video Solution**

19. If

ΔH_f° for H_2O and H_2O_2 are -280 and $-188kJmol^{-1}$

, the enthalpy change for the reaction,

$2H_2O_2(l) \rightarrow 2H_2O(l) + O_2(g)$ is :

A. $-196 kJmol^{-1}$

B. $146 kJmol^{-1}$

C. $-494 kJmol^{-1}$

D. $-98 kJmol^{-1}$

Answer: A

▶ Watch Video Solution

20. Phosphine is not obtaind by the reaction when :

A. white P is heated with NaOH

B. red P is heated with NaOH

C. Ca_3P_2 reacts with water

D. phosphaorus trioxide is boilied with water.

Answer: B

21. The catalyst used in the manufacture of polyethane by Zeigler method is :

    A. Titanium tetrachloride and triphenyl aluminium

    B. Titanium tetrachloride and trimethyl aluminium

    C. Titanium dioxide

    D. Titanium isoperoxide

Answer: B

22. Which of the following is not an example of ionic hydride ?

    A. LiH

    B. CsH

    C. NaH

    D. BeH_2

Answer: D

▶ **Watch Video Solution**

---

23. Which is a by-product in Solvay's process ?

    A. NH_3

B. CO_2

C. $CaCl_2$

D. CaO

Answer: C

▶ **Watch Video Solution**

---

24. By how much will the potential of half cell $M^{2+} \mid M$ change if the solution is diluted 100 times at 298 K ?

A. increases by 2 V

B. decreases by 59 mV

C. increases by 59 mV

D. decreases by 29.5 mV

Answer: B

25. The rms speed of hydrogen in $\sqrt{7}$ times the rms speed of N_2. If T is the temperature of the gas :

    A. $T(H_2) = T(N_2)$

    B. $T(H_2) > T(N_2)$

    C. $T(H_2) < T(N_2)$

    D. $T(H_2) = \sqrt{7}T(N_2)$

Answer: C

26. The number of photons emitted in 10 hours by 60 W sodium lamp ($\lambda = 5893\text{Å}$) is about :

A. 6.4×10^{20}

B. 6.4×10^{24}

C. 3.2×10^{24}

D. 1.4×10^{22}

Answer: B

▶ **Watch Video Solution**

27. The product/s formed when diborane is hydrolysed is/are

:

A. B_2O_3 and H_3BO_3

B. B_2O_3 only

C. H_3BO_3 and H_2

D. H_3BO_3 only

Answer: A

▶ **Watch Video Solution**

---

28. The two enantiomers of a compound have :

A. different direaction of rotation but the same amount

of rotation

B. same direaction of rotation but different amount of

rotation

C. same direaction of rotation as well same amount of rotation

D. different direaction of rotation as well as different amount of rotation.

Answer: A

▶ **Watch Video Solution**

29. How many grams of I_2 are present in a solution which require 40 ml of 0.11 N $Na_2S_2O_3$ to react with it ?

$$S_2O_3^{2-} + I_2 \rightarrow S_4O_6^{2-} + 2I^-$$
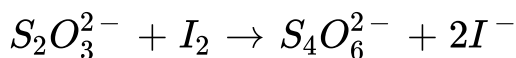
A. 12.7 g

B. 25.4 g

C. 0.558 g

D. 4.25 g

Answer: C

▶ **Watch Video Solution**

---

30. Which of the following mixture solution has $pH \approx 1.0$?

A. 100 mL of M/10 HCl + 100 mL of M/10 NaOH

B. 10 mL of M/10 HCl + 90 mL of M/10 NaOH

C. 10 mL of M/10 HCl + 90 mL of M/10 NaOH

D. 75 mL of M/5HCl + 25 mL of M/5 NaOH`

Answer: D

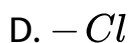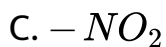**31.** A zinc rod is placed in 250 mL of 1 M $CuSO_4$ solution for such a period that the molarity of Cu^{2+} becomes 0.85 M. The molarity of SO_4^{2-} at this stage is :
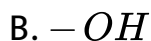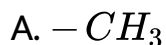
A. 1 M

B. 0.85 M

C. 1.15 M

D. 1.30 M

Answer: A

32. Meta-directing and deactivating group in aromatic electrophilic substitution is :

A. $-CH_3$

B. $-OH$

C. $-NO_2$

D. $-Cl$

Answer: C

▶ Watch Video Solution

33. The pH of normal rainwater is

A. 6.5

B. 7.5

C. 5.6

D. 3.5

Answer: C

▶ Watch Video Solution

34. Which of the following is required in lowest concentration to coagulate a positively charged $Fe(OH)_3$ sol ?

A. $Na_2S_2O_3$
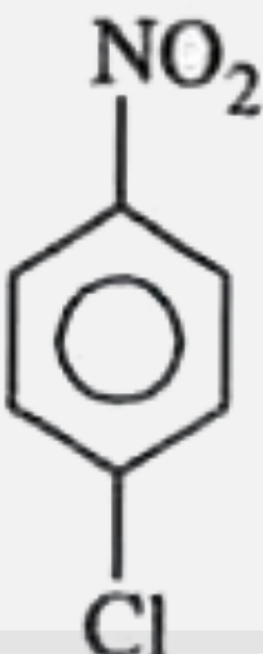
B. $K_3[Fe(CN)_6]$

C. $[K_4[Fe(CN)_6]]$
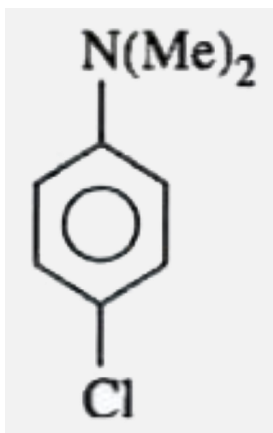
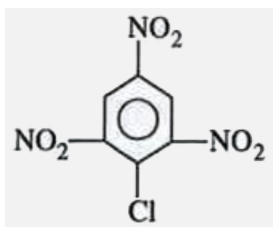D. $Al_2[SO_4]_3$.

Answer: C

▶ **Watch Video Solution**

35. Which derivative of benzen among the following would undergo hydrolysis most readily with aqueous NaOH to give corresponding hydroxy derivative ?

A.

B.

C.

D. All equally.

Answer: C

---

36. A metal crystallises with a face-centred cubic lattice. The adge of the unit cell is 408 pm. The diameter of the metal atom is :

    A. 288 pm

    B. 408 pm

    C. 144 pm

    D. 204 pm

Answer: A

37. The density of a solution prepared by dissolving 120 g of urea (mol mass = 60 u) in 1000 g of water is 1.15 g/mL. The molarity of this solution is :

A. 1.78 M

B. 1.02 M

C. 2.05 M

D. 0.50 M

Answer: C

▶ Watch Video Solution

38. The hydrogen electrode is dipped in a solution of pH 3 at $25°C$. The potential of the cell would be $(2.303RT/F = 0.059V)$:

A. 0.177 V

B. $-0.177V$

C. $0.87V$

D. $0.059V$

Answer: B

▶ **Watch Video Solution**

39. The Van't Hoff factor for 0.1 M $Ba(NO_3)_2$ solution is 2.74. The degree of dissociation is
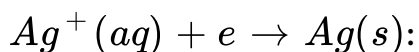
A. 0.74

B. 0.87

C. 0.913

D. 0.667

Answer: B

▶ **Watch Video Solution**

---

40. Consider two standard half cells based on the reaction.

$Ag^+(aq) + e \rightarrow Ag(s)$:

The left half cell contains $AgNO_3$ at 1 M, and the right half

cell initially had the same conc. Of $AgNO_3$, but just enough

$NaCl_{aq}$ has been added to completely precipitate the

$Ag^+_{(aq)}$ as $AgCl_{(s)}$. If cell emf is 0.295 V, the K_{sp} of AgCl is approximetely :

A. 1×10^{-12}

B. 6.60×10^{-12}

C. 1×10^{-10}

D. 6.60×10^{-10}

Answer: C

▶ **Watch Video Solution**

41. The half- life for decay of ^{14}C by β-emission is 5730 years. The fraction of ^{14}C decays, in a sample that is 22.920 years old, would be :
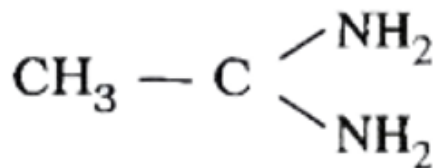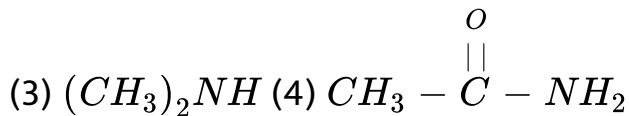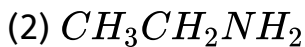
A. $1/8$

B. $1/16$

C. $7/8$

D. $15/16$

Answer: D

▶ **Watch Video Solution**

42. The correct order of basicities of the following compounds is :

$$CH_3 - C \underset{NH_2}{\overset{NH_2}{\diagdown}}$$

(1)   1

(2) $CH_3CH_2NH_2$

(3) $(CH_3)_2NH$ (4) $CH_3 - \overset{\overset{O}{||}}{C} - NH_2$

A. $2 > 1 > 3 > 4$

B. $1 > 3 > 2 > 4$

C. $3 > 1 > 2 > 4$

D. $1 > 2 > 3 > 4$

Answer: B

▶ Watch Video Solution

43. The solubility products of $AgCl$ and Ag_2CrO_4 are 1.5×10^{-10} and 9×10^{-12} respectively. Which of the following statement is correct ?

A. AgCl is more soluble than $AgCrO_4$.

B. Ag_2CrO_4 is more soluble than $AgCl$.

C. Ag_2CrO_4 is precipitated before AgCl starts preecipitating.

D. Both AgCl and Ag_2CrO_4 have the same solubility.

Answer: B

▶ **Watch Video Solution**

---

44. Which of the following is used to produce smoke screens ?

A. calcium phosphide

B. zinc sulphide

C. sodium carbonate

D. zinc phosphate

Answer: B

▶ **Watch Video Solution**

45. In the adsorption of a gas on solid, Freundlich isotherm is obeyed. The slope of the plot is zero. The extent of adsorption is

   A. directly proportional to the pressure of the gas

   B. inversely proportional to the pressure of the gas

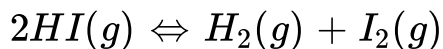   C. directly proportional to the square root of the pressure of the gas

D. independent of the pressure of the gas.

Answer: D

> ▶ Watch Video Solution

---

46. If $\Delta G°$ (HI, g) is 1.7 kJ, what is the equilibrium constant

at $20°C$ for

$$2HI(g) \Leftrightarrow H_2(g) + I_2(g)$$

A. 24

B. 3.9

C. 2

D. 0.5

Answer: B

47. Which of the following statements are not correct ?

(I) PCl_5 is known but PBr_3 is not known.

(II) In S_2F_{10}, sulphur atoms have octahedral geometry.

(III) SF_4 is much less reactive than SF_6.

(IV) Bleaching action of chlorine is permanent because it bleaches by reduction.

A. I, III, IV

B. I, IV

C. II, III, IV

D. II, IV

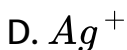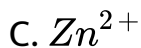**Answer: A**

48. Chlorine shows bleaching action in :

A. dry condition

B. presence of HCl only

C. moist condition

D. none of the above.

Answer: C

49. Which of the following ions will give coloured solution ?

A. Cu^+

B. Fe^{2+}

C. Zn^{2+}

D. Ag^+

Answer: B

▶ **Watch Video Solution**

50. Number of electrons transferred in each case when $KMnO_4$ acts as an oxidising agent to give $MnO_2, Mn^{2+}, Mn_2(O)_3$ and MnO_4^{2-} respectively are :

A. 3, 5, 4 and 1

B. 4, 3, 1 and 5

C. 1, 3 , 4 and 5

D. 5, 4, 3 and 1

Answer: A

51. Two reactions of the same order have equal preexponential factors but their activation energies differ by 24.9 kJ mol^{-1}.The ratio of their rate constants at $27°C$ (R = $8.3 JK^{-1}mol^{-1}$) is :

A. 3.246

B. 2.20×10^{14}

C. 2.20×10^4

D. 1.86×10^4

Answer: C

---

52. The complex $[CoF_6]^{4-}$ is :
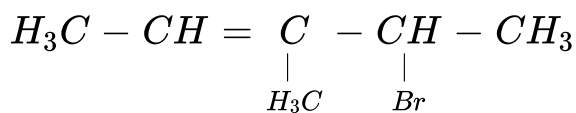
A. outer orbital and diamagnetic

B. inner orbital and paramagnetic

C. outer orbital and paramagnetic

D. inner orbital and diamagnetic

Answer: C

53. The correct IUPAC name of the following compound is :

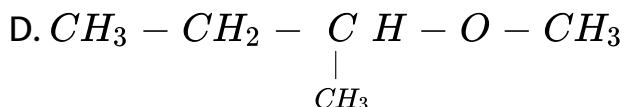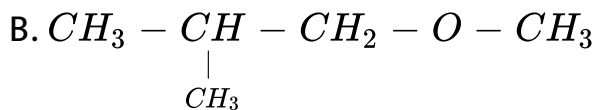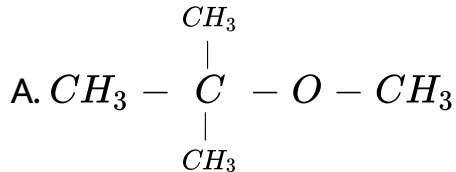$$H_3C - CH = \underset{\underset{H_3C}{|}}{C} - \underset{\underset{Br}{|}}{CH} - CH_3$$

A. 4 - bromo - 3- methylpent -2 - ene

B. 2- bromo -3- methylpent-4 - ene

C. 3 - methyl -4- bromopent -2-ene

D. 3- methyl -2- bromopent -4 - ene

Answer: A

▶ Watch Video Solution

54. Among the following ethers, which one will produce

methyl alcohol on treatment with hot concentrated HI

A.
$$CH_3 - \underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}} - O - CH_3$$

B.
$$CH_3 - \underset{\underset{CH_3}{|}}{CH} - CH_2 - O - CH_3$$

C. $CH_3CH_2CH_2CH_2OCH_3$

D.
$$CH_3 - CH_2 - \underset{\underset{CH_3}{|}}{C\,H} - O - CH_3$$

Answer: A

▶ **Watch Video Solution**

55. One mole of alkene on ozonolysis gives 2 moles of butanone. The alkene is :

A. 3, 4-dimethylhex - 2- ene

B. 2, 3 - dimetylhex - 3- ene

C. 3, 4 -dimethylhex - 3- ene

D. 2, 3- dimethylhex - 2- ene

Answer: B

▶ Watch Video Solution

56. Which of the following compounds will not undergo Friedal-Craft's reaction easily :

A. Nitrobenzene

B. Toluene

C. Cumene

D. Xylene

Answer: A

57. Anaemia is caused by the deficiency of vitamin :

A. B_6

B. B_1

C. B_2

D. B_{12}

Answer: D

58. Which one of the following is not a condensation polymer ?

    A. Melamine

    B. Glyptal

    C. Dacron

    D. Neoprene

Answer: D

  ▶ **Watch Video Solution**

---

59. Which one of the following is used for treatment of syphilis ?

A. Iproniazid

B. Salvarsan

C. Chloramphenicol

D. Terpincol

Answer: B

▶ Watch Video Solution