

- 1. The required enzyme to convert glucose into alcohol is :**  
(1) Diastase (2) Maltase (3) Invertase (4) Zymase
  - 2. Which of the following has strongest basic nature :**  
(1) m-nitroaniline (2) p-nitroaniline (3) Aniline (4) Benzyl amine
  - 3. Which of the following is formed by the reaction of n-propyl bromide with alcoholic KOH :**  
(1) Propanol (2) Propane (3) Propene (4) Propyne
  - 4. The free electron theory of metallic bond was given by :**  
(1) Drude and Lorenz (2) Sommer field (3) Pauling (4) Stater
  - 5. By which of the following Law's 2-butene is the main product of dehydration of 2-butanol :**  
(1) Saytzeff's law  
(2) Markownikoff's law  
(3) Anti Markownikoff's  
(4) Peroxide effect
  - 6. Which of the following is proper catalyst for alkylation of benzene :**  
(1)  $C_6H_5NO_2$  (2)  $AlCl_3$  (3) Pt (4) Ni
  - 7. In which of the following there is some value dipole moment :**  
(1)  $C_6H_6$  (2)  $CH_4$  (3)  $CO_2$  (4)  $H_2O$
  - 8. Which of the following is the last product of reduction of nitrobenzene in basic medium :**  
(1) Hydroazo benzene (2) Aniline (3) Phenetyl hydroxyl amine (4) Nitrobenzene
  - 9. The product of the reaction of chloroform with concentrate  $HNO_3$ .**  
(1) Nitromethane (2) Nitrosyl chloride (3) Methyl nitrite (4) Chloropicrin
  - 10. The method of separation of a mixture of naphthalene and benzoic acid is :**  
(1) by alcohol (2) by ether (3) by cold water (4) by  $Na_2CO_3$
  - 11. When  $C_6H_5OH$  is treated with  $CHCl_3$  and  $KOH$  salicylaldehyde is formed. The reaction is known as :**  
(1) Kolbe Schmidt reaction  
(2) Parkin reaction
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- (3) Gattermann reaction
- (4) Reimer-Tiemann reaction

12. Which of the following ion with  $\text{NH}_3$  give clear and coloured solution :

- (1)  $\text{Mg}^{+2}$
- (2)  $\text{Fe}^{+2}$
- (3)  $\text{Cu}^{+2}$
- (4)  $\text{Ag}^{+2}$

13. Graphite is conductor of electric while diamond is not because in graphite :

- (1) there is ionic bond present
- (2) there is  $\text{sp}^3$  hybridisation
- (3) there are no free electrons
- (4) free electrons are present

14. Which of the following ions are present in the solution of neutral orthophosphoric acid :

- (1)  $\text{Na}^+$ ,  $\text{HPO}_4^{-2}$
- (2)  $\text{Na}^+$ ,  $\text{H}_2\text{PO}_4^-$ ,  $\text{HPO}_4^{-2}$
- (3)  $\text{Na}^+$ ,  $\text{PO}_3^{-3}$ ,  $\text{H}_2\text{PO}_4^-$ ,  $\text{HPO}_4^{-2}$
- (4)  $\text{Na}^+$ ,  $\text{HPO}_4^{-2}$ ,  $\text{PO}_4^{-3}$

15. Which of the following property is similar in the hydroxides of N and P:

- (1) basic property
- (2) solubility in water
- (3) reduction properties
- (4) stability

16.  $\text{A} + \text{B} \xrightleftharpoons{\quad} \text{C} + \text{D}$  In this reversible reaction initially 4-4 moles of A and B reacts to form 2-2 moles of product at equilibrium. The value of  $K_c$  will be :

- (1)  $\frac{1}{4}$
- (2) 4
- (3) 3
- (4) 1

17. The  $K_{sp}$  value of a salt AB at  $25^\circ\text{C}$  is  $1.21 \times 10^{-6}$ . The solubility of this salt in mole/liter will be :

- (1)  $1.1 \times 10^{-3}$
- (2)  $1.21 \times 10^{-3}$
- (3)  $1.21 \times 10^{-6}$
- (4)  $1.1 \times 10^{-4}$

18. In which of the following there is positive dipole moment :

- (1) HF
- (2)  $\text{C}_6\text{H}_6$
- (3)  $\text{CCl}_4$
- (4)  $\text{BF}_3$

19. A compound 'A' reacts with conc.  $\text{HNO}_3$  to form chloropicrin, compound A is :

- (1)  $\text{CH}_3\text{CHO}$
- (2)  $\text{CHCl}_3$
- (3)  $\text{CH}_3\text{Cl}$
- (4)  $\text{C}_6\text{H}_5\text{OH}$

20. Which of the following units, which represents the concentration of a solution does not depends on temperature :

- (1) Molality
- (2) Formality
- (3) Normality
- (4) Molarity

21. Which of the following hydroxide has least  $K_{sp}$  value at  $25^\circ\text{C}$  :

- (1)  $\text{Sr}(\text{OH})_2$
  - (2)  $\text{Ca}(\text{OH})_2$
  - (3)  $\text{Mg}(\text{OH})_2$
  - (4)  $\text{Ba}(\text{OH})_2$
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22. The oxidation states of highest electronegative element present in the product of the reaction of  $\text{BaO}_2 + \text{H}_2\text{SO}_4$  is :

- (1) -2, +1      (2) -1 -2      (3) 0, -1      (4) -2 0

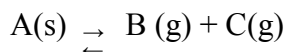
23. Which of the following is found by the reaction of concentrate  $\text{HNO}_3$  and iodine :

- (1)  $\text{HIO}_3$       (2)  $\text{HIO}$       (3)  $\text{HI}$       (4)  $\text{HIO}_2$

24. The strongest bronsted base is :

- (1)  $\text{ClO}_4^-$       (2)  $\text{ClO}_2^-$       (3)  $\text{ClO}_3^-$       (4)  $\text{ClO}^-$

25. The value of  $\Delta n$  for the below reaction will be :



- (1) 0      (2) 2      (3) -1      (4) 1

26. Which of the following is not present in germansilver :

- (1) Mn      (2) Zn      (3) Ni      (4) Cu

27. The oxidation states of iodine are :

- (1) -1, +1, +3, +5      (2) -1, +1, +3  
(3)  $\pm 1$ , +3, +5, +7      (4) -1, +1, +3, +5

28. The IUPAC name of  $(\text{CH}_3)_2\text{CH}-\text{CH}_2-\text{CH}_2-\text{Br}$  is :

- (1) 1-bromo-3,3-dimethyl propane  
(2) 2-methyl-4-bromo butane  
(3) 1-bromo-3-methyl butane  
(4) none of above

29. Which of the following is the reaction when benzaldehyde is heated with  $(\text{CH}_3\text{C})_2\text{O}$  in presence of  $\text{CH}_3\text{COONa}$  :

- (1) Gattermann reaction      (2) Claisen reaction  
(3) Knoevenagel reaction      (4) Parkin reaction

30. Methyl ketone is identified by :

- (1) the reaction with fehling solution  
(2) the reaction with benedict solution  
(3) heated with  $\text{I}_2 + \text{Na}_2\text{CO}_3$   
(4) none of above

31. The testing of purity of a solid compound is done by :

- (1) specific density  
(2) crystal structure of metals  
(3) boiling point  
(4) melting point

32. In which of the following there is no addition according to Markownikoff's law :

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- (1) 1-butyne (2) 2-butene (3) 1-butene (4) propene

33. 23 gm. Of Na reacts with CH<sub>3</sub>OH to form :

- (1) 1 mole of H<sub>2</sub> (2) ½ mole of H<sub>2</sub> (3) ½ mole of O<sub>2</sub> (4) 1 mole of O<sub>2</sub>

34. SiCl<sub>4</sub> is hydrolysed while CCl<sub>4</sub> does not because :

- (1) C is more electronegative than Si  
(2) C and Si are of the same group  
(3) The structure of CCl<sub>4</sub> is tetrahedral  
(4) There are 3d orbitals in Si

35. Which of the following is formed when CH<sub>3</sub>ONa is heated with C<sub>2</sub>H<sub>5</sub>I :

- (1) Dimethyl ether  
(2) Ethyl-methyl ether  
(3) Methyl-propyl ether  
(4) Diethyl ether

36. The poisonous compound which is mixed in petrol is :

- (1) tetraethyl lead (2) n-octane (3) ethanol (4) propene

37. Which of the following salt is used for bead test in inorganic analysis :

- (1) Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>.10H<sub>2</sub>O (2) CaSO<sub>4</sub>. 2H<sub>2</sub>O  
(3) FeSO<sub>4</sub>. (NH<sub>2</sub>)<sub>2</sub>SO<sub>4</sub>.6H<sub>2</sub>O (4) K<sub>2</sub>SO<sub>4</sub>.Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>. 2H<sub>2</sub>O

38. To which of the following anti Markownikoff law is not applicable :

- (1) 2-pentene (2) 2-butene (3) butane (4) propene

39. The minimum no. of C atom which are required to show chain isomerism in alkyne :

- (1) 5C (2) 4C (3) 2C (4) 3C

40. The pH value of a solution is zero. The nature of the solution will be:

- (1) both acid and base (2) neutral (3) acidic (4) basic

41. The approximate pH value of 10<sup>-10</sup> M NaOH solution will be:

- (1) -10 (2) 7 (3) 4 (4) 10

42. The percentage of chlorine in bleaching power is :

- (1) 85% (2) 58% (3) 35% (4) 12%

43. A compound n-pentane is found from how much type of hexanoic acid:

- (1) 5 (2) 4 (3) 2 (4) 3

44. Which of the following element has highest electron affinity :

- (1) I (2) Cl (3) Br (4) F

45. If one liter of a solution contains 5 ml. of N-HCl + 20 ml. of N/2 H<sub>2</sub>SO<sub>4</sub> + 30 ml. of N/3 HNO<sub>3</sub>, the normality of this solution will be:

- (1) N (2) N (3) N (4) N
-

40

10

5

20

46. The volume concentration of  $H_2O_2$  solution of 6.8 gm. per 100 ml. will be:

- (1) 20                      (2) 5.44                      (3) 11.2                      (4) 22.4

47. Which of the following is strongest oxidant :

- (1)  $I_2$                       (2)  $Cl_2$                       (3)  $Br_2$                       (4)  $F_2$

48. Froth floatation process is used to increase the concentration of the following are :

- (1) Chalcopyrite                      (2) Calamene                      (3) Hematite                      (4) Bauxite

49. Acetic acid is a weak acid because :

- (1) 1.85 gm. ions are formed by one lakh gms. Of acetic acid  
 (2) It is not a good conductor of electricity  
 (3) It reacts with reactive metals  
 (4) It is insoluble in water

50. Which of the following is extracted by making complex :

- (1) Ag                      (2) Fe                      (3) Hg                      (4) Cu

51. By which of the following reagent colour of acidic  $KMnO_4$  is disappeared :

- (1) Microcosmic salt                      (2) Mohr's salt                      (3) White vitriol                      (4) Bleaching powder

52. Which of the following hydride has reducing property:

- (1) HF                      (2)  $NH_3$                       (3)  $SiH_4$                       (4)  $CH_4$

53. The solution of sodium in liquid ammonja is appeared blue reason is :

- (1) presence of solvated  $e^-$   
 (2) solvated  $Na^+$   
 (3) presence of  $NH_4^+$  ion  
 (4) presence of Na atom

54. Which of the following has octane no. zero :

- (1) n-hexane                      (2) n-heptane                      (3) iso-octane                      (4) n-octane

55. The nos. of sigma bonds in 1-butene are:

- (1) 12                      (2) 10                      (3) 8                      (4) 11

56. The precipitate obtained when acetaldehyde is treated with fehling solution :

- (1) Ag                      (2)  $Cu_2O$                       (3) Cu                      (4) CuO

57. If the equilibrium constant of the reaction  $2HI \rightleftharpoons 2HI + H_2 + I_2$  is 0.25 then the equilibrium constant of the reaction  $H_2 + I_2 \rightleftharpoons 2HI$  will be :

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

58. The similarity of C-bonds in benzene is due to :

- (1) delocalised  $\pi$  electrons

- (2) alternate single and double bond in 6 CH groups
- (3) The closed chain structure of 6 CH group
- (4) All above

**59. Primary amine when reacts with  $\text{CHCl}_3 + \text{KOH}$  it forms:**

- (1) cyanide
- (2) isocyanate
- (3) isothiocyanate
- (4) isocyanide

**60. The solid methane is :**

- (1) not possible
- (2) amphoteric
- (3) basic
- (4) acidic

**61. Froath floatation process is depend upon:**

- (1) electric properties of ore particles
- (2) magnetic properties of ore particles
- (3) relative density of ore particles
- (4) the property by which ore particles become wet

**62. Which of the following ion has strongest capacity to polarise :**

- (1)  $\text{Li}^+$
- (2)  $\text{Ca}^{+2}$
- (3)  $\text{Cs}^+$
- (4)  $\text{Rb}^+$

**63. The size of the sulphate ion is :**

- (1) pyramidal
- (2) square planar
- (3) tetrahedral
- (4) triangular

**64. Which of the following bond is present in  $\text{N}_2\text{O}_5$  :**

- (1) covalent and coordinate bond
- (2) covalent and ionic bond
- (3) covalent bond
- (4) ionic bond

**65. By the theory of four quantum nos. which of the following orbital is not possible :**

- (1) 4d
- (2) 3s
- (3) 3f
- (4) 3d

**66. Which of the following compound is formed when  $\text{AgCl}$  is dissolved in hypo :**

- (1)  $\text{Na}_5[\text{Ag}(\text{S}_2\text{O}_3)]_6$
- (2)  $\text{Na}_3[\text{Ag}(\text{S}_2\text{O}_3)_2]$
- (3)  $\text{Na}_2[\text{Ag}(\text{S}_2\text{O}_3)]$
- (4)  $\text{Na}_3[\text{Ag}(\text{S}_2\text{O}_3)]_4$

**67. Natural gas is :**

- (1) a mixture of methane and octane
- (2) n-octane
- (3) n-butane
- (4) none of these

**68.  $\text{C O}_2$  is gas while  $\text{SiO}_2$  is solid because :**

- (1)  $\text{CO}_2$  is a weak acid
- (2) Si atom have 3d orbitals
- (3) Intermolecular bonds in  $\text{CO}_2$  are strong
- (4)  $\text{CO}_2$  and  $\text{SiO}_2$  are acidic in nature

**69. Which of the following molecule is not pyramidal :**

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- (1)  $\text{PH}_3$       (2)  $\text{NH}_3$       (3)  $\text{NCl}_3$       (4)  $\text{BCl}_3$

**70. Beryllium carbide on hydrolysis gives :**

- (1) Methane      (2) Acetylene      (3) Ethylene      (4) Methyl acetylene

**71. The best way to represent the concentration of a solution is :**

- (1) Mole fraction      (2) Molarity      (3) Normality      (4) Molality

**72. A one liter solution contains 0.1 M  $\text{CH}_3\text{COONa}$  and 0.05 M  $\text{HCl}$ .  $\text{P}_{\text{ka}}$  value of acetic acid is  $1.8 \times 10^{-5}$  then the pH value of the solution will be :**

- (1) 5.60      (2) 4.74      (3) 2.87      (4) 4.27

**73. Which of the following flux is used in the extraction of iron :**

- (1) flint      (2) lime stone      (3) feldspar      (4) silica

**74. If 1 mole urea is dissolved in 1000 gm. of pure water then the mole fraction of the water will be:**

- (1) 1000      (2) .999      (3) 0.98      (4) 1.00

**75. There is no dipole moment in  $\text{CCl}_4$  because of the :**

- (1) electron affinity of C and Cl are equal  
(2) lower size of C and Cl  
(3) regular tetrahedral structure  
(4) planar structure of molecule

**76. Which couple of the element shows oxidation state of + 8 :**

- (1) Cu and Cr      (2) Mn and Fe      (3) Ru and Os      (4) Cu and Zn

**77. The shape of xenonhexfluoride is :**

- (1) irregular octahedral  
(2) square planer  
(3) tetrahedral  
(4) triangular

**78.  $\text{C}_5\text{H}_{10}\text{O}$  reacts with  $\text{NH}_2\text{OH}$  but does not perform silver and iodoform test. The possible name of it is :**

- (1) secondary alcohol      (2) ketone      (3) gldehyde      (4) primary alcohol

**79. Which of the following is meta-directive group :**

- (1)  $-\text{NH}_2$       (2)  $-\text{CH}_3$       (3)  $-\text{OH}$       (4)  $-\text{NO}_2$

**80. The work of sodium thisulphale in photography is :**

- (1) to toning      (2) to do still      (3) as reducing agent      (4) as developer

**81. Which of the following isomerism is present in lactic acid :**

- (1) chain      (2) position      (3) geometric      (4) optical

**82. When  $\text{FeCl}_3$  is heated violet with one of the following colour is obtained :**

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- (1) Benzene      (2) Benzaldehyde      (3) Aniline      (4) Phenol
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**83. Benzene sulphonic acid is heated with NaOH to form :**

- (1) Ethanol      (2) Benzoic acid      (3) Benzene      (4) Phenol

**84. When benzenediazonium chloride is heated with H<sub>2</sub>O it forms :**

- (1) Diazobenzene      (2) Nitrobenzene      (3) Aniline      (4) Phenol

**85. By which of the following method sugar units are separated :**

- (1) Biuret      (2) HNO<sub>3</sub>      (3) Tollen's reagent      (4) Hydrolysis

**86. Aniline is separated by which of the following method :**

- (1) filter funnel  
(2) fractional distillation  
(3) steam distillation  
(4) none of above

**87. Two compounds of different solubility is separated by :**

- (1) extraction by solvent  
(2) fractional crystallization  
(3) sublimation  
(4) none of above

**88. Preparation of ethane by CH<sub>3</sub>Cl in presence of anhydrous ether is known as :**

- (1) Clemmenson's reduction  
(2) Decarbonylation  
(3) Kolbe's electrolysis method  
(4) Wurtz reaction

**89. The product of the reaction of CH<sub>2</sub>=CH<sub>2</sub> and dil. Basic KMnO<sub>4</sub> solution will be :**

- (1) epoxide      (2) propanol      (3) ethylene glycol      (4) ethyl alcohol

**90. The nos. of optical isomers of a compound having two chiral carbon atoms are :**

- (1) 5      (2) 4      (3) 3      (4) 2

**91. Which of the following is used as an indicator for titration of Na<sub>2</sub>CO<sub>3</sub> and H<sub>2</sub>SO<sub>4</sub> :**

- (1) Bromothimol blue      (2) phenol red      (3) Phenolphthalein      (4) Methyl orange

**92. Osmosis pressure relation is :**

- (1)  $\frac{P}{C} = RT$       (2)  $P = \frac{CT}{R}$       (3)  $R = \frac{PT}{C}$       (4)  $P = \frac{RC}{T}$

**93. In which of the following salt if dilution is increased there is no change in pH :**

- (1) CuSO<sub>4</sub>      (2) (NH)<sub>2</sub>SO<sub>4</sub>      (3) BaSO<sub>4</sub>      (4) K<sub>2</sub>CO<sub>3</sub>

**94. Formula of oleum is :**

- (1) H<sub>2</sub>S<sub>2</sub>O<sub>8</sub>      (2) H<sub>2</sub>SO<sub>5</sub>      (3) H<sub>2</sub>S<sub>2</sub>O<sub>4</sub>      (4) S<sub>2</sub>S<sub>2</sub>O<sub>7</sub>
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