

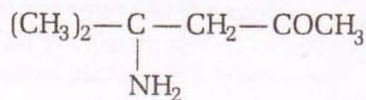
1. The central atom of which molecule has different hybridization from the following similar structure molecules?
 (a) Cl_2O (b) OF_2
 (c) H_2O (d) SO_2
2. The solubility product of calcium sulphate is 1×10^{-10} . What will be the concentration of calcium ions in its saturated solution?
 (a) 1×10^5 (b) 1×10^{10}
 (c) 1×10^{-5} (d) 1×10^{-10}
3. Hydrogen halide reacts with unsymmetrical alkene to form
 (a) a primary alkyl halide
 (b) a gem dihalide
 (c) a primary or secondary alkyl halide
 (d) a secondary or tertiary alkyl halide
4. Which of the following is not matching?
 (A) Methane nitrile HCN
 (B) *Iso*-butyric acid $(\text{CH}_3)_3\text{C}-\text{COOH}$
 (C) Acetonitrile $\text{CH}_3-\text{C}\equiv\text{N}$
 (D) Crotonic acid $\text{CH}_3-\text{CH}=\text{CH}-\text{COOH}$
 (a) A and B (b) A and C
 (c) A and D (d) B and C
5. Which of the following is favourable condition for the formation of ammonia in equilibrium reaction

$$\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3 + 22 \text{ kcal ?}$$
 (a) increase in pressure
 (b) increase in temperature
 (c) decrease in pressure
 (d) increase in the concentration of ammonia
6. For the complete reduction of a molecule of $\text{K}_2\text{Cr}_2\text{O}_7$ the number of electrons are required
 (a) 3 (b) 4
 (c) 5 (d) 6
7. 23.0g ethanol vapours are passed on hot alumina. If 50% change is completed then the quantity of organic product (molecular weight = 28) in gram will be
 (a) 14 g (b) 7.0 g
 (c) 11 g (d) 11.5 g
8. Which of the following pair has the same oxidation number of sulphur and chromium?
 (a) SO_3^{2-} , CrO_4^{2-}
 (b) SO_3 , CrO_4^{2-}
 (c) SO_2 , CrO_4^{2-}
 (d) SO_2 , $\text{Cr}_2\text{O}_7^{2-}$
9. Which of the following sodium acetate solution will show minimum pH?
 (a) 0.01 M (b) 0.001 M
 (c) 0.0001 M (d) 0.1 M

10. Which of the following is not matching ?

(a) Isoprene $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$

(b) Diacetoneamine



(c) Pyrene CCl_4

(d) Chloroform $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH}-\text{CCl}_3 \\ | \\ \text{OH} \end{array}$

11. Which is suitable for the test of primary amine?

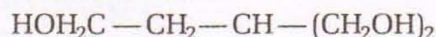
(a) Chlorine

(b) Acetyl chloride

(c) Chloroform and alkali

(d) Alkyl chloride

12. The IUPAC name of



(a) 3-hydroxy methyl-1, 4-butane diol

(b) 2-hydroxy methyl-1, 4-butane diol

(c) 2-hydroxy methyl-4-hydroxy butanol

(d) 3-hydroxy methyl-4-hydroxy butanol

13. Which reagent is used for distinguishing in methanol and ethanol?

(a) Schiff reagent

(b) Lucas reagent

(c) $\text{I}_2 + \text{NaOH}$

(d) Chromic acid

14. Ethene and ethyne can be distinguished by the reaction of

(a) dil. alkaline KMnO_4

(b) I_2 and NaOH

(c) ammoniacal Cu_2Cl_2

(d) anhydrous $\text{ZnCl}_2 + \text{conc. H}_2\text{SO}_4$

15. The structure of PCl_5 and number of σ -bonds in it are

(a) square planar, 5

(b) distorted tetrahedral, 4

(c) trigonal bipyramidal, 5

(d) trigonal pyramidal, 4

16. Which compound has octane number 100?

(a) 2, 2, 4-trimethyl pentane

(b) *Iso*-heptane

(c) *n*-heptane

(d) *n*-octane

17. Which of the following gives haloform reaction?

(a) Acetaldehyde

(b) Propionaldehyde

(c) *Iso*-butyraldehyde

(d) All of the above

18. A carbonyl compound (A) forms compound (B) on reaction with HCN . By the hydrolysis of compound (B), compound (C) is obtained. The compound (C) shows optical isomerism and give iodoform test. Compound (A), is

(a) formaldehyde

(b) acetaldehyde

(c) acetone

(d) None of these

19. The percentage of nitrogen will be equal in oximes of which of the following compound pairs?

(a) Acetone and acetaldehyde

(b) Acetone and propionaldehyde

(c) Acetone and acraldehyde

(d) Acetaldehyde and acraldehyde

20. Benzene reacts with chlorine in the presence of UV-light to give

(a) chlorobenzene

(b) hexachlorocyclohexane

(c) hexachlorobenzene

(d) 1, 3, 5-trichlorobenzene

21. Which of the following is not matching?

(a) Fool's gold

FeS_2

(b) Philosopher's wool

ZnO

(c) Calomel

Hg_2Cl_2

(d) Lunar caustic

AgCl

22. Match the list-I with list-II and choose the correct set from the sets, which are given below

List-I	List-II
(A) Number of sub-energy levels in a energy level	1. n^2
(B) Number of orbitals in a sub-energy level	2. $3d$
(C) Number of orbitals in a energy level	3. $2l+1$
(D) $n=3, l=2, m=0$	4. n

Codes

	A	B	C	D
(a)	4	3	1	2
(b)	3	1	2	4
(c)	1	2	3	4
(d)	3	4	1	2

23. Which of the following compound is colourless and odourless?

(a) CH_3NC

(b) CHI_3

(c) CHCl_3

(d) CF_2Cl_2

24. Electron affinity is the characteristic of an
 (a) isolated atom
 (b) combined atom
 (c) gaseous isolated atom in ground state
 (d) gaseous isolated atom in excited state
25. The highest atomic number radioactive element in *p*-block element is
 (a) Pb (b) Te
 (c) Rn (d) Po
26. From the following ores, the set of sulphide and carbonate ores is
 I. Cinnabar II. Calamine
 III. Copper glance IV. Siderite
 V. Corundum VI. Magnetite
 (a) I, III, V, VI (b) I, II, III, IV
 (c) I, II, V, VI (d) II, III, IV, V
27. Which of the following statement is false?
 (a) All methyl ketones give iodoform test
 (b) All secondary alcohols give iodoform test
 (c) Methanol forms from the catalytic oxidation of methane
 (d) Rate of esterification of alcohol $1^\circ > 2^\circ > 3^\circ$
28. Which of the following is correctly matched?
 (a) Maximum electronegativity element—Cl
 (b) Number of *d*-electrons in chromium—6
 (c) Cation with pseudo inert gas structure— Zn^{2+}
 (d) Number of unpaired electrons in Fe^{3+} ion—4
29. Acetaldehyde changes to a sweet-smell liquid on reaction with aluminium ethoxide. This liquid is
 (a) $CH_3COOC_2H_5$ (b) CH_3COOH
 (c) CH_3CH_2OH (d) $(CH_3O)_3Al$
30. Which of the following is obtained from the reaction of formaldehyde with dil. alkali?
 (a) A polymer
 (b) Salt of formic acid
 (c) Methyl alcohol
 (d) Methyl alcohol and salt of formic acid
31. Which of the following reagent releases nitrogen, on reaction with ethyl amine?
 (a) Nitrosyl chloride (b) Acetyl chloride
 (c) Carbon disulphide (d) Benzoyl chloride
32. Which of the following is correctly matched?
 (A) C_6H_6 (Benzene) : All C-atom are sp^2 hybridized
 (B) $(CH_3)_4C$: All C-atom are sp^3 hybridized
 (C) $HC \equiv C - CH = CH_2$: Four C-atom are sp -hybridized
 (D) $(CH_3)_2C = CH_2$: Three C-atom are sp^2 hybridized
 (a) A, B (b) A, C
 (c) A, D (d) B, C
33. The equilibrium of aqueous solution of H_2S is as
 $H_2S \rightleftharpoons H^+ + HS^-$
 On adding HCl at equilibrium
 (a) concentration of HS^- will increase
 (b) concentration of HS^- will decrease
 (c) dissociation of H_2S will increase
 (d) dissociation of H_2S will stop
34. The density of ice is less than water because
 (a) ice floats on water
 (b) the structure of ice is three dimensional with porous
 (c) H-bond does not present in ice
 (d) water is a polar solvent
35. Which of the following is not correctly matched?
 (a) $CHCl_3 + CH_3 - \overset{\overset{O}{||}}{C} - CH_3 \longrightarrow$ a solvent
 (b) $C_2H_5OH + CaOCl_2 \longrightarrow$ a anaesthetic
 (c) $CH_3CHO + I_2 + NaOH \longrightarrow$ a yellow colour precipitate
 (d) $CHCl_3 + HNO_3 \longrightarrow$ a war gas
36. Which of the following set is correctly matched?
 (a) $n = 3, \quad l = 3, m = 0, \quad s = +\frac{1}{2}$
 (b) $n = 3, \quad l = 2, m = -3, \quad s = +\frac{1}{2}$
 (c) $n = 3, \quad l = 3, m = -3, \quad s = -\frac{1}{2}$
 (d) $n = 3, \quad l = 2, m = -1, \quad s = -\frac{1}{2}$
37. Which of the following is deposited as thin layer in galvanised iron?
 (a) Aluminium (b) Zinc
 (c) Tin (d) White lead
38. The value of energy will increase in sub-energy level
 (a) on increasing the value of principal quantum number
 (b) on increasing the value of azimuthal quantum number
 (c) on increasing the value of both principal quantum number and azimuthal quantum number
 (d) on increasing the value of spin quantum number

39. The outermost structure of an atom A is ns^2, np^3 . This compound does not form AF_5 . Which of the following statement is false in the given reference?

- (a) A is element of second period
 (b) d -electron is not in A
 (c) The value of n is less than three
 (d) A cannot form tetrahedral compound

40. Which forms on the reaction of propyne with dil. H_2SO_4 in the presence of mercuric ion?

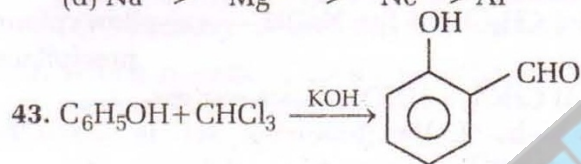
- (a) 2-propanol (b) Propanone
 (c) Propanal (d) 1, 2-propane diol

41. Which alkene forms only ethanal on ozonolysis?

- (a) 1-butene (b) 2-butene
 (c) Propene (d) *Iso*-butylene

42. Which of the following is correct order of radius?

- (a) $K^+ > Ca^{2+} > Sc^{3+} < Ti^{4+}$
 (b) $S^{2-} > Cl^- > Ar < K^+$
 (c) $O^{2-} > F^- > Ne > Na^+ > Mg^{2+}$
 (d) $Na^+ > Mg^{2+} > Ne > Al^{3+}$



The intermediates are formed in this reaction are

- (a) phenoxide ion and dichlorocarbene
 (b) $C_6H_5O^-$ and $:Cl_2$
 (c) $C_6H_5O^-$ and $:CCl_3$
 (d) $C_6H_5O^-$ and $:CHCl$

44. The colour of methyl orange in basic medium is

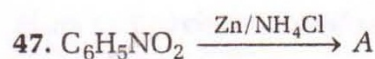
- (a) red (b) colourless
 (c) yellow (d) orange

45. The stability order of carbonium ion is

- (a) $3^\circ > 2^\circ > 1^\circ > CH_3$
 (b) $3^\circ < 2^\circ > 1^\circ < CH_3$
 (c) $3^\circ < 2^\circ > 1^\circ > CH_3$
 (d) $3^\circ < 2^\circ < 1^\circ < CH_3$

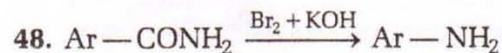
46. The density of Na is higher than K because

- (a) ionisation potential of Na is greater than K
 (b) size of Na is smaller than K
 (c) atomic weight of K is greater than Na
 (d) only eight electrons are present in third shell of K



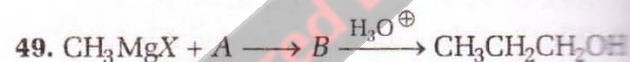
Compound A, is

- (a) phenyl hydroxyl amine
 (b) nitrosobenzene
 (c) azobenzene
 (d) *p*-aminophenol



This reaction is

- (a) Hofmann mustard oil reaction
 (b) Hofmann bromamide reaction
 (c) Hofmann martius rearrangement
 (d) Hofmann carbylamine reaction



Compound A, in the above reaction is

- (a) CH_3CH_2CHO (b) CH_3CHO
 (c) $(CH_2)_2O$ (d) $(CH_3)_2CO$

50. The same magnetic moment ions are

- (a) Cu^+, Fe^{3+} (b) Mn^{2+}, Fe^{3+}
 (c) Cu^{2+}, Fe^{2+} (d) Mn^{2+}, Ti^{2+}

51. Which of the following presents in sapphirine?

- (a) Al_2O_3 (b) Ag_2O
 (c) Cu_2O (d) MnO

52. The set of oxidation numbers of nitrogen in ammonium nitrate is

- (a) -3, +3 (b) -1, +1
 (c) +1, -1 (d) -3, +5

53. The formula of microcosmic salt is

- (a) $Na_2HPO_4 \cdot 2H_2O$
 (b) $NaNH_4HPO_4 \cdot 4H_2O$
 (c) $(NH_4)_2HPO_4$
 (d) $Na_2NH_4PO_4 \cdot 2H_2O$

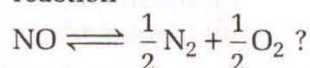
54. Which of the following set is correct on the basis of following lists?

- | List-I | List-II |
|----------------------|------------------|
| (A) $NH_2CONHNO_2$ | 1. Biuret |
| (B) $(C_6H_5NH)_2CO$ | 2. Semicarbazide |
| (C) $NH_2CONHNH_2$ | 3. Nitrourea |
| (D) $NH_2CONHCONH_2$ | 4. Diphenyl urea |

Codes

	A	B	C	D
(a)	3	4	2	1
(b)	3	1	2	4
(c)	3	2	1	4
(d)	3	1	4	2

55. For equilibrium reaction, $N_2 + O_2 \rightleftharpoons 2NO$ at definite temperature $K_c = 121$. What will be the value of K_c for following equilibrium reaction



- (a) 11 (b) $\frac{1}{121}$
 (c) $\frac{1}{11}$ (d) 121
56. Molten NaCl conducts the electricity because it contains
 (a) free atom (b) free molecule
 (c) free ion (d) free electron
57. The vapour density of PCl_5 at $300^\circ C$ is 60. Its dissociation percentage will be at this temperature
 (a) 73 (b) 77
 (c) 83 (d) 87
58. Starch \xrightarrow{A} Maltose \xrightarrow{B} Glucose
 \xrightarrow{C} Ethyl alcohol

In this reaction A, B, C are respectively

- (a) Invertase, zymase, maltase
 (b) Diastase, maltase, zymase
 (c) Invertase, maltase, zymase
 (d) Zymase, maltase, invertase
59. The pair of isoelectronic species is
 (a) N_2 , CO (b) CO_3^{2-} , NO_3^-
 (c) NO_3^- , HCO_3^- (d) All of these
60. Which alcohol gives blue colour in Victor Meyer's test?
 (a) Butyl alcohol
 (b) *Iso*-butyl alcohol
 (c) Secondary butyl alcohol
 (d) Tertiary butyl alcohol
61. Which of the following functional groups set is deactivating and *m*-directing?
 (a) $-CN$, $-NH_2$, $-OH$
 (b) $-CHO$, $-OCH_3$, $-SO_3H$
 (c) $-NO_2$, $-CHO$, $-SO_3H$
 (d) $-Cl$, $-CH_3$, $-NHCOCH_3$

62. The melting point of $SnCl_4$ is less than $SnCl_2$ because in comparison of Sn^{2+}
 (a) the size of Sn^{4+} is smaller
 (b) more positive charge on Sn^{4+}
 (c) the ionization potential of Sn^{4+} is more
 (d) the structure of $SnCl_4$ is tetrahedral

63. Phenol $\xrightarrow{NaNO_2 + \text{conc. } H_2SO_4}$ dark colour $\xrightarrow{\text{alkali}}$ blue colour

This reaction is called

- (a) Lederer Mannasse reaction
 (b) Libermann nitroso reaction
 (c) Coupling reaction
 (d) Lucas test
64. The atomic number of an element is 20. In which period of Periodic Table it will be placed?
 (a) 1 (b) 2
 (c) 3 (d) 4

65. For the dissociation of formic acid, acetic acid and carbonic acid the value of pK_a is 3.62, 4.74 and 6.3 respectively. Which of the following statement is correct?

- (a) Formic acid is the strongest acid
 (b) Acetic acid is the weakest acid
 (c) Carbonic acid is the strongest acid
 (d) Acetic acid is weaker than carbonic acid

66. Which of the following acid does not contain $-COOH$ group?

- (a) Lactic acid (b) Barbituric acid
 (c) Succinic acid (d) Carbonic acid

67. Which of the following statement is false?

- (a) Electron absorbs energy on transition from lower energy level to higher energy level.
 (b) Electron cannot fall in nucleus from third energy level.
 (c) Electron emits energy on transition from higher energy level to lower energy level.
 (d) Electron emits energy spontaneously in its ground state.

68. For the hydrolysis reaction



Which of the following relationship is not applicable?

- (a) $K_h = \frac{K_w}{\sqrt{K_a(HCN)}}$ (b) $h = \sqrt{\frac{K_h}{C}}$
 (c) $pH = \frac{1}{2} pK_a(HCN)$ (d) $H^+ = \sqrt{\frac{K_w \times K_a}{C}}$

69. Match the given molecule in list-I with given structure in list-II and choose the correct set from the given sets.

List-I	List-II
(A) AX_3E_2	1. Trigonal pyramidal
(B) AX_5	2. T-structure
(C) AX_2E_2	3. Trigonal bipyramidal
(D) AX_3E	4. Angular

(A = Central atom and E = number of lone pairs electrons)

Codes

	A	B	C	D
(a)	2	3	4	1
(b)	1	2	3	4
(c)	3	1	2	4
(d)	4	3	1	2

70. The degree of dissociation of A is α in equilibrium reaction, $A \rightleftharpoons 2B + C$. If initially one mole of A is taken then the total number of moles at equilibrium will be

(a) $1 - \alpha$ (b) $1 + \alpha$
(c) $1 - 2\alpha$ (d) $1 + 2\alpha$

71. Which of the following has zero dipole moment?

(a) NH_3 (b) SO_2
(c) CO_2 (d) H_2O_2

72. Carbon tetrachloride is used as
(a) anaesthetic and disinfectant
(b) coolant and fire extinguisher
(c) industrial solvent and fire extinguisher
(d) antibiotic and industrial solvent



A, B, C and D are respectively

(a) CO, H_2O , CO, H_2O
(b) CO, H_2O , CO_2 , H_2
(c) CO_2 , H_2O , CO_2 , H_2
(d) CO_2 , H_2O , CO, H_2O

74. In the reaction $HC_2O_4^- + PO_4^{3-} \rightleftharpoons HPO_4^{2-} + C_2O_4^{2-}$. Bronsted base is

(a) PO_4^{3-} , $C_2O_4^{2-}$ (b) PO_4^{3-} , HPO_4^{2-}
(c) $HC_2O_4^-$, HPO_4^{2-} (d) $HC_2O_4^-$, $C_2O_4^{2-}$

75. Phenol on heating with phthalic anhydride and conc. H_2SO_4 gets converted to
(a) phenolphthalein
(b) phenetol
(c) pinacol
(d) *o*-hydroxy benzoic acid

76. Which of the following compound is mesitylene on distillation with conc. H_2SO_4
(a) Acetaldehyde (b) Acetone
(c) Acetophenol (d) Acetyl chloride

77. The structure of tetrafluoroborate
(a) tetrahedral (b) square planar
(c) octahedral (d) trigonal planar

78. Arrange the following acids in decreasing order of their pK_a values

Formic acid (I)
Acetic acid (II)
Chloro acetic acid (III)
Trichloro acetic acid (IV)
(a) IV, III, II, I (b) II, I, IV, III
(c) II, I, III, IV (d) I, II, IV, III

79. The degree of dissociation of a weak carbonic acid of 0.1 M solution is 10%. The value of dissociation constant of this acid will

(a) 10^{-5} (b) 10^{-4}
(c) 10^{-3} (d) 10^{-2}

80. The structure of some complex ions is given in the following list.

A. $[Ni(CN)_4]^{2-}$: square planar
B. $[Ag(NH_3)_2]^+$: linear
C. $[Fe(CN)_6]^{4-}$: octahedral
D. $[Cu(NH_3)_4]^{2+}$: tetrahedral

Which of the above is not matched?

(a) A (b) B
(c) C (d) D

81. The correct set of number of lattice points present in unit cell of a body centred cubic structure and a face centred cubic structure

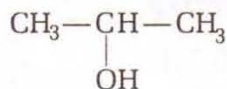
(a) 2, 4 (b) 4, 2
(c) 4, 6 (d) 2, 6

82. The solubility product of two sparingly soluble electrolyte AX and BX are 1×10^{-8} and 1×10^{-10} respectively. Which of the following statement is correct?

(a) Solubility of AX is 100 times more than BX
(b) Solubility of BX is 100 times more than AX
(c) Solubility of AX is 10 times more than BX
(d) Comparison of solubility cannot done from these data

83. Which of following are correct matched?

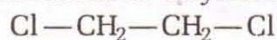
(A) Position isomer of isopropyl alcohol



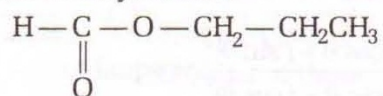
(B) Functional isomer of 1-butadiene



(C) Position isomer of ethylidene chloride



(D) Metamer of ethyl acetate



(a) A, B

(b) B, C

(c) C, D

(d) A, D

84. Generally, alkenes and alkynes show the following type of reaction

(a) nucleophilic addition

(b) electrophilic addition

(c) free radical substitution

(d) electrophilic substitution

85. Ethyl acetate reacts with hydrazine to give

(a) $\text{CH}_3\text{COONH} \cdot \text{NH}_2$

(b) $\text{CH}_2\text{COHN} - \text{NHCOCH}_3$

(c) $\text{CH}_3\text{CONH} \cdot \text{NH}_2$

(d) CH_3CONH_2

86. The hydrolysis product of which compound form sodium bisulphite addition product but does not give silver mirror with Tollen's reagent?

(a) $\text{Cl} - \text{CH}_2\text{CH}_2\text{Cl}$

(b) $\text{CH}_3\text{CH}_2\text{CHCl}_2$

(c) $\text{CH}_3\text{C}(\text{Cl}_2)\text{CH}_3$

(d) CH_2Cl_2

87. Which of the following reaction is different from other reaction?

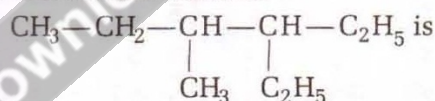
(a) $2\text{Hg}^{2+} \longrightarrow \text{Hg}_2^{2+}$

(b) $\text{Mg} \longrightarrow \text{Mg}^{2+}$

(c) $2\text{I}^- \longrightarrow \text{I}_2$

(d) $\text{Cu}_2^{2+} \longrightarrow 2\text{Cu}^{2+}$

88. The IUPAC name of



(a) 3-ethyl-4-methyl hexane

(b) 3-methyl-4-ethyl hexane

(c) 3-ethyl-1, 2-dimethyl pentane

(d) 3-ethyl-4, 5-dimethyl pentane

89. Which of the following statement is false?

(a) α -butylene and isobutylene are chain isomers.

(b) *n*-propyl alcohol and isopropyl alcohol are not position isomers.

(c) Equal molecular weight alcohol and ether are functional isomers.

(d) 1-alkyne does not show geometrical isomerism.

90. After calcination, metal is obtained in the form of

(a) oxide

(b) hydrated oxide

(c) sulphide

(d) carbonate

91. The reaction of ether with cold HI is called

(a) Williamson's synthesis

(b) Zeravitinof method

(c) Zeisel method

(d) None of the above

92. Which gas is evolved on heating acetamide with aqueous alkali?

(a) NH_3

(b) N_2

(c) CO_2

(d) NO

93. Which of the following is not a polymer?

(a) Teflon

(b) Nylon

(c) Orlon

(d) Phorone

94. $\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$

In this reaction, degree of dissociation of PCl_5 is proportional to

(a) \sqrt{p}

(b) $\frac{1}{\sqrt{p}}$

(c) p^2

(d) p

95. Vinegar is

(a) 10% formic acid

(b) 8-10% acetic acid

(c) 6-10% ethyl alcohol

(d) glacial acetic acid

96. Water gas is a mixture of

(a) 1 mole CO + 1 mole water vapour

(b) 1 mole CO + 2 mole H_2

(c) 2 mole CO + 1 mole H_2

(d) 1 mole CO + 1 mole H_2

97. Aniline reacts with conc. H_2SO_4 at 150°C to form

(a) sulphanilic acid

(b) sulphonic acid

(c) *o*-amino sulphonic acid

(d) aniline sulphate

98. The pH value of 10^{-8} N HCl is

(a) less than 7

(b) more than 7 but less than 8

(c) 8

(d) 7

99. The formula of wavelength of spectral lines for hydrogen atom is

$$(a) \frac{1}{\lambda} = R \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right) \quad (b) \frac{1}{\lambda} = R \left(\frac{1}{n_2^2} - \frac{1}{n_1^2} \right)$$

$$(c) \frac{1}{\lambda} = R \left(\frac{1}{n_1} - \frac{1}{n_2} \right)^2 \quad (d) \frac{1}{\lambda} = R \left(\frac{1}{n_2} - \frac{1}{n_1} \right)^2$$

100. The relationship between the solubility and solubility product is

$$(a) K_{sp} = x^x y^y s^{x+y}$$

$$(b) K_{sp} = s^{x+y}$$

$$(c) K_{sp} = x^x y^y s^{x-y}$$

$$(d) K_{sp} = x^2 y^2 s^{x+y}$$

Answer – Key

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