CHEMISTRY

41) Which halogen element gives Halous acid type of oxoacid?

(A) F

(B) Br

(C) Cl

(D) I

42) Which is used for manufacture of steel?

(A) Dihydrogen

(B) Dinitrogen

(C) Dioxygen

(D) Dichlorine

43) If atomic number of element is 26, then magnetic moment is _____ BM of its divalent aqueous ion?

(A) 1.73

(B) 3.87

(C) 2.83

(D) 4.90

44) Which product is obtained during reaction of MnO_4^- with I^- in faintly alkaline condition?

(A) I_2

(B) IO_3^-

(C) IO^-

(D) IO_4^-

(Space for Rough Work)

$\sqrt{(2c+2)}$

45) Which is not act as ligand?

(A) NO

(B) $H_2NCH_2CH_2NH_2$

(C) NH_4^+

(D) CO

46) Which is correct formula for pentaaminecarbonatocobalt (III) chloride coordination compound?

(A) $[Co(NH_3)_5(CO_3)]Cl$

(B) $[Co(NH_3)_5(CO_2)]Cl$

(C) $[Co(NH_3)_5(CO_3)]Cl_2$

(D) $[Co(NH_2)_5(CO_3)]Cl$

47) Which type of Isomerism in isomers $[Co(NH_3)_5(SO_4)]Br$ and $[Co(NH_3)_5Br]SO_4$?

(A) Linkage

(B) Ionisation

(C) Coordination

(D) Solvate

48) $CH_3CH=CHC(Cl)(CH_3)_2$ is which type of halide based on position of –Cl?

(A) Allylic

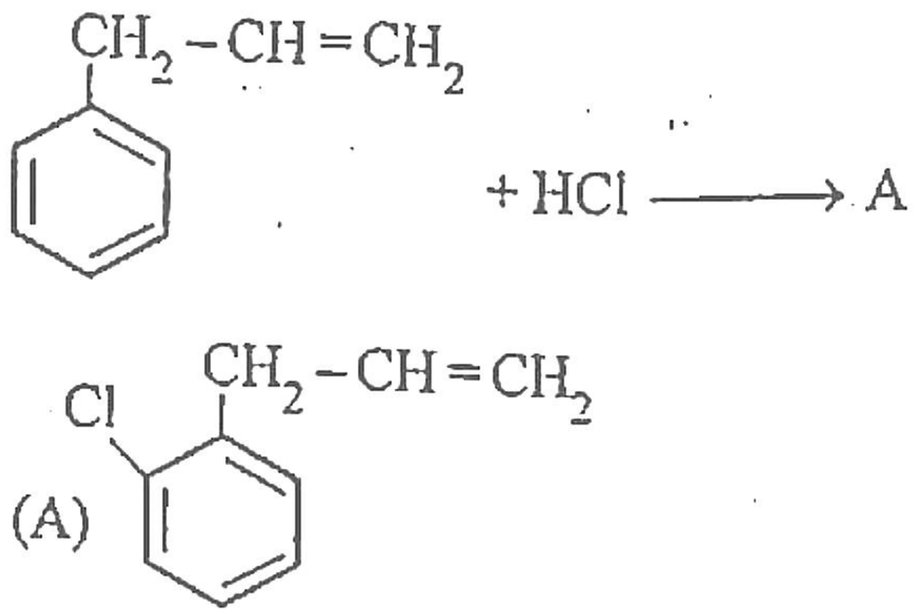
(B) Secondary

(C) Vinylic

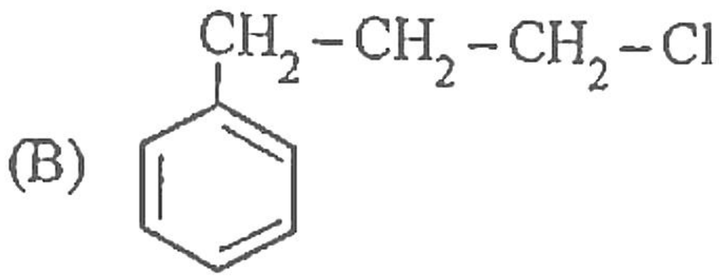
(D) Aryl

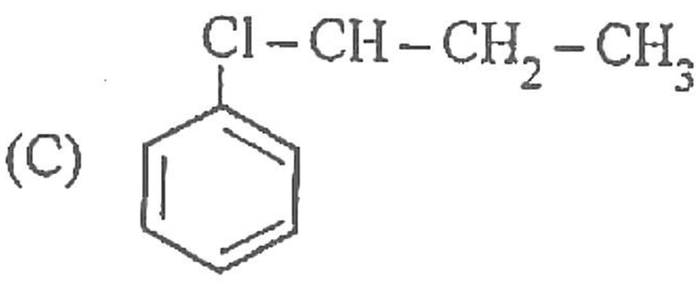
(Space for Rough Work)

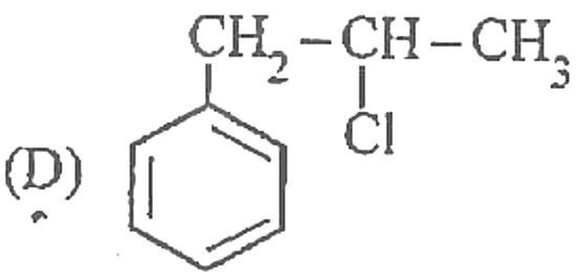
49) What is A in following reaction?



(A)

(B) 

(C) 

(D) 

50) Which would undergo S_N1 reaction faster from following?

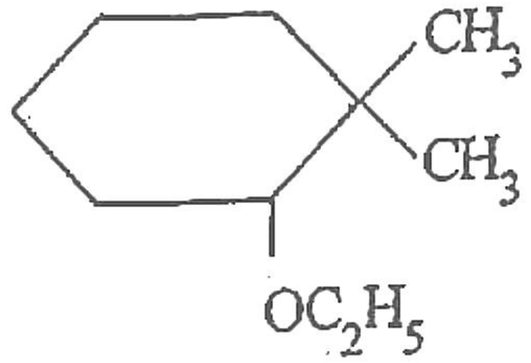
(A) Chloromethane

(B) 2-bromo-3-methylbutane

(C) 2-chloro-3-methylbutane

(D) 2-bromo-2-methylpropane

(Space for Rough Work)

(51) From following, IUPAC name of compound  is?

(A) 2-ethoxy-1, 1-dimethyl cyclohexane

(B) 5-ethoxy-6, 6-dimethyl cyclohexane

(C) 1-ethoxy-2, 2-dimethyl cyclohexane

(D) 1-ethoxy-6, 6-dimethyl cyclohexane

52) Which Grignard reagent gives 2-methylpropan-1-ol with reaction with methanal?

(A) $CH_3-CH_2-CH_2-Mg-X$

(B) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-Mg-X$

(C) $CH_3-CH=CH-Mg-X$

(D) $CH_3-\underset{\displaystyle CH_3}{\underset{|}{CH}}-CH_2-Mg-X$

53) Which compound having maximum value of pKa from following?

(A) $o-O_2N-C_6H_4-OH$

(B) $p-O_2N-C_6H_4-OH$

(C) $m-O_2N-C_6H_4-OH$

(D) C_6H_5OH

(Space for Rough Work)

54) Which reagent is used to convert Allyl alcohol to propenal?

(A) PCC

(B) O_3/H_2O - Zn (Powder)

(C) DIBAL-H

(D) All above

55) Which compound give Cannizzaro reaction from following?

(A) CH_3CHO

(B) CH_2ClCHO

(C) CCl_3CHO

(D) $CHCl_2CHO$

56) Which compound having maximum acidic strength of the following?

(A) 4-methoxy benzoic acid

(B) 2-methoxy benzoic acid

(C) Benzoic acid

(D) 4-nitrobenzoic acid

57) 2° - Amine is obtained by reduction of which compound?

(A) Nitrile

(B) Nitro

(C) Isonitrile

(D) Amide

(Space for Rough Work)

58) Hinsberg's reagent do not react with which amine?

(A) Only 1° - amine

(B) Only 3° - amine

(C) Only 2° - amine

(D) 1° and 2° - amine

59) Which product is obtained by nitration of aniline?

(A) o-nitroaniline

(B) m-nitroaniline

(C) p-nitroaniline

(D) All above

60) Which reaction prove that all the six carbon atoms are linked in a straight chain in glucose?

(A) Heat with HI

(B) Reaction with Br_2

(C) Reaction with NH_2OH

(D) Reaction with HCN

(Space for Rough Work)

61) Which α-amino acid is not optical isomer?

(A) Alanine
(B) Glycine
(C) Lysine
(D) Leucine

62) In DNA, which bases is not present of following?

(A) Thymine
(B) Guanine
(C) Uracil
(D) Adenine

63) Which is network solid from following?

(A) SiC
(B) $I_{2(s)}$
(C) $CO_{2(s)}$
(D) $H_2O_{(s)}$

64) The edge lengths of the unit cells in terms of the radius r of spheres constitutin fcc, bcc and simple cubic unit cell are respectively _____.

(A) $\frac{4r}{\sqrt{3}}, 2\sqrt{2}r, 2r$
(B) $2r, 2\sqrt{2}r, \frac{4r}{\sqrt{3}}$
(C) $2r, \frac{4r}{\sqrt{3}}, 2\sqrt{2}r$
(D) $2\sqrt{2}r, \frac{4r}{\sqrt{3}}, 2r$

(Space for Rough Work)

65) Atoms of element X form hcp lattice and those of the element Y occupy 75% of tetrahedral voids. What is the formula of the compound formed by elements X and Y?

(A) X_4Y_3 (B) X_3Y_4

(C) X_2Y_3 (D) X_3Y_2

66) Which of the following aqueous solutions should have the minimum boiling point?

(A) 0.1 M Urea

(B) 0.1 M K_2SO_4

(C) 0.1 M NaCl

(D) 0.1 M $FeCl_3$

67) 3.0 gram ethanoic acid in 50 gram benzene having _____ molality?

(Atomic weights : H = 1, C = 12, O = 16).

(A) 0.1 (B) 1.0

(C) 0.6 (D) 0.06

68) Which method is used to remove salts from sea water?

(A) Hydraulic washing

(B) Leaching

(C) Reverse osmosis

(D) Froth Floatation

(Space for Rough Work)

69) Which products are obtained during electrolysis of aqueous solution of sodium chloride?

(A) $NaOH, O_2$ and H_2

(B) $NaOH, Na$ and H_2

(C) $NaOH, Cl_2$ and H_2

(D) Na, Cl_2 and H_2

70) Using the data given below find out the strongest reducing agent?

$E^{o}_{Cr_2O_7^{2-}/Cr^{3+}} = 1.33\,V$ $\quad$ $E^{o}_{Cl_2/Cl^-} = 1.36\,V$

$E^{o}_{MnO_4^-/Mn^{2+}} = 1.51\,V$ $\quad$ $E^{o}_{Cr^{3+}/Cr} = -0.74\,V$

(A) Cl^- $\quad$ (B) Cr^{3+}

(C) Cr $\quad$ (D) Mn^{2+}

71) Which is symbolic representation for following cell reaction, $Mg_{(s)} + Cl_{2(g)} \rightarrow Mg^{2+}_{(aq)} + 2Cl^-_{(aq)}$.

(A) $Mg\,|Mg^{2+}_{(aq)}(1M)||Cl^-_{(aq)}(1M)|Cl_{2(g)}(1bar)|Pt$

(B) $Pt\,|Cl^-_{(aq)}(1M)|Cl_{2(g)}(1bar)||\,Mg^{2+}_{(aq)}(1M)|Mg$

(C) $Mg\,|Mg^{2+}_{(aq)}(1M)||Cl_{2(g)}(1bar)|Cl^-_{(aq)}(1M)|Pt$

(D) $Pt\,|Cl_{2(g)}(1bar)|Cl^-_{(aq)}(1M)||Mg^{2+}_{(aq)}(1M)|Mg$

(Space for Rough Work)

No.

72) For a reaction, $K = 4.5 \times 10^{-4}\ L\ mol^{-1}\ s^{-1}$. What is order of reaction?

(A) Zero

(B) Second

(C) First

(D) Third

73) For first order reaction, the value of slope for graph of $\log \frac{[R]_0}{[R]} \rightarrow t$ is _____.

(A) $\frac{K}{2.303}$

(B) $\frac{2.303}{K}$

(C) $-K$

(D) $-\frac{K}{2.303}$

74) The rate constant for a first order reaction is $60\ s^{-1}$. How much second will it take to reduce the initial concentration of the reactant to its $\frac{1}{16}$ th value?

(A) 2.3×10^{-2}

(B) 9.5×10^{-2}

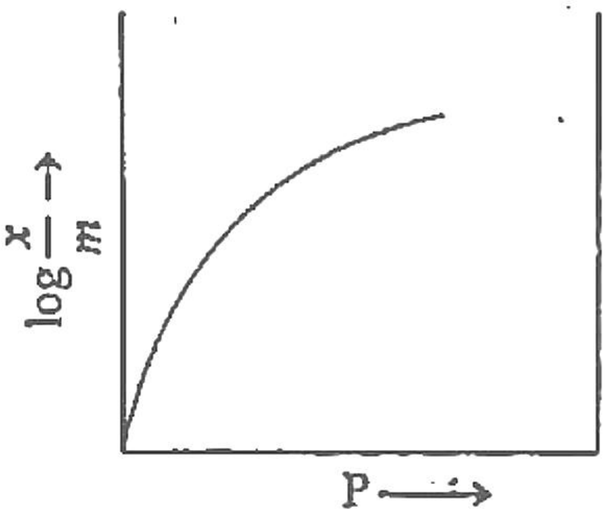
(C) 4.6×10^{-2}

(D) 6.9×10^{-2}

(Space for Rough Work)

75) Which is Freundlich Adsorption isotherm?

(A)



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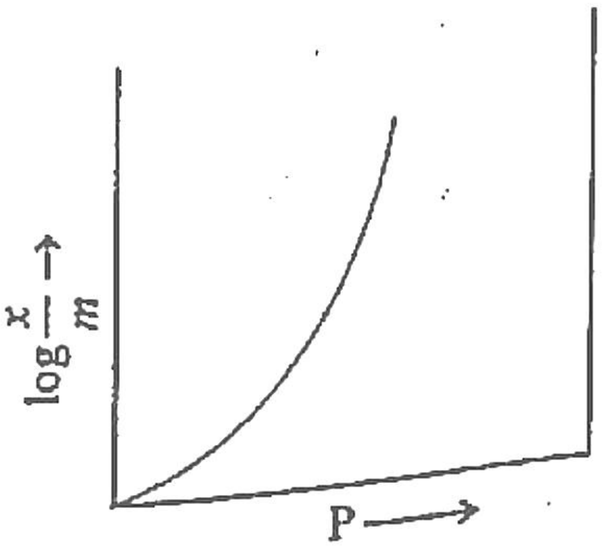

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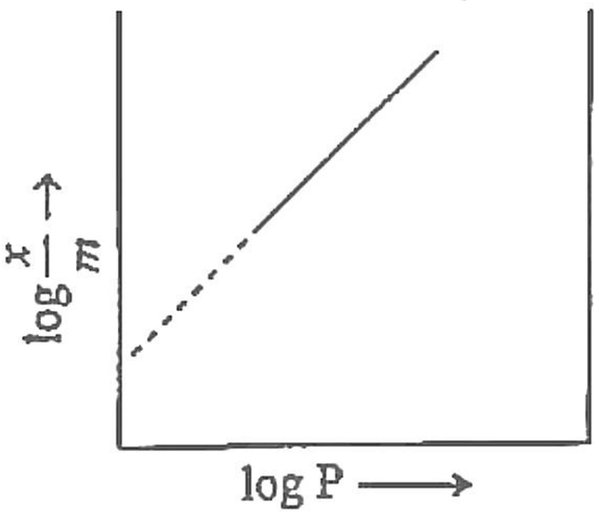

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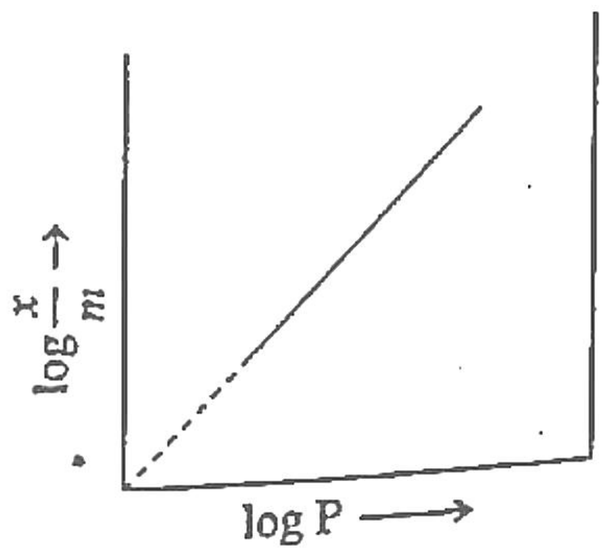

76) Which method is used to prepare colloids?

$As_2O_3 + 3H_2S \rightarrow As_2S_3(sol) + 3H_2O$

(A) Oxidation

(B) Hydrolysis

(C) Reduction

(D) Double decomposition

(Space for Rough Work)

77) Which of the following ions will have maximum flocculating power for coagulation of As_2S_3 sol?

(A) Na^+ (B) Al^{3+}

(C) Mg^{2+} (D) Ba^{2+}

78) Which metals are purified by vapour phase refining for following?

(A) Ni, Fe (B) Zr, Sn

(C) Ag, Ni (D) Ni, Zr

79) Copper matte is a mixture of which substances?

(A) $Cu_2O + FeS$ (B) $Cu_2S + FeO$

(C) $Cu_2S + FeS$ (D) $FeO + CuO$

80) Very pure dinitrogen can be obtained by the thermal decomposition of which substance?

(A) Sodium azide

(B) Ammonium dichromate

(C) Ammonium nitrite

(D) Barium nitrite

(Space for Rough Work)