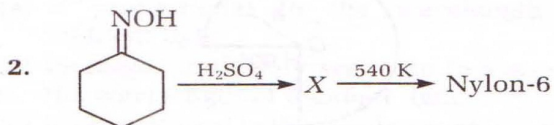
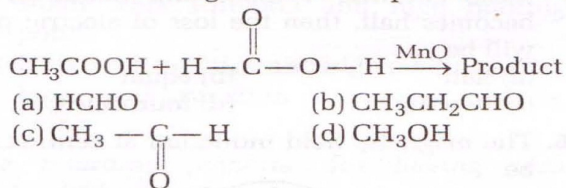
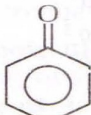


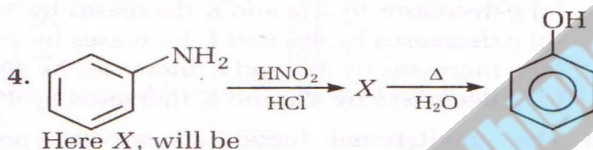
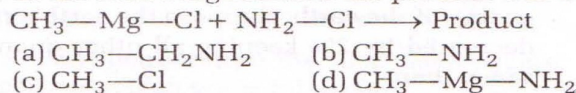
1. In the following reaction the product will be

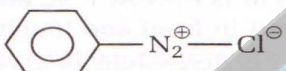
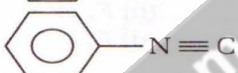



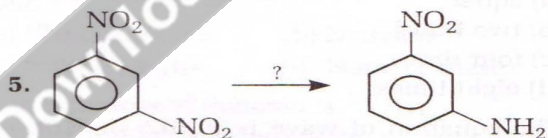
X, will be

- (a) caprolactum (b) phenol
(c)  (d) None of these

3. In the following reaction the product will be



- (a) 
(b) 
(c) 
(d) None of the above



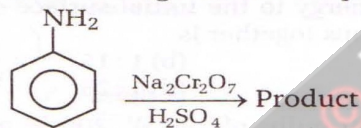
Above conversion is done by


- (a) Sn/HCl (b) SnCl₂ + HCl
(c) Na₂S (d) Na-Hg

6. Which of the following is nucleophilic pair ?

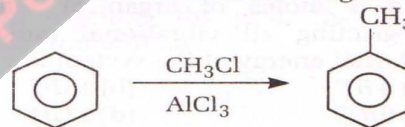
- (a) $\overset{\ominus}{\text{C}}\equiv\text{N}$, RS^{\ominus} (b) :Cl^{\ominus} , AlCl_3
(c) Br_2 , ZnCl_2 (d) $\overset{\ominus}{\text{R}}\overset{\oplus}{\text{Mg}}\text{X}$, H^{\oplus}

7. In the following reaction the product will be

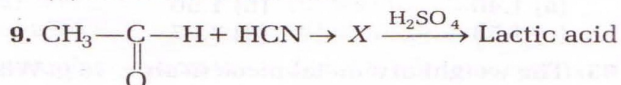


- (a) 
(b) phenol
(c) benzoic acid
(d) benzaldehyde

8. What is the name of the following reaction ?



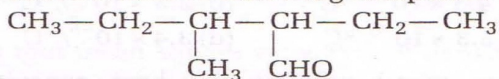
- (a) Friedel Craft's reaction
(b) Wurtz-Fittig reaction
(c) Perkin's reaction
(d) Frenkland reaction



In the reaction X, will be

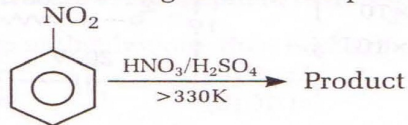
- (a) acetone
(b) acetic acid
(c) acetaldehyde cyanohydrin
(d) None of the above

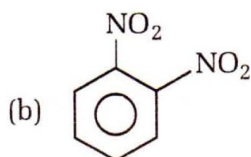
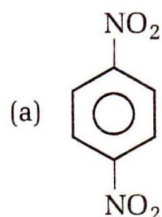
10. IUPAC name of following compound will be



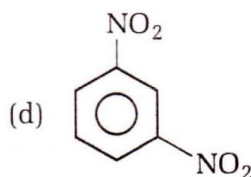
- (a) 2-isobutyl butanal
(b) 2-ethyl-3-methyl pentanal
(c) 3-methyl-4-ethyl pentanal
(d) 2,3-diethyl butanal

11. In the following reaction the product will be





(c) Both (a) and (b)



12. Which of the following has bond dissociation energy 600 k J/mol ?

- (a) $\text{N}\equiv\text{N}$ (b) $\text{C}-\text{H}$
(c) $\text{C}=\text{C}$ (d) $\text{H}-\text{H}$

13. LiAlH_4 is

- (a) a reducing agent
(b) a oxidising agent
(c) a electrophilic agent
(d) a nucleophilic agent

14. The reaction mechanism of the following reaction is done by

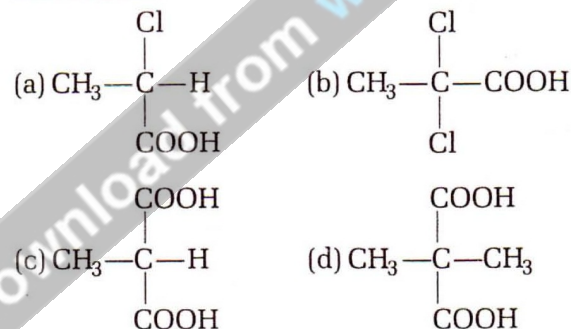


- (a) free radical mechanism
(b) nucleophilic addition and attack
(c) electrophilic addition
(d) nucleophilic substitution

15. K_2MnO_4 reacts with O_3 to form

- (a) KMnO_4 (b) $\text{Mn}(\text{OH})_2$
(c) MnO_2 (d) None of these

16. Which of the following shows optical isomerism?



17. Which of the following is not an ore of magnesium ?

- (a) Magnesite (b) Dolomite
(c) Gypsum (d) Carnalite

18. Nitrobenzene on electrolytic reduction with conc. H_2SO_4 gives

- (a) *p*-aminophenol (b) *o*-aminophenol
(c) *m*-aminophenol (d) Both (a) and (b)

19. Bond order in O_2 is

- (a) 1 (b) 2
(c) 1.5 (d) 2.5

20. Electron affinity of nitrogen is

- (a) 0.21 (b) 3
(c) 10.2 (d) 13.2

21. Which of the following test is not given by benzoic acid ?

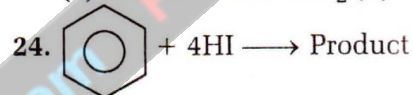
- (a) It gives CO_2 with NaHCO_3
(b) Soluble in hot medium and separates on cooling.
(c) It gives buff's colour with FeCl_3 solution
(d) It gives Libermann's nitroso test

22. How much O_2 is required for the complete combustion of 1 L C_3H_8 ?

- (a) 0.2 L (b) 0.5 L
(c) 5 L (d) 4.8 L

23. Which product is obtained, when C_2H_2 passes from red hot copper tube?

- (a) C_6H_6 (b) Butadiene
(c) $\text{CH}\equiv\text{C}-\text{CH}=\text{CH}_2$ (d) C_2H_4



The product will be

- (a) iodobenzene (b) cyclohexene
(c) cyclohexane (d) None of these



In acidic medium solution will be

- (a) red (b) yellow
(c) blue (d) colourless

26. When a solution passes from a membrane, then the solvent particles pass from the membrane but solute particles does not pass. The membrane is

- (a) osmosis membrane
(b) diffusion membrane
(c) semi-permeable membrane
(d) osmotic pressure

27. Ethene and ethyne are distinguished by

- (a) Baeyer's reagent (b) Tollen's reagent
(c) Hager's reagent (d) None of these

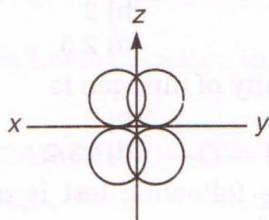
28. Which of the following shows peroxide effect?

- (a) HBr (b) HF
(c) HCl (d) HI

29. Structure of electron cloud of acetylene is

- (a) two cylindrical π -cloud
(b) unsymmetrical
(c) triangular symmetrical
(d) None of the above

30. The plane in triangular hybridization will be

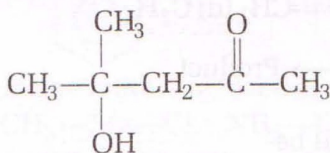
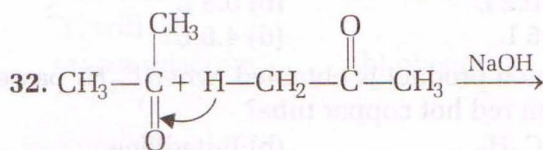


- (a) xy (b) yz
(c) zx (d) $x^2 - y^2$

31. Methane + 10% $O_2 \xrightarrow[200^\circ C]{Cu\ tube}$ Product; product

will be

- (a) CH_3OH (b) $HCHO$
(c) CH_3CHO (d) C_2H_5OH



The above reaction is called

- (a) Aldol reaction
(b) Cannizzaro reaction
(c) Schmidt reaction
(d) Tischenko reaction
33. Acidic hydrolysis of acetoacetic ester gives
(a) acetone (b) acetic acid
(c) acetaldehyde (d) methanol

34. pH of rain water is

- (a) 7 (b) 14
(c) 0 (d) 10

35. When $[H^+]$ ion concentration is greater than 10^{-7} then solution will be

- (a) acidic (b) basic
(c) neutral (d) None of these

36. Henderson's equation is

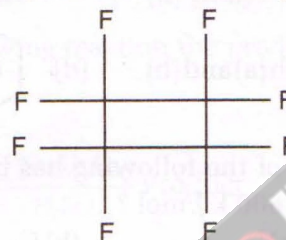
- (a) $pH = pK_a + \log \frac{[salt]}{[acid]}$
(b) $pK_a = pH - \log \frac{[salt]}{[acid]}$
(c) $pH = pK_a - \log \frac{[salt]}{[acid]}$
(d) $pK_a = pH + \log \frac{[salt]}{[acid]}$

37. $\Delta p \times \Delta x \approx \frac{h}{4\pi}$

This law is given by

- (a) Schrodinger (b) Heisenberg's
(c) de-Broglie (d) Pauli

38. The correct name of the following freon is



- (a) Freon-11 (b) Freon-318
(c) Freon-12 (d) Freon-114

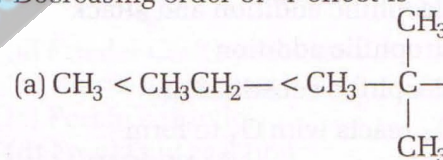
39. HF reacts with $CFCl_3$ in the presence of SbF_5 to give

- (a) Freon-11 (b) Freon-12
(c) Freon-318 (d) Freon-114

40. Dilute NaCl is

- (a) basic (b) acidic
(c) neutral (d) strong acidic

41. Decreasing order of $-I$ effect is



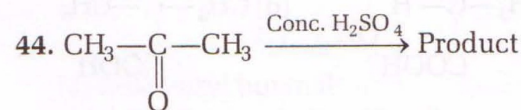
- (b) $NO_2 < COOH < Cl$
(c) $Cl > Br > I$
(d) $Br > Cl > I$

42. pH of 0.1 mL M HCl is

- (a) 1 (b) 3
(c) 2 (d) 4

43. Which of the following shows the minimum ionic character?

- (a) AgI (b) $MgCl_2$
(c) $Ba(NO_3)_2$ (d) $HgSO_4$



Product will be

- (a) phorone (b) mesitylene
(c) paraformaldehyde (d) None of these

45. $CHCl_3 + Ag \longrightarrow$ Product

Product be in this reaction

- (a) CH_4 (b) C_2H_2
(c) C_2H_6 (d) C_2H_4

46. Given $K_a = 6 \times 10^{-4}$, $K_{a_2} = 1.5 \times 10^{-4}$
The ratio of relative acidic strength is
(a) 4 (b) 2
(c) 1 (d) 3
47. The second Bohr's radius of hydrogen atom is
(a) 0.529 Å (b) 3.125 Å
(c) 2.1165 Å (d) 4.2 Å
48. Which of the following subshell has ten electron ?
(a) 3d (b) 2p
(c) 4s (d) 3p
49. In the following reaction
$$\text{H}_3\text{N} + \text{BF}_3 \longrightarrow \text{NH}_3 \longrightarrow \text{BF}_3$$

(a) BF_3 is base, NH_3 is acid
(b) NH_3 is base, BF_3 is acid
(c) Both are acid
(d) Both are base
50. Which of the following compound has not hydrogen bond ?
(a) NH_3 (b) H_2O
(c) HCl (d) HF
51. Correct order of electron affinity is
(a) $\text{F} > \text{Cl} > \text{Br} > \text{I}$ (b) $\text{I} > \text{Br} > \text{Cl} > \text{F}$
(c) $\text{Br} > \text{I} > \text{F} > \text{Cl}$ (d) $\text{Cl} > \text{F} > \text{Br} > \text{I}$
52. Nylon-66 is made of
(a) hexamethylene diamine
(b) thiokol rubber
(c) *cis*-polyisoprene
(d) *trans*-polyisoprene
53. Number of conformational isomers of *n*-butane are
(a) 3 (b) 4
(c) 6 (d) 10
54. When pH increases from 2 to 4 then concentration
(a) increases 100 times
(b) decreases 100 times
(c) decreases 1000 times
(d) increases 1000 times
55. Which of the following will give carbylamine reaction ?
(a) CH_3NH_2 (b) $(\text{CH}_3)_2\text{NH}$
(c) $(\text{CH}_3)_3\text{N}$ (d) $(\text{CH}_3)_4\text{N}^{\oplus}$
56. Magnetic moment of Cu^+ is
(a) 2.59 (b) 0
(c) 3.2 (d) 5.1
57. Gangue is removed from its ore by
(a) concentration (b) calcination
(c) roasting (d) smelting
58. For 2a, 3b, c the Miller indices will be
(a) 2, 3, 1 (b) 1, 2, 4
(c) 3, 2, 6 (d) 1, 2, 3
59. The wavelength of photon of yellow light is 5890 Å. Its energy will be
(a) 2.3 erg (b) 3.37×10^{-12} erg
(c) 4.1×10^{-8} erg (d) 1.5×10^{-2} erg
60. Na conducts the electricity because
(a) it releases hydrogen on reaction with water
(b) it contains movable electron
(c) it consists hydration energy
(d) it consists combustion energy
61. All d-block elements are
(a) metal (b) non-metal
(c) Both (a) and (b) (d) None of these
62. Sodium reacts with oxygen to form
(a) monoxide (b) peroxide
(c) superoxide (d) NaOH
63. On moving from top to bottom (from Be^{2+} to Ba^{2+}) the degree of hydration
(a) decreases
(b) increases
(c) first decreases and then increases
(d) first increases and then decreases
64. From Be^{2+} to Ba^{2+} , on moving from top to bottom the ionic radius
(a) decreases
(b) increases
(c) first decreases and then increases
(d) first increases and then decreases
65. Haematite is
(a) Fe_2O_3 (b) Fe_3O_4
(c) FeCO_3 (d) $\text{Fe}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$
66. $\text{K}_2\text{Cr}_2\text{O}_7 \longrightarrow \text{Cr}^{3+}$
In the above process, oxidation number of Cr changes to
(a) from 6 to 3 (b) from -6 to 3
(c) from +3 to 0 (d) from +6 to 0
67. For $n = 1, T = 1, R = \text{constant}$, the relationship between osmotic pressure and volume is
(a) $p \propto V$ (b) $p \propto \frac{1}{V}$
(c) $p = V$ (d) None of these
68. Which of the following has $1s^2, 2s^2 2p^6, 3s^2 3p^6, 4s^1$ configuration ?
(a) K (b) Al
(c) Na (d) Ca

69. Which of the following has maximum ionization energy?
 (a) (I, I⁺) (b) (Br, Br⁺)
 (c) (Li, Li⁺) (d) (Cu, Cu⁺)
70. The reaction is used in bessemerisation process
 (a) $\text{Cu}_2\text{S} + 2\text{Cu}_2\text{O} \longrightarrow 6\text{Cu} + \text{SO}_2$
 (b) $\text{Si} + \text{O}_2 \longrightarrow \text{SiO}_2$
 (c) $\text{Fe}_2\text{O}_3 + 3\text{C} \longrightarrow 2\text{Fe} + 3\text{CO}$
 (d) $4\text{Fe} + 3\text{O}_2 \longrightarrow 2\text{Fe}_2\text{O}_3$
71. Which of the following relationship is correct for reversible reaction, $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$?
 (a) $K_p < 1$ (b) $K_p = K_c$
 (c) $K_p > 1$ (d) None of these
72. For an exothermic reaction, the favourable condition to obtain maximum product is
 (a) low pressure
 (b) low concentration of reactants
 (c) low temperature
 (d) high pressure
73. When CaO dissolves in water, then heat releases. On increasing temperature its solubility
 (a) increases
 (b) decreases
 (c) unchanged
 (d) first increases, then decreases
74. For bcc structure of Na, crystal $N_0 = 6 \times 10^{23}$, atomic weight of Na = 23, radius = 5 Å, then density will be
 (a) 0.6 g/cm³ (b) 1.2 g/cm³
 (c) 0.4 g/cm³ (d) 1.0 g/cm³
75. Rate of zero order reaction does not depend on
 (a) volume (b) temperature
 (c) time (d) concentration
76. Size of colloidal particle is between
 (a) 1 Å - 100 Å (b) 10 Å - 2000 Å
 (c) 1000 Å - 2000 Å (d) >2000 Å
77. When any 2 g solute dissolves in 50 g water than boiling point comes 100.5°C. If $K_b = 0.5$ then molecular weight will be
 (a) 4 (b) 40
 (c) 80 (d) 100
78. Which of the following is not a characteristic of colloidal particles?
 (a) They pass from filter paper easily.
 (b) They are invisible.
 (c) They forms heterogeneous mixture.
 (d) They pass from parchment paper.
79. On moving left to right the correct order of hybridization of carbon atoms in compound $\text{CH}_3-\text{CH}=\text{C}=\text{CH}_2$.
 (a) sp^3, sp^2, sp, sp^2 (b) sp^2, sp, sp^2
 (c) sp, sp^2, sp^2, sp^3 (d) sp^3, sp^2, sp^2, sp
80. In the following reaction X will be

$$\text{X} + \text{Br}_2 + \text{KOH} \longrightarrow \text{CH}_3\text{NH}_2$$

 (a) $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{NH}_2$ (b) $\text{CH}_3-\text{CH}_2-\text{NH}_2$
 (c) CH_3-NO_2 (d) $\text{CH}_3-\text{CH}_2-\text{NO}_2$
81. Sodium lauryl sulphate is an example of
 (a) neutral detergent (b) cationic detergent
 (c) anionic detergent (d) soap detergent
82. $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{Cl} + \text{KCN} \rightarrow \text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{CN} \xrightarrow{\text{H}_2\text{O}} \text{X}$
 Here X will be
 (a) $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{COOH}$ (b) $\text{CH}_3-\text{CH}_2-\text{COOH}$
 (c) CH_3COOH (d) None of these
83. The correct order of acidic strength of following
 I. $\text{F}-\text{CH}_2-\text{COOH}$ II. $\text{Cl}-\text{CH}_2-\text{COOH}$
 III. $\text{Br}-\text{CH}_2-\text{COOH}$
 (a) I > II > III (b) III > II > I
 (c) II > III > I (d) II > I > III
84. In the following reaction product will be

$$\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{ONH}_4 \xrightarrow{\text{P}_4\text{O}_{10}} \text{Product}$$

 (a) $\text{CH}_3-\text{C}\equiv\text{N}$ (b) $\text{CH}_3\text{CH}_2\text{NH}_2$
 (c) $\text{CH}_3-\overset{\text{O}}{\parallel}{\text{C}}-\text{NH}_2$ (d) CH_3COOH
85. In the following reaction product will be

$$n\text{CH}_2=\text{CH}-\overset{\text{O}}{\parallel}{\text{C}}-\text{CH}_3 \xrightarrow{\text{Polymerization}} \text{Product}$$

 (a) polyvinyl acetate (b) polyacrylonitrile
 (c) vinyl acetate (d) acrylonitrile
86. Electricity is
 (a) mostly positive
 (b) always negative
 (c) sometime positive and sometime neutral
 (d) sometime positive and sometime negative

87. Acetic acid is polar in nature but soluble in non-polar solvents because
 (a) it forms dimer (b) entropy increases
 (c) enthalpy decreases (d) None of these
88. The ratio of butadiene and styrene in Buna-S polymer is
 (a) 1 : 1 (b) 1 : 2
 (c) 3 : 1 (d) 1 : 3
89. An organic compound is purified by electrolytic purification method. It was proposed by
 (a) Kolbe (b) Wurtz
 (c) Frenkland (d) Clemmensen
90. IUPAC name of following compound is

$$\begin{array}{c} \text{H}_3\text{C} \\ \diagdown \\ \text{CH}-\text{CH}=\text{CH}_2 \\ \diagup \\ \text{H}_3\text{C} \end{array}$$

 (a) vinyl propene
 (b) 1-isopropene ethylene
 (c) 2-methyl-3-butene
 (d) 3-methyl-1-butene
91. Name the compound which obtains sufficient energy for combustion on stirring
 (a) methanol (b) chloroform
 (c) ether (d) power alcohol
92. Which of the following smell comes, when some drops of H_2SO_4 adds in acetate solution?
 (a) Apple like smell (b) Banana like smell
 (c) Vinegar like smell (d) White precipitate
93. Which of the following is the most stable?
 (a) Methane (b) Ethane
 (c) Butane (d) Propane
94. Mixture of camphor and benzoic acid can be separated by
 (a) sublimation
 (b) extraction with a solvent
 (c) chemical method
 (d) fractional crystallisation
95. Which of the following is the example of double salt?
 (a) Potash alum (b) Hypo
 (c) $\text{K}_4[\text{Fe}(\text{CN})_6]$ (d) Bleaching powder
96. On passing 1F electricity in acid solution, the oxygen liberates
 (a) 11.2 dm^3 (b) 5.6 dm^3
 (c) 22.4 dm^3 (d) 1.0 dm^3
97. Example of colloidal solution is
 (a) alkaline solution of $\text{C}_6\text{H}_5\text{COOH}$
 (b) aqueous solution of NH_2CONH_2
 (c) milk
 (d) None of the above
98. Which of the following is not an example of molecular crystal?
 (a) Hydrogen (b) Iodine
 (c) Ice (d) Sodium chloride
99. Oxidation number of 'N' in N_3H is
 (a) $-\frac{1}{3}$ (b) + 3
 (c) 0 (d) - 3
100. Chloramphenicol is used for curing in which of the following?
 (a) Tuberculosis (b) Typhoid
 (c) Headache and fever (d) Cough

Answer – Key

1. c	2. a	3. b	4. a	5. c	6. a	7. a	8. a	9. c	10. b
11. d	12. c	13. a	14. c	15. a	16. a	17. c	18. a	19. b	20. a
21. d	22. c	23. a	24. b	25. a	26. c	27. b	28. a	29. a	30. a
31. a	32. a	33. b	34. a	35. a	36. a	37. b	38. b	39. b	40. c
41. c	42. d	43. d	44. b	45. b	46. b	47. c	48. a	49. b	50. c
51. d	52. a	53. b	54. b	55. a	56. b	57. a	58. c	59. b	60. b
61. a	62. b	63. a	64. b	65. a	66. a	67. b	68. a	69. b	70. a
71. b	72. c	73. b	74. a	75. c	76. b	77. b	78. d	79. a	80. a
81. c	82. a	83. a	84. a	85. a	86. b	87. a	88. a	89. a	90. d
91. c	92. c	93. a	94. c	95. a	96. b	97. c	98. d	99. a	100. b