Top 200 Questions

KCET

(CHEMISTRY)

1. Number of significant figures in 10.3406g is
(1) 4 (2) 2
(3) 3 (4) 6

2. 74.5g of a metallic chloride contains 35.5g of chlorine. The exact atomic weight of the metal is x and its specific heat is 0.0406Cal/g-°C. The value of x is
(1) 150 (2) 157.6
(3) 156 (4) 155.02

3. Number of atoms present in 0.1mole of a diatomic gas is
(1) $6.022 \cdot 10^{22}$ (2) $1.2044 \cdot 10^{23}$
(3) $2.4088 \cdot 10^{22}$ (4) $2.4088 \cdot 10^{23}$

4. Molarity of a solution obtained by mixing 500ml of 0.5M HCl with 200ml of 1M HCI will be
(1) 0.64 M (2) 0.54 M
(3) 0.50 M (4) 0.45 M

5. The percentage of NaOH by weight in a 1.2 molar NaOH solution is 4.5%, density of the solution will be
(1) 2.3 g/ml (2) 1.6 g/ml
(3) 1.066 g/ml (4) 1.25 g/ml

6. When 22.4L of $H_2(g)$ is mixed with 11.2L of $Cl_2(g)$ each at STP, the moles of HCI(g) formed is equal to
(1) 2 mole of HCl (2) 0.5 mol of HCl
(3) 1.5 mole of HCl (4) 1.0 mole of HCl

7. Mole fraction of solute in a 1 molal aqueous solution will be
(1) 0.0275 (2) 0.0177
(3) 0.0671 (4) 0.52

8. 100ml of 0.5M H_2SO_4 solution is neutralized by 50ml of 0.1M NaOH and x ml of 0.1M $Ca(OH)_2$. The value of x is
(1) 200 ml (2) 370 ml
(3) 475 ml (4) 405 ml

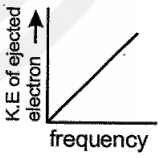
9. Nitrogen forms two oxides N_2O_3 and N_2O_5. Which law can be proved by the weights of N and O?
(1) Constant Composition
(2) Multiple Proportions
(3) Reciprocal Proportions
(4) Conservation of mass

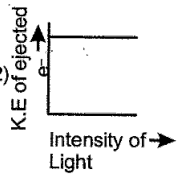
10. x mole atoms of nitrogen contains 3.01×10^{23} atoms. The value of x is
(1) 0.05 (2) 0.5
(3) 1.5 (4) 1.0

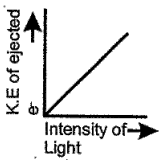
11. Specific charge on electron is
(1) 5.27 C/kg (2) 5.27 e.s.u./g
(3) 1.758×10^{11} C/g (4) 5.27×10^{17} e.s.u/g

12. Energy of photon having wavelength of 0.5Å would be
(1) 3.98×10^{-15} J (2) 5.75×10^{-16} J
(3) 9×10^{-16} J (4) 5.25×10^{-18} J

13. Which one is correct regarding photoelectric effect?

(1) 

(2) 

(3) 

(4) All of these

14. Energy of an electron in 5th orbit of H-atom is
(1) –13.6 eV (2) –5.40 eV
(3) –0.54 eV (4) –0.85 eV

15. According to Bohr's atomic theory, which of the following is correct?
(1) Time period $\propto \frac{n^4}{Z^2}$
(2) K.E. of $e^- \propto \frac{Z^2}{n^2}$

(3) T.E $\propto \frac{Z}{n}$

(4) Frequency of revolution $\alpha \frac{Z^2}{n^4}$

16. Intensity of spectral lines depends upon

(1) Frequency of photon emitted

(2) Wavelength of photon absorbed.

(3) Frequency of photon absorbed.

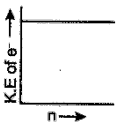
(4) Number of photons of same frequency absorbed or emitted.

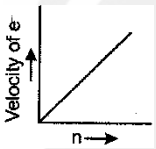
17. An electron in H-atom jumps from n^{th} orbit to 3rd orbit. If three spectral lines are possible for the transition, the value of n is

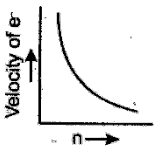
(1) 4 (2) 5

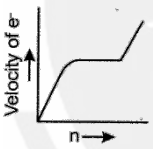
(3) 7 (4) 6

18. Which of the following is correct?

(1) 

(2) 

(3) 

(4) 

19. Uncertainty in position of an electron is 'x' m and uncertainty in its velocity is 5.72×10^7 m / s then the value of x will be

(1) 1.012×10^{-10} (2) 1.012×10^{-12}

(3) 2.052×10^{-8} (4) 3.012×10^{-12}

20. Correct relationship regarding de Broglie hypothesis

(1) $\lambda = \frac{h}{mv}$ (2) $\lambda = \frac{h}{\sqrt{2m(K.E)}}$

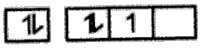
(3) $\lambda = \frac{h}{p}$ (4) All of these

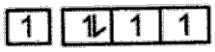
21. Correct set of 4 quantum numbers of a 4d electron is

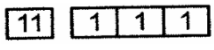
(1) 4, 2,1, +1/2 (2) 4, 3,2, +1/2

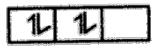
(3) 4, 3,–2, +1/2 (4) 4, 1,1, +1/2

22. The orbital diagram in which Hund's rule and Aufbau principle is violated

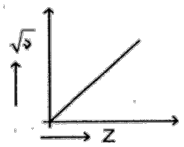
(1) 

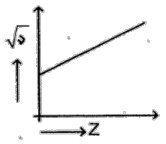
(2) 

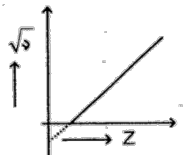
(3) 

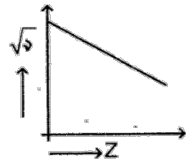
(4) 

23. $\sqrt{\tau}$ = a(z – b) is a Moseley equation where τ is the frequency of X-ray produced. Z = atomic number and a, b = constant, $\sqrt{\tau}$ Graph of Moseley equation is

(1) 

(2) 

(3) 

(4) 

24. F^-, Na^+, Mg^{+2} are isoelectronic species. Which one is correct?

(1) All have same size

(2) Mg^{+2} have minimum effective nuclear charge

(3) F have smallest size

(4) Mg^{+2} have maximum effective nuclear charge

25. Nb belongs to 5th period while Ta belongs to 6th period. Which one is correct?

(1) Size of Ta is greater than the size of Nb

(2) Size of Nb is greater than the size of Ta

(3) Both have almost equal size

(4) Nb belongs to d-block element while Ta belongs to f-block element

26. Which one is not endothermic reaction?

(1) $O^- + e^- \rightarrow O^{-2}$ (2) $O^+ \rightarrow O^{+2} + e$

(3) $O + e^- \rightarrow O^-$ (4) $O \rightarrow O^+ + e^-$

27. Some neutral atoms have electronic configuration as follows:
A = $1s^2\ 2s^2\ 2p^1$, B = $1s^2\ 2s^2$, C = $1s^2\ 2s^2\ 2p^6\ 3s^1$
D = $1s^2\ 2s^2\ 2p^3$.
In which of these electronic configuration would you expect to have lowest 1st IP?

(1) A (2) B

(3) C (4) D

28. Order of 1st IE of elements of second period is

(1) Li < Be < B < C < N < O < F

(2) Li < B < Be < C < O < N < F

(3) Be < Li < B < C < N < O < F

(4) Be < Li < C < B < N < F < O

29. In Pauling's scale the electronegativity values of two elements A and B are found to be 3.0 and 0.7 respectively. Calculate percentage ionic character of compound formed.

(1) 55.3% (2) 60%
(3) 75% (4) 20.2%

30. The electronegativity of the following elements increases in the order

(1) Si < P < C < N (2) N < Si < C < P
(3) P < Si < N < C (4) C < N < Si < P

31. Find the group and period in periodic table of element having atomic number 29

(1) 11, 3 (2) 12, 4
(3) 11, 4 (4) 12, 3

32. Effective nuclear charge is increased on going form

(1) Li to Na (2) Na to K
(3) K to Rb (4) Rb to Cs

33. Select the van der Waal's radii that is the largest

(1) Ne (2) Ar
(3) Kr (4) Rn

34. Which has greater lattice energy?

(1) KBr
(2) LiF
(3) MgO
(4) All have same lattice energy

35. I_3^- have following hybridisation

(1) sp^3 (2) sp^3d
(3) sp^3d^2 (4) sp^2

36. Hybridisation of Xe in XeO2F2 is

(1) sp^3 (2) sp^3d
(3) sp^3d^2 (4) sp

37. The correct order for bond length in N_2 CN, C ≡ C is

(1) C ≡ C > C ≡ N > N ≡ N
(2) N ≡ N > C ≡ N > C ≡ C
(3) N ≡ N > C ≡ C > C ≡ N
(4) C ≡ N > N ≡ N > C ≡ C

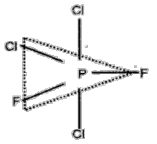
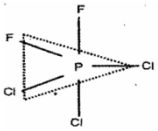
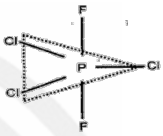
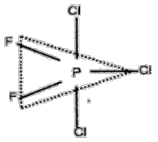
38. The ONO bond angle is maximum in

(1) NO_2^-
(2) NO_3^-
(3) NO_2
(4) All have same bond angle

39. Which has zero dipole moment?

(1) $CFCl_3$ (2) SiF_4
(3) ClF (4) PCl_3

40. The structure of PCl_3F_2 is

(1) 
(2) 
(3) 
(4) 

41. Total number of lone pair and bond pair of electron of Xe in $XeOF_4$ are

(1) 1, 5 (2) 1, 6
(3) 2, 6 (4) 2, 5

42. The species which does not show paramagnetism is

(1) O_2^+ (2) O_2
(3) H_2^+ (4) O_2^{-2}

43. Which of the following is correct?

(1) O_2^{2-} is more stable than O_2^{2+}
(2) N_2^{2-} is more stable than N_2^+
(3) O_2^+ is more stable then O_2^-
(4) O_2 is more stable than O_2^{2+}

44. Which one of the following combination is not allowed in LCAO method for the formation of a molecular orbital? (Consider Z-axis as the molecular axis).

(1) $s + p_z$ (2) $p_x + p_x$
(3) $p_z + p_z$ (4) $s + p_x$

45. Find the set of intensive properties from the following statements.

(1) Vapour pressure, specific heat and Dielectric constant.
(2) E^0_{cell} melting point and viscosity

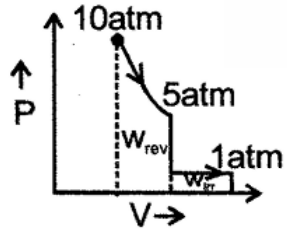
(3) Refractive index, surface tension and molarity
(4) All of these

46. 2 mole of an ideal gas at 27°C expands isothermally and reversibly from a volume of 4L to 40L. The work done (in kJ) by the gas is -
(1) -28.72 (2) -11.48
(3) -5.73 (4) - 4.98

47. Find the incorrect from the following:
(1) $PCl_5(g) \rightarrow PCl_3(g) + Cl_2(g) (\Delta H = \Delta E)$
(2) $2HI(g) \rightarrow H_2(g) + l_2(g) (\Delta H = \Delta E)$
(3) $C(s) \rightarrow H_2O(g) \rightarrow CO(g) + H_2(g) (\Delta H > \Delta E)$
(4) All of these

48. Which of the following is correct option for free expansion of an ideal gas under adiabatic condition?
(1) q = 0, ⊗T = 0 w ≠ 0
(2) q = 0, ⊗T = 0 w = 0
(3) q ≠ 0, ⊗T ≠ 0, w ≠ 0
(4) q = 0, ⊗T ≠ 0, w = 0

49. A 1.0 mol of ideal gas, initially at 10 atm and 300K is allowed to expand isothermally to 1.0 atm. Calculate the net work done by the system. (P-V diagram is given)



(1) –1247.1 J (2) –3741.3 J
(3) 1247.1 J (4) 3741.3 J

50. In which of the following reaction maximum amount of heat is evolved?
(1) HNO_3(aq) + NaOH (aq)
(2) CH_3COOH (aq) + NaOH (aq)
(3) HCl (aq) + NH_4OH (aq)
(4) HF (aq) + NaOH (aq)

51. If heat of formation (⊗$_f$H°) of C_2H_4 and C_2H_6 are x_1 and x_2 kCal mol^{-1} respectively, then heat of hydrogenation of C_2H_4 is
(1) $x_1 + x_2$ (2) $x_1 - x_2$
(3) $x_2 - x_1$ (4) $x_1 + 2x_2$

52. Calculate the C–H bond energy if heat of atomization of C_2H_6 is x kJ
(1) $\frac{x}{2}$ (2) $\frac{x}{6}$
(3) $\frac{x}{3}$ (4) Data insufficient

53. Entropy decreases during
(1) Boiling of egg
(2) Rusting of iron
(3) Crystallisation of sucrose from solution
(4) (1) and (3)

54. Find the correct statement about surface tension
(1) Sl unit is Nm^{-1}
(2) The increase of temperature tends to decrease the surface tension
(3) Work done per unit area is the surface energy
(4) All of these

55. Select the incorrect statement
(1) Reversible process is very slow.
(2) Magnitude of expansion work done in reversible process is more than irreversible process.
(3) Both process (Reversible and irreversible) may be attained in equilibrium
(4) Irreversible process are imaginary process.

56. K_p for the reaction, $N_2 + 3H_2 \rightleftharpoons 2NH_3$ is 1.645 × 10^{-4} atm^{-2} at 400°C. What will be the K_p at 500°C? Heat of reaction in the temperature range is –25.14 kcal.
(1) Greater than 1.645 × 10^{-4} atm^{-2}
(2) Smaller than 1.645 × 10^{-4} atm^{-2}
(3) Equal to 1.645 × 10^{-4} atm^{-2}
(4) Greater than or equal to 1.645 × 10^{-4} atm^{-2}

57. For the reaction $PCl_5 \rightleftharpoons PCl_3 + Cl_2$ where P is the pressure at equilibrium, a is degree of dissociation and K_p is equilibrium constant, the relation between a and K_p is-
(1) $\alpha = \sqrt{\frac{K_p^2}{P + K_p}}$ (2) $\alpha = \sqrt{\frac{K_p}{P + K_p}}$

(3) $\alpha = \sqrt{\frac{K_P + P}{K_P}}$ (4) $\alpha = \frac{P}{K_P}$

58. For the following reaction, $2SO_3 \rightleftharpoons 2SO_2 + O_2$ if the observed vapour density of the mixture at equilibrium is 30 then find the degree of dissociation of SO_3.
(1) 0.66 (2) 0.33
(3) 0.44 (4) 0.5

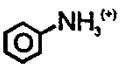
59. In the dissociation of HI 20% is dissociated at equilibrium.
Calculate K_P for $HI(g) \rightleftharpoons \frac{1}{2}H_2(g) + \frac{1}{2}I_2(g)$
(1) 0.25 (2) 0.3
(3) 0.4 (4) 0.125

60. $A \rightarrow 2B + C$ $K_C = 1.987 \times 10^{-8}$ mole^2 litre^{-2} then at equilibrium the reaction mixture contains greater number moles of
(1) A
(2) B
(3) C
(4) Equal mole of A and B

61. At a certain temperature $K_C = 1.8$ litre^2 mole^{-2} for $N_2 + 3H_2 \rightleftharpoons 2NH_3$. How many moles of NH3 must be placed in one litre vessel in order to get 6 mole litre^{-1} H_2 at equilibrium?
(1) 27.88 mole (2) 40 mole
(3) 31.88 mole (4) 80 mole

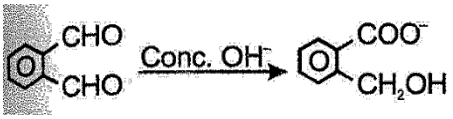
62. $NH_4HS(s) \rightleftharpoons NH_3(g) + H_2S(g)$. At a certain temperature $K_p = 1.44$ atm^2. If the partial pressure of NH_3 at a certain extent is 1.08 atm. Then the reaction will proceed
(1) Towards forward direction
(2) Towards backward direction
(3) Will be at equilibrium
(4) Data insufficient

63. Which one is the conjugate base of HSO_4^- ?
(1) H_2SO_4 (2) HSO_3
(3) SO_3 (4) SO_4^{2-}

64. Which of the following can act as lewis base?
(1) $H_3O^{(+)}$ (2) 
(3) $CH_3CH_2CH_2OH$ (4) SF_6

65. Which one has the highest basic strength?
(1) CH_3^- (2) NH_2^-
(3) HCO_3^- (4) NO_3^-

66. If we increase the temperature, then the pH value of pure water
(1) Increases
(2) Decreases
(3) Remains same
(4) Increases and then decreases

67. 
The above reaction is an example of
(1) Acid base reaction
(2) Disproportionation reaction
(3) Oxidation reaction only
(4) Decomposition reaction

68. $As + x\,HNO_3 \rightarrow H_3AsO_4 + yNO_2 + H_2O$ x, y can be -
(1) 6, 6 (2) 2, 2
(3) 4, 4 (4) 5, 5

69. Equivalent mass of FeC_2O_4 in the reaction $FeC_2O_4 \xrightarrow{H^+} + CO_2$, if Molar mass of FeC_2O_4 is M
(1) $\frac{M}{1}$ (2) $\frac{M}{3}$
(3) $\frac{M}{2}$ (4) $\frac{M}{5}$

70. The average oxidation state of N atom in HN_3 is
(1) $+\frac{1}{3}$ (2) $-\frac{1}{3}$
(3) 0 (4) -3

71. The half cell reactions are
$Pb^{2+}(aq) + 2e^- \rightarrow Pb(s)$ $E° = -0.13$ V
$Ag(s) \rightarrow Ag^+(aq) + e-$ $E° = -0.80$ V
Calculate standard EMF?
(1) 0.67 V (2) 0.93 V
(3) –0.93 V (4) 1.47 V

72. $xBrO_3^- + yl^- + zH^+ \rightarrow Br^- + al_2 + bH_2O$
The values of a y and b are respectively
(1) 6, 6 (2) 3, 6
(3) 6, 3 (4) 3, 3

73. Equivalent mass of Fe_2S_3 in the below reaction is, ifs molar Mass is 'M'
$Fe_2S_3 + O_2 \rightarrow Fe_2O_3 + SO_3$

(1) $\frac{M}{2}$ (2) $\frac{M}{20}$

(3) $\frac{M}{22}$ (4) $\frac{M}{24}$

74. The number of moles of ferrous oxalate oxidised by one mole of $KMnO_4$ in acidic medium is

(1) $\frac{5}{3}$ (2) $\frac{3}{5}$

(3) $\frac{6}{5}$ (4) $\frac{1}{5}$

75. $Cl_2 + OH^- \rightarrow Cl^- + ClO_3^- + H_2O$ Coefficient of Cl_2, Cl^- and ClO_3^- are respectively

(1) 4, 5 and 6 (2) 3, 5 and 6

(3) 3, 5 and 1 (4) 3, 5 and 2

76. The n-factor of SO_2 in the following reaction is : $K_2Cr_2O_7 + SO_2 + H_2SO_4 \rightarrow K_2SO_4 + Cr_2(SO_4)_3 + H_2O$

(1) 1 (2) 3/2

(3) 2 (4) 6/4

77. The oxidation number of S in $S_2O_4^{2-}$ and Mg in Mg_3N_2 respectively are

(1) +1, +2 (2) +3, +1

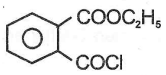
(3) +2, +3 (4) +3, +2

78. Which of the following group can activate the benzene ring strongest towards electrophilic substitution ?

(1) —ÖR (2) —ÖH

(3) –CH = CH – R (4) $-NH_2$

79. The I.U.P.A.C. name of following compound is



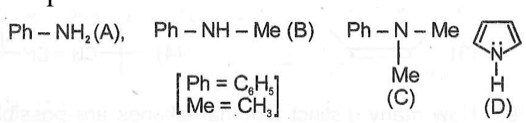
(1) ethyl-2-(chlorocarbonyl) benzoate

(2) ethyl-2-(chlorocarbonyl) hexanoate

(3) 2(ethoxycarbonyl) benzoyl chloride

(4) ethyl benzoyl benzoate

80. Order of basic strength of the following compound



is

(1) A > B > C > D (2) B > A > C > D

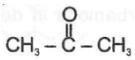
(3) C > B > A > D (4) C > B > D > A

81. How many possible structural isomers of $C_5H_{11}CI$?

(1) 6 (2) 7

(3) 8 (4) 5

82. Maximum enol content is observed in

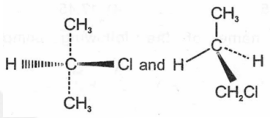
(1) 

(2) 

(3) $CH_3 – COCH_2 – COCH_3$

(4) $CHO – CH_2 – CHO$

83. What is the relationship between the following compounds ?



(1) Constitutional isomers

(2) Enantiomers

(3) Diastereomers

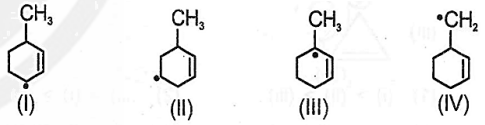
(4) Super impossible without bond rotation

84. Total number of optical isomers possible for 2, 3 dibromobutane is

(1) 2 (2) 4

(3) 3 (4) 8

85. Decreasing order of stability for the following radical is



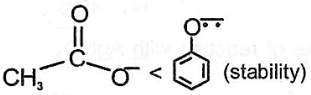
(1) III > I > II > IV (2) III > II > I > IV

(3) III < II < I < IV (4) I < IV < II < III

86. Which of the following is/are correct order?

(I) $:CF_2 > :CCl_2 > :CBr_2$ (singlet stability)

(II) $HC \equiv \ddot{C}^{\ominus} < ph - \ddot{C}H_2 < CH_2 = \ddot{C}H$ (stability)

(III)  (stability)

(IV) $CHF_3 > CHCl_3$ (acidic strength)

(1) I only (2) I, III, IV

(3) II, III (4) III, IV

87. Styrene can be purified by

(1) Simple distillation

(2) Fractional distillation

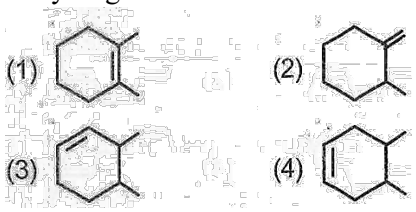
(3) Vaccum distillation

(4) Steam distillation

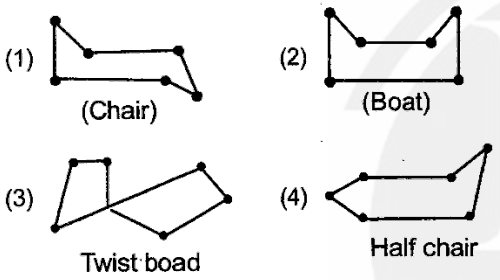
88. In Duma's method of estimation of nitrogen 0.35 g of an organic compound gave 55 ml of nitrogen collected at 300K temperature and 715 mm pressure. The percentage composition of nitrogen in the compound would be [Aqueous tension at 300K 15 mm]

(1) 16.46 (2) 15.45
(3) 18.45 (4) 17.45

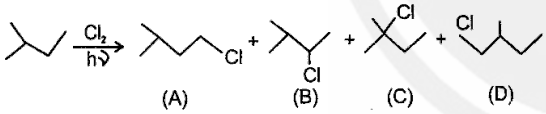
89. Which of the following compound have least heat of hydrogenation?



90. Which of the following is the least stable of cyclohexane?

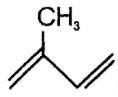


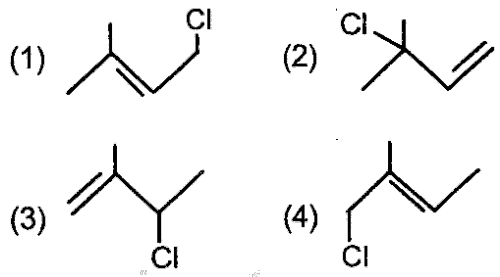
91. In the reaction

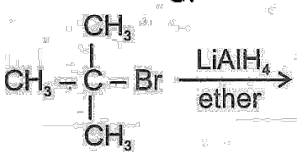


The ratio of the amount of product (A), (B), (C), (D) is exposed to be

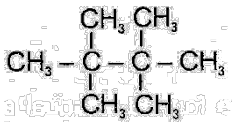
(1) 1: 3.8: 5: 1 (2) 3: 7.6: 5: 6
(3) 3: 7.6: 5: 3 (4) 1: 7.6: 5: 1

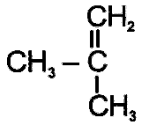
92. When  react with $\underset{(\text{one mole})}{HCl}$, then major product under high temperature is?

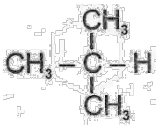


93. 

Major product

(1) 

(2) 

(3) 

(4) No reaction

94. In the reaction $C_6H_5CH_3 \xrightarrow{\text{oxidation}} A \xrightarrow{NaOH} B \xrightarrow{\text{Sodalims}} C$. The product C is

(1) C_6H_5OH (2) C_6H_6
(3) C_6H_5COONa (4) C_6H_5ONa

95. An alkene on reductive ozonolysis gives two molecule of CH_2-$(CHO)_2$. The alkene is

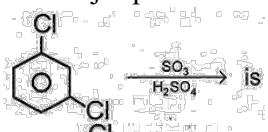
(1) 2,4 hexadiene
(2) 1,3 cyclohexadiene
(3) 1,4 cyclohexadiene
(4) 1 methyl, 1, 3 cyclo pentadiene

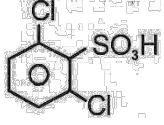
96. Identify the product in the reaction

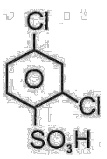
$C_6H_5 - C \equiv C - CH_3 \xrightarrow{H_3O+, H_g^{+2}}$ product

(1) $C_6H_5CH_2$-CH_2 - CHO
(2) $CHCOCH_2$-CH_3
(3) $C_6H_5CH_2$-$COCH_3$
(4) $C6H_5COCOCH_3$

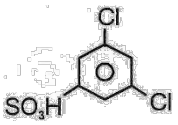
97. The major product obtained in the reaction



(1) 

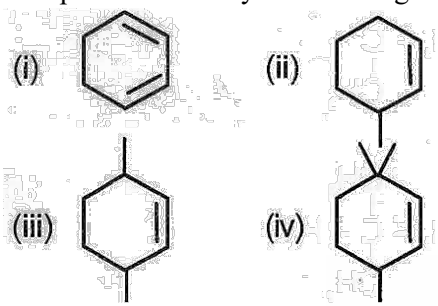


(2)

(3) 

(4) both (1) and (2) are formed in equal amount

98. Compare the stability of following alkenes



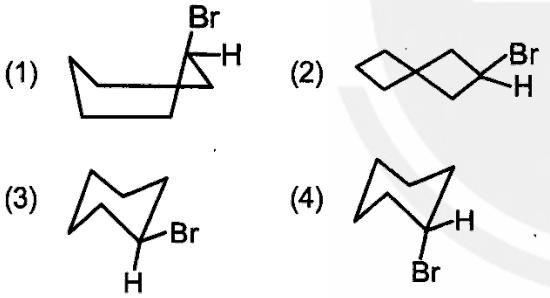
(1) (i) > (ii) > (iii) > (iv)

(2) (i) > (iii) > (ii) > (iv)

(3) (iii) > (i) > (ii) > (iv)

(4) (iv) > (iii) > (ii) > (i)

99. Which of the following is the most stable conformation of bromocyclohexane



100. If Hg_2Cl_2 is 100% ionised then its van't Hoff factor will be

(1) 2 (2) 4

(3) 6 (4) 3

101. Lowering of vapour pressure for 1m aqueous solution is 1.08 mm of Hg at 25°C The vapour pressure of pure liquid at 25°C is 10x mm of Hg. The value of x will be, assuming very dilute solution

(1) 4 (2) 6

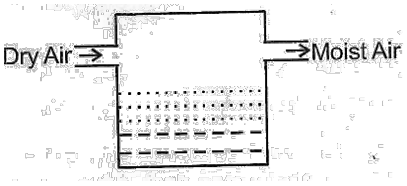
(3) 8 (4) 3

102. How many terms will have negative value for a solution showing -ve deviation?

ΔG_{mix}, ΔS_{mix}, ΔH_{mix}, ΔV_{mix}

(1) 2 (2) 3

(3) 4 (4) 1

103. 

The above set up has been repeated four times with 4 different aqueous solution of same non-volatile solute with different concentrations. The loss in weight of solution in container is in order D > B > C > A. Arrange A, B, C, D in terms of concentration of solute

(1) D > B > C > A

(2) A > B > C > D

(3) A > C > B > D

(4) A > D > C > B

104. Azeotropic mixture of water and C_2H_5OH boils at 351K. By distilling the mixture, it is possible to obtain

(1) Pure C_2H_2OH only

(2) Pure water only

(3) Both water and C_2H_2OH in pure state

(4) Neither C_2H_2OH nor water

105. Consider 0.1 M solution of two solutes X and Y. Solute X dissociates in two ions whereas Y dimerises in the solution. Which of the following is false ? (X and Y represents solution containing X and Y respectively)

(1) $(\Delta T_b)_X > (\Delta T_b)_Y$ (2) $(B.P)_X > (B.P)_Y$

(3) $(F.P)_X > (F.P)_Y$ (4) $(\Delta T_f)_X > (\Delta T_f)_Y$

106. An ideal solution was found to have a vapour pressure of 80 torr when the mole fraction of non-volatile solute is 0.2. Find vapour pressure of pure solvent at same temperature.

(1) 64 torr (2) 72 torr

(3) 80 torr (4) 100 torr

107. The freezing point of a 4% (w/v) aqueous solution of 'A' is equal to the freezing point of 10% (w/v) aqueous solution of 'B'. The molecular weight of A is 60, find out the molecular weight of B. Assume both A and B are non electrolyte and molarity = molality

(1) 150 (2) 90

(3) 45 (4) 180

108. When mercuric iodide is added to the aqueous solution of KI, then the:

(1) Freezing point is raised

(2) Freezing point is lowered

(3) Freezing point does not change

(4) Boiling point does not change

109. Henry law constant of N_2 in water is 10^4 atm. Find 2 the molality (Approx) of N_2 in water when pressure of N_2 over water surface is 5 atm (consider 2 temperature remains constant)

(1) 0.10 (2) 0.028

(3) 0.05 (4) 0.12

110. Vapour pressure of a solvent is decreased by 10 mm of Hg. When a non-volatile, non-electrolytic solute was added. Mole fraction of the solute in solution is 0.2. Find out mole fraction of the solute if decrease in vapour pressure is 20 mm of Hg:

(1) 0.1 (2) 0.2

(3) 0.4 (4) 0.3

111. The standard reduction potential at $25°C$ of the reaction $2H_2O + 2e^- \rightleftharpoons H_2 + 2OH^-$is $-0.84\ V$. Calculate equilibrium constant for the reaction: $2H_2O \rightleftharpoons H_3O^+ + OH^-$at $25°C$. $(2.303RT/F = 0.06)$

(1) 10^{-14}

(2) 10^{14}

(3) 10^7

(4) 10^{-7}

112. Standard reduction potentials at $25°C$ of Li^+/Li, $Ba^{2+}/Ba, Na^+/Na$ and Mg^{2+}/Mg are $-3.05, -2.90. -2.71$ and -2.37 volt respectively. Which one of the following is the strongest oxidizing agent?

(1) Ba^{2+}

(2) Mg^{2+}

(3) Na^+

(4) Li^+

113. Zinc can be coated on iron to produce galvanized iron but the reverse is **not** possible. It is because:

(1) zinc is lighter than iron.

(2) zinc has lower melting point than iron.

(3) zinc has lower negative electrode potential than iron.

(4) zinc has higher negative electrode potential than iron.

114. When two half-cells of electrode potential of E_1 and E_2 are combined to form a cell of electrode potential E_3, then (when n_1, n_2 and n_3 are no. of electrons exchanged in first, second and combined half-cells)

(1) $E_3 = E_2 - E_1$

(2) $E_3 = \frac{E_1 n_1 + E_2 n_2}{n_3}$

(3) $E_3 = \frac{E_1 n_1 - E_2 n_2}{n_3^2}$

(4) $E_3 = E_1 + E_2$

115. Perdisulphuric acid, $H_2S_2O_8$ can be prepared by electrolytic oxidation of H_2SO_4, oxygen and hydrogen gases are by products. In such an electrolysis, 9.08 L of H_2 and 2.27 L of O_2 were generated at STP. What is the mass of $H_2S_2O_8$ formed? (molar volume at STP = 22.4 L/mol)

(1) 0

(2) 77.6 g

(3) 39.3 g

(4) 19.4 g

116. In the electrolysis of acidulated water, it is desired to obtain 1.12 cc of hydrogen per second under STP condition. The current to be passed is:

(1) 1.93 A

(2) 9.65 A

(3) 19.3 A

(4) 0.965 A

117. The standard reduction potentials at 298 K for the following half reactions are given against each

$Zn^{2+}(aq) + 2e^- \rightleftharpoons Zn(s)$; $E^{\circ}_{Zn^{2+}/Zn} = -0.762$

$Cr^{3+}(aq) + 3e^- \rightleftharpoons Cr(s)$; $E^{\circ}_{Cr^{3+}/cr} = -0.740$

$2H^+(aq) + 2e^- \rightleftharpoons H_2(g)$; $E^{\circ}_{H^+/H_2} = 0.00$

$Fe^{3+}(aq) + e^- \rightleftharpoons Fe^{2+}(aq)$; $E^{\circ}_{Fe^{3+}/Fe^{2+}} = 0.770$

Which is the strongest reducing agent?

(1) $Zn(s)$

(2) $Cr(s)$

(3) $H_2(g)$

(4) $Fe^{2+}(aq)$

118. In lead storage battery, during discharging process

(1) PbO_2 gets oxidized.
(2) H_2SO_4 is produced.
(3) density of H_2SO_4 solution decreases.
(4) density of H_2SO_4 solution increases.

119. The standard reduction potentials at 298 K for the following half cell reactions are given below;

$Zn^{2+}(aq) + 2e^- \rightleftharpoons Zn(s);\ -0.76\ V$
$Cr^{3+}(aq) + 3e^- \rightleftharpoons Cr(s);\ -0.74\ V$
$2H^+(aq) + 2e^- \rightleftharpoons H_2(g);\ 0.0\ V$
$Fe^{3+}(aq) + e^- \rightleftharpoons Fe^{2+}(aq);\ +0.77\ V$

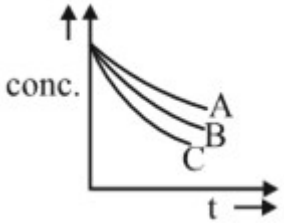
Which is the strongest reducing agent?
(1) Zn(s)
(2) Cr(s)
(3) $H_2(g)$
(4) $Fe^{2+}(aq)$

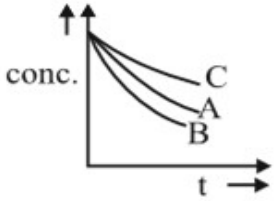
120. Standard electrode potentials of three metals X, Y and Z are $-1.2\ V, +0.5\ V$ and $-3.0\ V$ respectively. The reducing power of these metals will be:
(1) Y > Z > X
(2) Y > X > Z
(3) Z > X > Y
(4) X > Y > Z

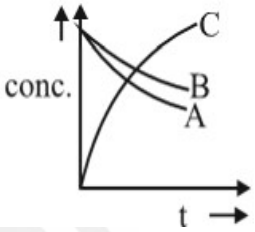
121. Assuming that hydrogen behaves as an ideal gas, what is the EMF of the cell at 25°C if P_1= 600 mm Hg and P_2 = 420 mm Hg; Pt|$H_2(P_1)$|HCl|$H_2(P_2)$|Pt? [Given: 2.303 RT/F = 0.06, log7 = 0.85]
(1) −0.0045 V
(2) −0.01 V
(3) +0.0045 V
(4) +0.0015 V

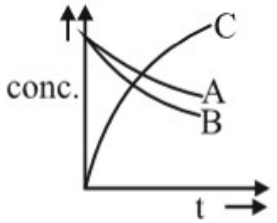
122. For an exothermic reaction, the energy of activation of the reactants is:
(1) equal to the energy of activation of products.
(2) less than the energy of activation of products.
(3) greater than the energy of activation of products.
(4) Sometimes greater and sometimes less than that of the products.

123. Which of the following graphs is **correct** for the reaction of A + 2B →C;

(1)


(2)


(3)


(4)


124. The analysis of a mineral of uranium reveals that molar ratio of ^{206}Pb and ^{238}U in a sample is 0.2. If effective decay constant of process $^{238}U \rightarrow {}^{206}Pb$ is λ, then age of rock is
(1) $\frac{1}{\lambda}\ln\frac{5}{4}$
(2) $\frac{1}{\lambda}\ln\left(\frac{5}{1}\right)$
(3) $\frac{1}{\lambda}\ln\left(\frac{4}{1}\right)$
(4) $\frac{1}{\lambda}\ln\left(\frac{6}{5}\right)$

125. Which of the following is/are **incorrect** statement?
(1) Stoichiometry of a reaction tells about the order of the elementary reactions.
(2) For a zero order reaction, rate and the rate constant are identical.
(3) A zero order reaction is controlled by factors other than concentration of reactants.
(4) A zero order reaction is always elementary reaction.

126. In the following reaction, $xA \rightarrow yB$

$$\log\left[\frac{-d[A]}{dt}\right] = \log\left[\frac{d[B]}{dt}\right] + 0.301$$

where-ve sign indicates rate of disappearance of the reactant. Thus $x: y$ is:

(1) $1:2$
(2) $2:1$
(3) $3:1$
(4) $3:10$

127. A large increase in the rate of a reaction for a rise in temperature is due to:

(1) The decrease in the number of collisions
(2) The increase in the number of activated molecules
(3) The shortening of the mean free path
(4) The lowering of the activation energy

128. For the reaction $2NO_2 \rightarrow N_2\ O_2 + O_2$ rate expression is as follows $\frac{-d[NO_2]}{dt} = K[NO_2]^n$ where K = 3×10^{-2} mol^{-1} $Lsec^{-1}$. If the rate of formation of oxygen is 1.5×10^{-4} mol^{-1} $Litre^{-1}$ Sec^{-1} then the molar concentration of NO_2 in mole $Litre^{-1}$ is

(1) 0.51
(2) 0.015
(3) 0.214
(4) 0.10

129. For a reaction, the rate constant is expressed as $k = Ae^{-\frac{40000}{T}}$. The energy of the activation is- (Given: R=2 cal $mol^{-1}K^{-1}$)

(1) $40000\ cal$
(2) $8000\ cal$
(3) $80000\ cal$
(4) $4000\ cal$

130. The rate of the given reaction $2NO + Cl_2 \rightarrow 2NOCl$ is given by the rate equation: Rate $= k[NO]^2[Cl_2]$. The value of the rate constant can be increased by:

(1) increasing the temperature.
(2) increasing the concentration of NO.
(3) increasing the concentration of Cl_2.
(4) doing all of these.

131. For the reaction $N_2O_5(g) \rightarrow 2NO_2(g) + \frac{1}{2}O_2(g)$ the value of rate of disappearance of N_2O_5 is given as 6.25×10^{-3} mol L^{-1} s^{-1}. The rate of formation of NO_2 and O_2 is given respectively as :

(1) $6.25 \times 10^{-3}\ mol\ L^{-1}s^{-1}$ *and* $3.125 \times 10^{-3} mol\ L^{-1}s^{-1}$
(2) $6.25 \times 10^{-3}\ mol\ L^{-1}s^{-1}$ *and* $6.25 \times 10^{-3} mol\ L^{-1}s^{-1}$
(3) $6.25 \times 10^{-3}\ mol\ L^{-1}s^{-1}$ *and* $6.125 \times 10^{-3} mol\ L^{-1}s^{-1}$
(4) $1.25 \times 10^{-2}\ mol\ L^{-1}s^{-1}$ *and* $3.125 \times 10^{-3} mol\ L^{-1}s^{-1}$

132. For first order reaction, if volume of vessel is reduced to 1/3, then rate of reaction would be:

(1) 1/3 times
(2) 2/3 times
(3) 3 times
(4) 6 times

133. Which of the following compounds has colour but no unpaired electrons?

(1) $KMnO_4$
(2) K_2MnO_4
(3) $MnSO_4$
(4) $MnCl_2$

134. The **correct** general electronic configuration for d-block elements except Pd is:

(1) $(n-1)d^{1-9}\ ns^1$
(2) $(n-1)d^{1-10}\ ns^{1-2}$
(3) $(n-1)d^{1-5}$
(4) $(n-1)d^{-10}\ ns^2$

135. Transition elements exhibit variable oxidation states in their compounds due to:

(1) Strong shielding of (n–1) d-electrons.
(2) Very small energy difference between (n-1)d and ns orbitals.
(3) Presence of unpaired electrons.
(4) High energy difference between (n-1)d and ns orbitals.

136. Which of the following statements are **correct**?

(i) In interstitial compounds, non-metal atoms are trapped inside the crystal of the metal.
(ii) Steel and bronze are alloys of transition and non-transition metals.
(iii) They have high Melting point higher than those of pure metals.
(iv) Interstitial compounds are chemically more reactive as compared to the parent metal.

(1) (i) and (iii) only

(2) (ii) and (iv) only
(3) (ii) and (iii) only
(4) (i), (ii) and (iii)

137. In which case, the oxidation number of Cr has been affected?
(1) $2CrO_4^{2-} + 2H^+ \rightarrow Cr_2O_7^{2-} + H_2O$
(2) $Cr_2O_7^{2-} + 2OH^- \rightarrow 2CrO_4^{2-} + H_2O$
(3) $(NH_4)_2Cr_2O_7 \rightarrow N_2 + Cr_2O_3 + 4H_2O$
(4) $CrO_2Cl_2 + 2OH^- \rightarrow CrO_4^{2-} + 2HCl$

138. Four successive members of the first row transition elements are listed below with their atomic numbers. Which one of them is expected to have the highest third ionisation enthalpy?
(1) Vanadium (Z = 23)
(2) Manganese (Z = 25)
(3) Chromium (Z = 24)
(4) Iron (Z = 26)

139. Which of the following is arranged in order of increasing melting point?
(1) Zn < Cu < Ni < Fe
(2) Fe < Ni < Cu < Zn
(3) Ni < Fe < Zn < Cu
(4) Cu < Zn < Fe < Ni

140. Interstitial compounds are formed when small atoms are trapped inside the crystal lattice of metals. Which of the following is not the characteristic property of interstitial compounds?
(1) They have high melting points in comparison to pure metals.
(2) They are very hard.
(3) They retain metallic conductivity.
(4) They are chemically very reactive.

141. Which of the following is arranged in order of increasing melting point?
(1) Zn < Cu < Ni < Fe
(2) Fe < Ni < Cu < Zn
(3) Ni < Fe < Zn < Cu
(4) Cu < Zn < Fe < Ni

142. The elements having lowest and highest oxidation number respectively are
(1) Sc, Fe
(2) Sc, Mn
(3) Ag, Mn
(4) Fe, Mn

143. The oxidation states of Cr in $[Cr(H_2O)_6]Cl_3$, $[Cr(C_6H_6)_2]$, and $K_2[Cr(CN)_2(O)_2(O_2)(NH_3)]$ respectively are:
(1) +3, +4, and +6
(2) +3, + 2, and +4
(3) +3, 0, and +6
(4) +3, 0, and +4

144. Which of the characteristic is **not** common between $[Cu(en)_2]^{2+}$ and $[Ni(dmg)_2]$?
(1) Geometry of complexes
(2) Hybridization of central metal cation
(3) Magnetic behaviour
(4) None of these

145. Which of the following is true about the complex $[PtCl_2(NH_3)(H_2O)]$? [Atomic number of Pt = 78]
(i) It will have two geometrical isomeric forms, cis and trans.
(ii) The hybridisation state of Pt(II) is sp^3.
(iii) It is a square planar complex.
(iv) It is a diamagnetic complex.
(v) It can show hydrate isomerism.
(vi) It is a tetrahedral complex.
(1) (i), (iii), (iv)
(2) (ii), (iv), (v)
(3) (ii), (v), (vi)
(4) (i), (v), (vi)

146. Match **List-I** with **List-II**.

List-I (Ligand)		**List-II (Denticity)**	
(A)	Diethylenetriamine	(I)	Unidentate
(B)	Thiocyanate ion	(II)	Didentate
(C)	Ethylenediamine	(III)	Tridentate
(D)	Ethylenediamine tetraacetate ion	(IV)	Hexadentate

Choose the correct answer from theoptions given below:
(1) A-IV, B-III, C-II, D-I
(2) A-I, B-IV, C-II, D-III
(3) A-III, B-I, C-II, D-IV
(4) A-II, B-III, C-I, D-IV

147. Which complex of Co^{2+} will have the weakest crystal field splitting?
(1) $[Co(CN)_6]^{4-}$
(2) $[CoCl_6]^{4-}$
(3) $[Co(en)_3]^{2+}$

(4) $[Co(H_2O)_6]^{2+}$

148. Which of the following compound is square planar and does **not** have any unpaired electron?
(1) $[CuCl_4]^{2-}$
(2) $[Ni(CO)_4]$
(3) $[NiCl_4]^{2-}$
(4) $[Ni(CN)_4]^{2-}$

149. The IUPAC name of the compound $K_2[Ni(CN)_4]$ is
(1) Potassium tetracyanidonickelate (III)
(2) Potassium tetracyanidonickelate (II)
(3) Potassium tetracyanidonickel (III)
(4) Potassium tetracyanidonickel (II)

150. Which of the following will give a pair of enantiomers?
(1) $[Cr(NH_3)_6]$ $[Co(CN)_6]$
(2) $[Co(en)_2Cl_2]Cl$
(3) $[Pt(NH_3)_4]$ $[PtCl_6]$
(4) $[Co(NH_3)_4Cl_2]NO_2$

151. Which of following complex has highest Δ_o value?
(1) $[Fe(H_2O)_6]^{3+}$
(2) $[Fe(H_2O)_6]^{2+}$
(3) $[Fe(CN)_6]^{3-}$
(4) All have equal Δ_o values

152. Cis-$[Pt(en)_2Br_2]Cl_2 \cdot 2H_2O$ and trans-$[Pt(en)_2Br_2]Cl_2 \cdot 2H_2O$ are:
(1) Ionisation isomer
(2) Geometrical isomer
(3) Hydrate isomer
(4) Optical isomers

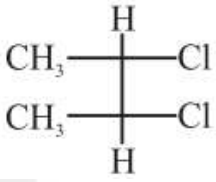
153. Which of the following statements is/are **correct**?
(1) A meso compound has chiral centres but exhibits optical activity.
(2) A meso compound has no chiral centres and thus are optically inactive.
(3) A meso compound has molecules which are superimposable on their mirror images even though they contain chiral centres.
(4) A meso compound is optically inactive because the rotation caused by any molecule is cancelled by an equal and opposite rotation caused by another molecule that is the mirror image of the first.

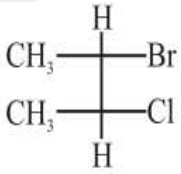
154. Match **List-I** with **List-II.**

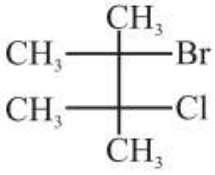
List-I		**List-II**	
(A)	$CH_3CH_2CHCl_2$	(I)	Vinyl halide
(B)	CH_2ClCH_2Cl	(II)	Alkylidene halide
(C)	$CHCl = CH_2$	(III)	Alkylene dehalide
(D)	$ClCH_2 - CH = CH_2$	(IV)	Allyl halide

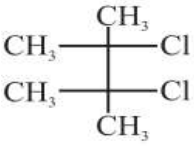
Choose the **correct** answer from the options given below:
(1) A-I, B-III, C-IV, D-III
(2) A-II, B-III, C-I, D-IV
(3) A-III, B-IV, C-II, D-I
(4) A-IV, B-I, C-III, D-II

155. Which of the following molecule is chiral?

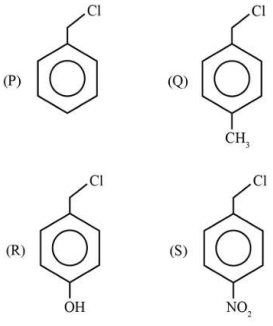
(1) 

(2) 

(3) 

(4) 

156. The order of fastest S_N1 reaction will be

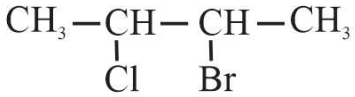


(1) S > P > Q > R
(2) R > Q > P > S

(3) Q > R > P > S
(4) S > Q > P > R

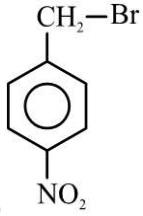
157. Which reagent is used to convert alkylhalide into alkyl isocyanide?
(1) KNO_2
(2) $AgNO_2$
(3) KCN
(4) AgCN

158. The number of stereoisomers for the compound

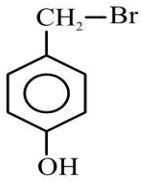


is:
(1) 2
(2) 3
(3) 4
(4) 5

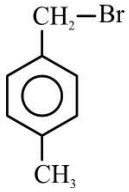
159. Which is the most reactive for S_N1 reaction?
(1)



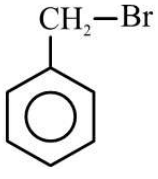
(2)



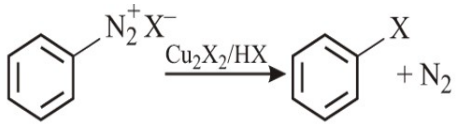
(3)



(4)



160. The name of the reaction given below is:



(1) Finkelstein reaction
(2) Fittig reaction
(3) Sandmeyer's reaction
(4) Wurtz-fittig reaction

161. Given below are two statements:
Statement I: S_N1 reactions of optically active halides are accompanied by inversion of configuration.
Statement II: S_N2 reactions of optically active halides are accompanied by retention of configuration.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Statement I is correct but Statement II is incorrect.
(2) Statement I is incorrect but Statement II is correct.
(3) Both Statement I and Statement II are correct.
(4) Both Statement I and Statement II are incorrect.

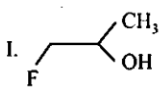
162. What will be Z in the given reaction?

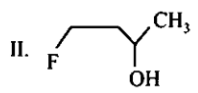
$$ROH \xrightarrow{\text{Red } P+I_2} RI + Z$$

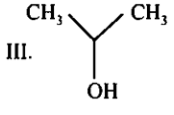
(1) H_3PO_2
(2) H_3PO_3
(3) H_3PO_4
(4) HPO_3

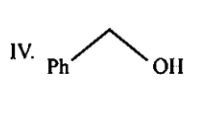
163. Which of the following reagents converts alkene into alcohol?
(1) H_2O/H_2SO_4
(2) $(i)\ BH_3\ (ii)\ H_2O_2/\ \bar{O}H$
(3) (i) $Hg(OAc)_2$ (ii) $H_2O/NaBH_4$
(4) All of these

164. The order of reactivity of the following alcohols.









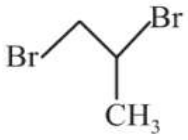
Towards conc. HCl is:
(1) I > II > III > IV
(2) I > III > II > IV

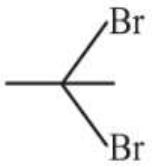
(3) IV > III > II > I
(4) IV > III > I > II

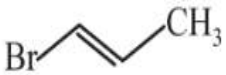
165. Why ether is more volatile than an alcohol having same molecular formula?
(1) Dipolar character of ethers.
(2) Ethers having resonance structures.
(3) Inter-molecular hydrogen bonding in ethers.
(4) Inter-molecular hydrogen bonding in alcohols.

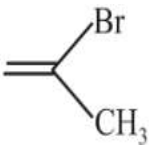
166. Among the following choose the most acidic compound.
(1) Phenol
(2) Carboxylic acid
(3) Ethyl alcohol
(4) Ether

167. 1-methyl ethylene oxide when treated with an excess of HBr produces

(1) 

(2) 

(3) 

(4) 

168. In the reaction,

$$CH_3CH_2OH \xrightarrow{PCl_5} B \xrightarrow{Alc.\ KOH} C$$

The product (C) is:
(1) acetyl chloride
(2) acetaldehyde
(3) acetylene
(4) ethylene

169. Given below are two statements: one is labelled as Assertion (A) and the other is labelled as Reason (R).
Assertion (A): Synthesis of ethyl phenyl ether may be achieved by Williamson synthesis.
Reason (R): Reaction of bromobenzene with sodium ethoxide yields ethyl phenyl ether.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both (A) and (R) are correct and (R) is the correct explanation of (A).
(2) (A) is correct but (R) is not correct.
(3) Both (A) and (R) are correct but (R) is NOT the correct explanation of (A).
(4) (A) is not correct but (R) is correct.

170. n-propyl alcohol and isopropyl alcohol can be chemically distinguished by which reagent?
(1) PCl_5
(2) Ozonolysis
(3) Oxidation with potassium dichromate
(4) Reduction

171. A student tried two reactions for preparing tert-butyl ethyl ether:

(I) $C_2H_5ONa + CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-Cl \longrightarrow$

(II) $CH_3-\underset{\displaystyle CH_3}{\overset{\displaystyle CH_3}{\overset{|}{\underset{|}{C}}}}-ONa + CH_3-CH_2-Cl \longrightarrow$

Which reaction will give tert-butyl ethyl ether?
(1) Only I
(2) Only II
(3) Both I and II
(4) Neither I nor II

172. Lucas reagent reacts fastest with
(1) 1-butanol
(2) 2-butanol
(3) 2-methyl-2-propanol
(4) 2-methyl-1-propanol

173. An organic compound $X(C_3H_8O)$ on treatment with acidified $K_2Cr_2O_7$ gives compound Y which

reacts with I_2 and sodium carbonate to form triiodomethane. The compound X can be

(1) $CH_3CH_2CH_2OH$
(2) $CH_3CH_2OCH_3$
(3) CH_3CH_2CHO
(4) $CH_3CH(OH)CH_3$

174. What is the **correct** order of reactivity of alcohols in the following reaction?

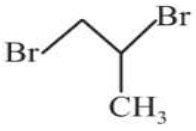
$$R-OH+HCl \xrightarrow{ZnCl_2} R-Cl+H_2O$$

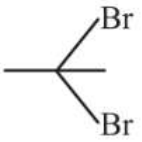
(1) $1^\circ > 2^\circ > 3^\circ$
(2) $1^\circ < 2^\circ > 3^\circ$
(3) $3^\circ > 2^\circ > 1^\circ$
(4) $3^\circ > 1^\circ > 2^\circ$

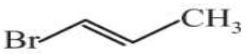
175. Among the following choose the most acidic compound.

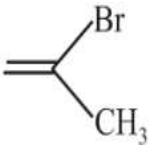
(1) Phenol
(2) Carboxylic acid
(3) Ethyl alcohol
(4) Ether

176. 1-methyl ethylene oxide when treated with an excess of HBr produces

(1) 

(2) 

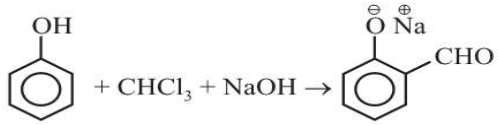
(3) 

(4) 

177. Boiling point of alcohol is comparatively higher than that of corresponding alkane due to:

(1) Intermolecular hydrogen bonding
(2) Intramolecular hydrogen bonding
(3) Volatile nature
(4) None of these

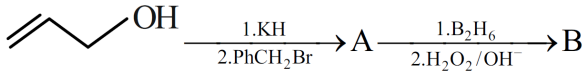
178. In the given reaction,



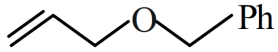
the electrophile involved is:

(1) dichloromethyl cation $\left(\overset{\oplus}{C}HCl_2\right)$
(2) formyl cation $\left(\overset{\oplus}{C}HO\right)$
(3) dichloromethyl anion $(CHCl_2)$
(4) dichlorocarbene $(:CCl_2)$

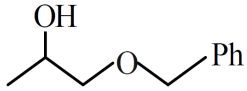
179. Consider the following sequence of reactions.

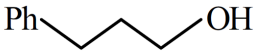


The end product (2) is

(1) 

(2) 

(3) 

(4) 

180. The major product of the following reaction is:

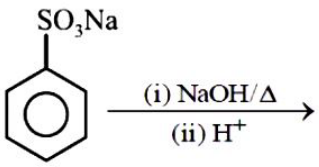
(1) Pentan-1-ol
(2) Pentan-2-ol
(3) Pentane
(4) Pentanal

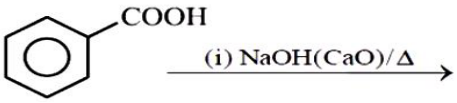
181. Consider the following reaction $C_2H_5OH + H_2SO_4 \rightarrow$ Product

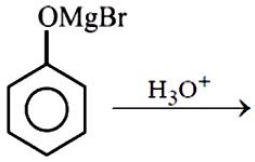
Among the following, which one cannot be formed as a product under any conditions?

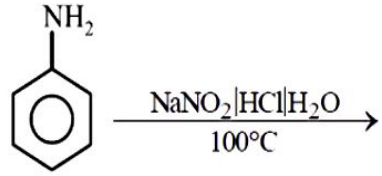
(1) $C_2H_5OSO_3H$
(2) $H_2C = CH_2$
(3) $HC \equiv CH$
(4) $CH_3 - CH_2 - O - CH_2 - CH_3$

182. Phenol is not obtained by

(1) 

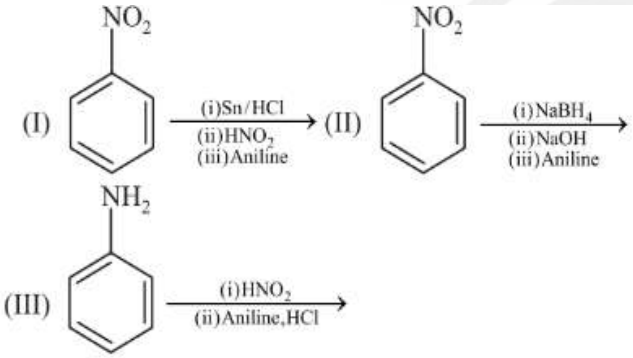
(2) 

(3) 

(4) 

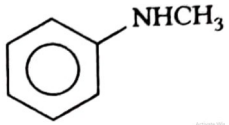
183. What is the IUPAC name of $(CH_3)_2 - N - CH_3$?
(1) Trimethylamine
(2) 2, 2-Dimenthylmethanamine
(3) N, N-Dimethylmethanamine
(4) N – Methyldimethanamine

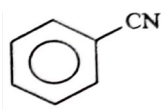
184. Which of the following reaction/s will not give p-aminoazobenzene?

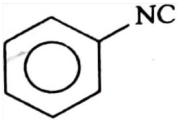


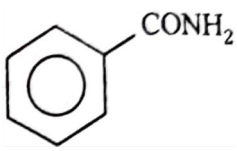
(1) II only
(2) I and II
(3) III only
(4) I only

185. The carbylamine test is used to identify the primary amine group in an organic compound. Which of the following compounds is produced when this test is performed on aniline?

(1) 

(2) 

(3) 

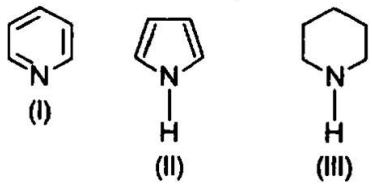
(4) 

186. **Assertion (A):** Primary, secondary and tertiary amines can be distinguished by the action of Br_2 in the presence of NaOH.
Reason (R): A mixture of primary, secondary and tertiary amines can be prepared by ammonolysis of alkyl halides.
(1) Both A and R are true and R is the correct explanation of A.
(2) Both A and R are true but R is NOT a correct explanation of A.
(3) A is true but R is false.
(4) A is false but R is true.

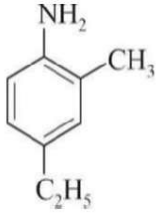
187. The positive carbylamine test is given by:
A. N,N-dimethylaniline
B. 2,4-dimethylaniline
C. N-methyl-*o*-methylaniline
D. p-methylbenzylamine
The **correct** option is:
(1) A and B
(2) B and C
(3) A and C
(4) B and D

188. An organic compound "A" on treatment with benzene sulphonyl chlorides gives compound B. B is soluble in dil. $NaOH$ solution. Compound A is
(1) $C_6H_5 - N - (CH_3)_2$
(2) $C_6H_5 - NHCH_2CH_3$
(3) $C_6H_5 - CH_2NHCH_3$
(4) $C_6H_5 - CHCH_3{}_2NH_2$

189. Arrange the following amines in the decreasing order of basicity:



(1) I > II > III
(2) III > II > I
(3) I > III > II
(4) III > I > II

190. Correct I.U.P.A.C name of the compound 

is:

(1) 4-Ethyl-2-methyl aniline

(2) 2-Methyl-4-ethyl aniline
(3) 3-Methyl-5-ethyl aniline
(4) 4-Ethyl-6-methyl aniline

191. Which of the following is not a correct method of the preparation of benzylamine fom cyanobenzene?
(1) (i) $LiALH_4$ (ii) H_3O^+
(2) H_2/Ni
(3) (i) HCl/H_2O (ii) $NaBH_4$
(4) (i) $SnCl_2$ + HCl(gas) (ii) $NaBH_4$

192. Which one of the following statements is **correct**?
(1) All amino acids except lysine are optically active.
(2) All amino acids are optically active.
(3) All amino acids except glycine are optically active.
(4) All amino acids except glutamic acids are optically active.

193. Glucose $\xrightarrow{Br_2+H_2O}$ Product is:
(1) Glucaric acid
(2) Gluconic acid
(3) Hexanoic acid
(4) Bromohexane

194. Which reagent is used to convert glucose into saccharic acid?
(1) Br_2/H_2O
(2) Nitric acid
(3) Alkaline solution of iodine
(4) Ammonium hydroxide

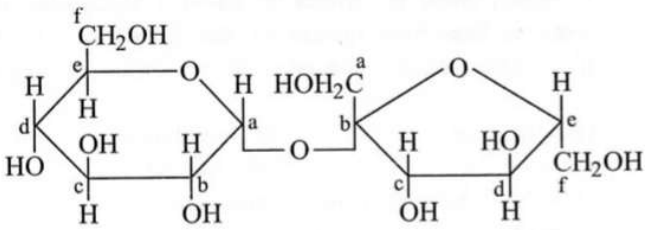
195. In a protein molecules various amino acids are linked together by:
(1) α-glycosidic bond.
(2) β-glycosidic bond.
(3) peptide bond.
(4) dative bond.

196. In DNA, the complementary bases are:
(1) Adenine and thymine ; guanine and uracil
(2) Adenine and guanine ; thymine and cytosine
(3) Uracil and adenine ; cytosine and guanine
(4) Adenine and thymine ; guanine and cytosine

197. Which of the statement about "Denaturation" given below are **correct**?
(1) Denaturation of proteins causes loss of secondary and tertiary structures of the protein.
(2) Denaturation leads to the conversion of double strand of DNA into single strand.
(3) Denaturation affects primary structure which gets distorted.
(1) (2) and (3) only
(2) (1) and (3) only
(3) (1) and (2) only
(4) (1), (2) and (3)

198. Which of the statements about "Denaturation" given below are correct?
(i) Denaturation of proteins causes loss of secondary and tertiary structures of the protein.
(ii) Denaturation leads to the conversion of double strand of DNA into single strand.
(iii) Denaturation affects primary structure which gets distorted.
(1) (ii) and (iii)
(2) (i) and (iii)
(3) (i) and (ii)
(4) (i), (ii) and (iii)

199. Structure of a disaccharide formed by glucose and fructose is given below. Identify anomeric carbon atoms in monosaccharide units.



(1) a carbon of glucose and a carbon of fructose.
(2) a carbon of glucose and e carbon of fructose.
(3) a carbon of glucose and b carbon of fructose.
(4) f carbon of glucose and f carbon of fructose.

200. The main forces which stabilize the 2° and 3° structures of proteins is/are:
(1) hydrogen bonds
(2) disulphide linkages
(3) van der Waals forces
(4) All of these