NEET ANSWER KEY & SOLUTION

PAPER CODE :- FULL TEST-4
FULL SYLLABUS TEST

ANSWER KEY

PHYSICS

1.	(C)	**2.**	(D)	**3.**	(A)	**4.**	(A)	**5.**	(B)	**6.**	(D)	**7.**	(B)
8.	(B)	**9.**	(D)	**10.**	(B)	**11.**	(C)	**12.**	(C)	**13.**	(B)	**14.**	(B)
15.	(A)	**16.**	(A)	**17.**	(A)	**18.**	(A)	**19.**	(A)	**20.**	(A)	**21.**	(C)
22.	(D)	**23.**	(D)	**24.**	(B)	**25.**	(D)	**26.**	(B)	**27.**	(B)	**28.**	(C)
29.	(A)	**30.**	(B)	**31.**	(D)	**32.**	(D)	**33.**	(C)	**34.**	(A)	**35.**	(A)
36.	(A)	**37.**	(D)	**38.**	(A)	**39.**	(A)	**40.**	(A)	**41.**	(C)	**42.**	(B)
43.	(C)	**44.**	(B)	**45.**	(D)	**46.**	(A)	**47.**	(D)	**48.**	(C)	**49.**	(C)
50.	(A)												

CHEMISTRY

51.	(D)	**52.**	(A)	**53.**	(B)	**54.**	(A)	**55.**	(C)	**56.**	(D)	**57.**	(B)
58.	(A)	**59.**	(D)	**60.**	(B)	**61.**	(D)	**62.**	(C)	**63.**	(D)	**64.**	(A)
65.	(D)	**66.**	(A)	**67.**	(C)	**68.**	(D)	**69.**	(D)	**70.**	(A)	**71.**	(C)
72.	(C)	**73.**	(B)	**74.**	(C)	**75.**	(A)	**76.**	(C)	**77.**	(B)	**78.**	(B)
79.	(B)	**80.**	(B)	**81.**	(B)	**82.**	(B)	**83.**	(B)	**84.**	(C)	**85.**	(C)
86.	(B)	**87.**	(D)	**88.**	(C)	**89.**	(B)	**90.**	(C)	**91.**	(A)	**92.**	(D)
93.	(A)	**94.**	**(**C)	**95.**	(A)	**96.**	(A)	**97.**	(B)	**98.**	(D)	**99.**	(D)
100.	(C)												
101.	(C)	**102.**	(D)	**103.**	(A)	**104.**	(D)	**105.**	(D)	**106.**	(A)	**107.**	(B)
108.	(D)	**109.**	(D)	**110.**	(B)	**111.**	(B)	**112.**	(A)	**113.**	(C)	**114.**	(A)
115.	(B)	**116.**	(A)	**117.**	(B)	**118.**	(A)	**119.**	(D)	**120.**	(A)	**121.**	(A)
122.	(B)	**123.**	(B)	**124.**	(A)	**125.**	(D)	**126.**	(D)	**127.**	(B)	**128.**	(C)
129.	(D)	**130.**	(C)	**131.**	(C)	**132.**	(A)	**133.**	(C)	**134.**	(C)	**135.**	(D)
136.	(A)	**137.**	(A)	**138.**	(A)	**139.**	(A)	**140.**	(A)	**141.**	(D)	**142.**	(C)
143.	(D)	**144.**	(A)	**145.**	(B)	**146.**	(C)	**147.**	(B)	**148.**	(D)	**149.**	(C)
150.	(D)	**151.**	(A)	**152.**	(D)	**153.**	(D)	**154.**	(D)	**155.**	(A)	**156.**	(C)
157.	(C)	**158.**	(B)	**159.**	(C)	**160.**	(A)	**161.**	(A)	**162.**	(A)	**163.**	(B)
164.	(B)	**165.**	(C)	**166.**	(B)	**167.**	(B)	**168.**	(B)	**169.**	(B)	**170.**	(A)
171.	(C)	**172.**	(B)	**173.**	(B)	**174.**	(D)	**175.**	(D)	**176.**	(D)	**177.**	(B)
178.	(B)	**179.**	(C)	**180.**	(B)	**181.**	(B)	**182.**	(B)	**183.**	(B)	**184.**	(C)
185.	(C)	**186.**	(A)	**187.**	(A)	**188.**	(D)	**189.**	(C)	**190.**	(D)	**191.**	(A)
192.	(D)	**193.**	(B)	**194.**	(B)	**195.**	(B)	**196.**	(D)	**197.**	(D)	**198.**	(A)
199.	(D)	**200.**	(D)										

SOLUTIONS

PHYSICS

1. (C)

Sol. $\vec{A}.\vec{B} = 0 \therefore \theta = 90°$

2. (D)

Sol. Let the body after time t/2 be at x from the top, then

$$x = \frac{1}{2}g\frac{t^2}{4} = \frac{gt^2}{8} \quad \ldots\ldots\ldots(i)$$

$$h = \frac{1}{2}gt^2 \quad \ldots\ldots\ldots(ii)$$

Eliminate t from (i) and (ii), we get x = $\frac{h}{4}$

$\therefore$ Height of the body from the ground =

$$h = \frac{h}{4} = \frac{3h}{4}$$

3. (A)

Sol. Here, m1 = 1kg and m^2 = 2kg The acceleration of the system is

$$a = \frac{(m_2 - m_1)g}{m_1 + m_2} = \frac{(2-1)g}{1+2} = \frac{g}{3} = \frac{10}{3}$$

Acceleration of the centre of mass is

$$a_{cm} = \frac{(m_1a_1 - m_2a_2)}{m_1 + m_2} = \frac{1(-a)+2(a)}{1+2}$$

$$= \frac{1\left(\frac{-g}{3}\right)+2\left(\frac{g}{3}\right)}{3}$$

$$\frac{g}{9} = \frac{10}{9}$$

The distance travelled by the centre of mass in two seconds is

$$S = \frac{1}{2}a_{cm}t^2 = \frac{1}{2}\times\frac{10}{9}\times(2)^2 = \frac{20}{9}m.$$

4. (A)

5. (B)

6. (D)

Sol. About EG, the maximum distance from the axis s the least i.e. distribution of mass is minimum.

7. (B)

Sol. In pure rolling, mechanical energy remains conserved. Therefore, when heights of inclines are equal, speed of sphere will be same in both the cases. But as acceleration down the incline, $a \propto \sin\theta$ therefore, acceleration and time of decent will be different.

8. (B)

Sol. Mass of satellite does not affect ts orbital radius.

9. (D)

Sol. Potential energy per unit volume of the wire is

$$u = \frac{1}{2}\frac{(\text{Stress})^2}{\text{young's modulus}} = \frac{1}{2}\frac{S^2}{Y}$$

As stress, S = $\frac{\text{Force}}{\text{Area}}$

$$\therefore \frac{S_1}{S_2} = \left(\frac{F_1}{F_2}\right)\left(\frac{A_2}{A_a}\right)$$

As $F_1 = F_2$ [Given]

$$\therefore \frac{S_1}{S_2} = \left(\frac{A_2}{A_a}\right) \quad \ldots\ldots\ldots\ldots(i)$$

As the two wires are of the same material, therefore their Youngs moduli are the same i.e., $Y_1 = Y_2$

$$\therefore \frac{u_1}{u_2} = \left(\frac{S_1}{S_2}\right)^2$$

$$= \left(\frac{A_2}{A_1}\right)^2 = \left[\left(\frac{d_2}{d_1}\right)^2\right]^2 \quad \text{[Using (i)]}$$

$$= \left(\frac{S_1}{S_2}\right)^4 = \left(\frac{2}{1}\right)^4 = \left(\frac{16}{1}\right)\left[\because \frac{d_1}{d_2} = \frac{1}{2}(\text{Given})\right].$$

10. (B)

Sol. Buoyant force = weight of the body in air – weight of the body in liquid
= 4 – 3 = 1 N.

11. (C)

Sol. Mass = Volume × Density $\Rightarrow$ M = $\frac{4}{3}\pi r^2 \times \rho$

As the density remains constant

$\therefore M \propto r^3$

$$\frac{r_1}{r_2} = \left(\frac{M_1}{M_2}\right)^{1/3} = \left(\frac{M}{8M}\right)^{1/3} = \frac{1}{2}$$

…….(i)

Terminal velocity, v_T = $\frac{2}{9}\frac{r^2(\rho-\sigma)g}{\eta}$

Where, r = radius of a spherical body
ρ = density of the material of body
σ = coefficient of viscosity of the medium
As ρ, σ, η remain constant

$\therefore vT \propto r_2$, $\therefore$ $\frac{{}^{u}T_1}{{}^{u}T_2} = \left(\frac{r_1}{r_2}\right)^2$

$\frac{u}{nu} = \left(\frac{r_1}{r_2}\right)^2$ or $\frac{1}{n} = \left(\frac{1}{2}\right)^2$ [sing (i)]

Or n = 4.

12. (C)

Sol. The densest layer of water will be at bottom. The density of water is maximum at 4℃. So the temperature of bottom of lake will be 4℃.

13. (B)

Sol. Let the final temperature be T ℃.

Total heat supplied by the three liquids in coming

down to 0℃ = $m_1c_1T_1 + m_2c_2T_2 + m_3c_3T_3$ .....(i)

Total heat used by three liquids in raising temperature from 0℃ to T℃

= $m_1c_1T + m_2c_2T + m_3c_3T$ .....(ii)

By equating (i) and (ii) we get

$(m_1c_1 + m_2c_2 + m_3c_3)T$

= $m_1c_1T_1 + m_2c_2T_2 + m_3c_3T_3$

$\Rightarrow T = \frac{m_1c_1T_1 + m_2c_2T_2 + m_3c_3T_3}{m_1c_1 + m_2c_2 + m_3c_3}$

14. (B)

Sol. $v_{rms} > v_{av} > v_{mp}$

15. (A)

Sol. According to ideal gas equation

PV = nRT or $\frac{V}{T} = \frac{nR}{P}$

At constant pressure

$\frac{V}{T}$ = constant

Hence graph (A) is correct.

16. (A)

Sol. In a closed cyclic process change in internal energy is always zero

$\therefore E = 0$.

17. (A)

Sol. $\lambda_m = \frac{b}{T} \Rightarrow T = \frac{b}{\lambda_m} = \frac{2.93\times10^{-3}}{4000\times10^{-10}} = 7325$ K.

18. (A)

Sol. For black body, $P = A\mathcal{E}\sigma T^4$. For same power A

$\propto \frac{1}{T^4}$

$\Rightarrow \left(\frac{r_1}{r_2}\right)^2 = \left(\frac{T_2}{T_1}\right)^4 \Rightarrow \frac{r_1}{r_2} = \left(\frac{T_2}{T_1}\right)^2$

19. (A)

Sol. Time period $T = 2\pi\sqrt{\frac{L}{g}}$.

20. (A)

Sol. In open organ pipe both even and odd harmonics are produced.

21. (C)

22. (D)

23. (D)

Sol. If nothing is said, it is considered that battery is disconnected. Hence charge remain the same

Also $V_{air} = \frac{\sigma}{\varepsilon_0}\times d$ and $V_{medium} = \frac{\sigma}{\varepsilon_0}(d - t + \frac{t}{k})$

$\Rightarrow \frac{V_m}{V_a} = \frac{(d - t + \frac{t}{k})}{d}$ $\Rightarrow$ $\frac{V_m}{120} = \frac{(8 - 6 + \frac{6}{6})}{8}$ $\Rightarrow$ $V_m = 45V$

24. (B)

Sol. $R \propto l^2 \Rightarrow$ If l doubled then R become 4 times.

25. (D)

Sol. Here, $v_A = 1.8\times10^8\ ms^{-1}$

Here, $v_A = 2.4\times10^8\ ms^{-1}$

Light travels slower in denser medium . Hence medium A is a denser medium and medium medium B. Let C be the critical angle between them .

26. (B)

Sol. Net electrostatic energy U

$= U = \frac{kQq}{a} + \frac{kq^2}{a} + \frac{kQq}{a\sqrt{2}} = 0$

$\Rightarrow \frac{kq}{a}\left(Q + q + \frac{Q}{\sqrt{2}}\right) = 0 \Rightarrow Q = \frac{-2q}{2+\sqrt{2}}$

27. (B)

Sol. Neutral temperature is the temperature of hot junction, at which the thermo e.m.f. produced

in the thermocouple becomes maximum. It is independent of cold junction and depends on the nature of materials of two metals used to form thermocouple.

28. (C)

Sol. On applying Kirchhoff's current law i = 13A.

29. (A)

Sol. Current loop acts as a magnetic dipole. Its magnetic moment is given by
M = NIA
where N = number of turns, I = current in a loop
A = area of the loop.
From the above relation, we can conclude that magnetic dipole moment of a current loop is independent of magnetic field in which it is lying.

30. (B)

Sol. $F \propto i_1 i_2$, so force on B due to C will be greater than

31. (D)

32. (D)

Sol. Lenz's Law is based on conservation of energy and induced emf always opposes the cause of it *i.e.*, change in magnetic flux

33. (C)

Sol. As it seen from the magnet side, induced current will be anticlockwise.

34. (A)

Sol. For electron $\lambda_e = \dfrac{h}{\sqrt{2mE}}$

for Photon $E = pc \Rightarrow \lambda_{ph} = \dfrac{hc}{E}$

$$\Rightarrow \frac{\lambda_e}{\lambda_{ph}} = \frac{h}{\sqrt{2mE}} \times \frac{E}{hc} = \frac{1}{c}\left(\frac{E}{2m}\right)^{\frac{1}{2}}$$

35. (A)

Sol. $\emptyset = BA = 10$ weber

36. (A)

Sol. K.E. = - (T.E.)

37. (D)

Sol. Number of possible emission lines = $\dfrac{n(n-1)}{2}$

Where n = 4; Number = $\dfrac{4(4-1)}{2} = 6$

38. (A)

39. (A)

Sol. The given symbol is of 'AND' gate.

40. (A)

Sol. By formula $\dfrac{1}{f} = (\mu - 1)\left(\dfrac{1}{R_1} - \dfrac{1}{R_2}\right)$

$= (1.5 - 1)\left(\dfrac{1}{40} + \dfrac{1}{40}\right) = 0.5 \times \dfrac{1}{20} = \dfrac{1}{40}$

$\therefore f = 40$ cm.

41. (C)

Sol. If $n = \dfrac{360}{\theta}$ = fraction, then n is taken as integral value

$\therefore n = 7$

42. (B)

Sol. Thickness of the film must be of the order of wavelength of light falling on film (i.e., visible light)

43. (C)

Sol. $\dfrac{a_1}{a_2} = \dfrac{3}{5}$

$$\therefore \frac{I_{max}}{I_{min}} = \frac{(a_1 + a_2)^2}{(a_1 - a_2)^2}$$

$$= \frac{(3+5)^2}{(3-5)^2}$$

$$= \frac{16}{1}$$

44. (B)

Sol. $\dfrac{I_{max}}{I_{min}} = \left(\dfrac{a_1 + a_2}{a_1 - a_2}\right)^2 = \left(\dfrac{3a + a}{3a - a}\right)^2 = \dfrac{4}{1}$

45. (D)

Sol. In the given figure, capacitors 2C, C (between M and N) and 2C are in series. If Q is the charge on each of these capacitors, then

$$60 = \frac{Q}{2C} + \frac{Q}{C} + \frac{Q}{2C} = \frac{2Q}{C} \Rightarrow Q = 30C$$

Potential difference between M and N = $\dfrac{Q}{C} = \dfrac{30C}{C} = 30V$

46. (A)

47. (D)

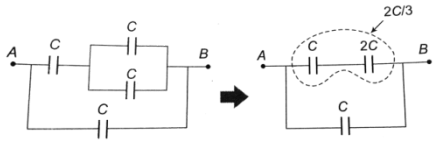
Sol. Direction of wave propagation is given by
$\vec{E} \times \vec{B}$

48. (C)

Sol. Because in both option (B) and (D)
$F_{net} = 0$ $\tau_{net} = 0$

49. (C)

Sol. The given circuit can be simplified as follows



Equivalent capacitance between A and B is

$C_{AB} = \frac{5}{3}C.$

50. (A)

Sol. $X_L = 31\Omega$, $X_C = 25\ \Omega$, $R = 8\Omega$

Impedance of series LCR is

$$Z = \sqrt{\left(R^2\right) + \left(X_L - X_C\right)^2}$$

$$= \sqrt{\left(8^2\right) + \left(31 - 25\right)^2} = \sqrt{64 + 36} = 10\Omega$$

Power factor, $\cos \phi = \frac{R}{Z} = \frac{8}{10} = 0.8$

51. (D)

Sol. Formation of ammonia

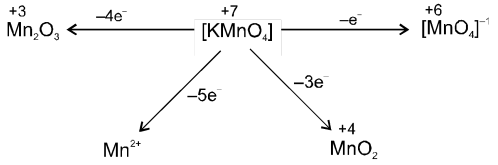
$N_2 + 3H_2 \longrightarrow 2NH_3$

2 mole of NH_3 is formed by 3 mole of H_2

20 mole of NH_3 is formed by 30 mole of H_2

52. (A)

Sol.



53. (B)

Sol. As we move in a group from top to bottom, electron gain enthalpy becomes less negative because the size of the atom increases and the added electron would be at larger distance from the nucleus.

Negative electron gain enthalpy of F is less than Cl. This is due to the fact that when an electron is added to F, the added electron goes to the smaller n = 2 energy level and experiences significant repulsion from the other electrons present in this level. In Cl, the electron goes to the larger n = 3 energy level and consequently occupies a larger region of space leading to much less electron-electron repulsion. So the correct order is Cl > F > Br > I.

54. (A)

Sol. (i) 10^{-3} mole water = 6.02 x 10^{20} molecule H_2O

(ii) 18 ml H_2O = 18 gram = 1 mole

= 6.02 x 10^{23} molecule

(iii) At 1 atm & 273 K

No. of mole of $H_2O = \dfrac{0.00224}{22.4}$

$= \dfrac{22.4 \times 10^{-4}}{22.4}$

= 10^{-4} mole = 6.02 x 10^{19} molecule.

(iv) 0.18 gram H_2O = 0.1 mole = 6.02 x 10^{22} molecule.

55. (C)

Sol. $AlF_3 + KF \xrightarrow{HF} K_3[AlF_6]$

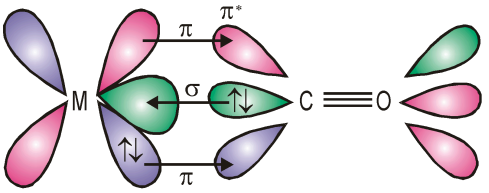
(maximum C.N. of Al^{+3} is six so it form AlF_6^{3-}).

56. (D)

Sol. HN_3 have bent shape.

57. (B)

Sol. Metal-carbon bond in metal carbonyls has σ as well as π characters.



58. (A)

Sol. According to Heisenberg

$$\Delta x \times m\Delta v = \frac{h}{4\pi}$$

For particle A :

$\Delta x = \Delta x_A$

$m = m$

$\Delta v = 0.05$

So, $\Delta x_A \times m \times 0.05 = \dfrac{h}{4\pi}$ ..... (i)

For particle B :

$\Delta x = \Delta x_B$

$m = 5m$

$\Delta v = 0.02$

So, $\Delta x_B \times 5m \times 0.02 = \dfrac{h}{4\pi}$ ..... (ii)

Eq. (i) / (ii), we get

$\dfrac{\Delta x_A}{\Delta x_B} = 2.$

59. (D)

Sol. $CH_3 - O - CH(CH_3)_2 + HI \xrightarrow{373\,K} H_3Cl + (CH_3)_2\,CHOH$

In case of unsymmertical ether, the alkyl halide is always formed from smaller alkyl group. This happen so, because I^- ion being larger in size approaches smaller alkyl group to avoid steric hindrance.

60. (B)

Sol. $K = 10^{-2} = \frac{0.693}{t/2}$

So, $t/2 = \frac{0.693}{10^{-2}} = 69.3$ sec.

Two half lives are required for the reduction of 20g of reactant into 5g.
So, time required = 2 x 69.3 = 138.6 sec

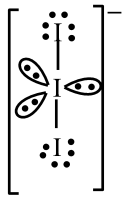
61. (D)
Sol. Lanthanide contraction is due to poor shielding of one of $4f$ electron by another in the sub-shell.

62. (C)
Sol. Lowest S.R.P., highest reducing power.

63. (D)
Sol. Aldehyde and α-hydroxy ketones reduces the Tollen's reagent.

64. (A)
Sol. Due to the inert pair effect (the reluctance of ns^2 electrons of outermost shell to participate in bonding) the stability of M^{2+} ions (of group 14 elements) increases as we go down the group.

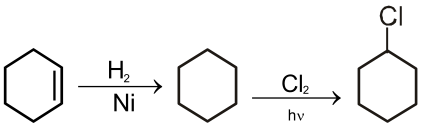
65. (D)
Sol. London dispersion forces increase from He to Xe because molecular mass increases. So boiling point will also increase from He to Xe.

66. (A)
Sol. I_3^- =  total number of lone pair of electron = 9

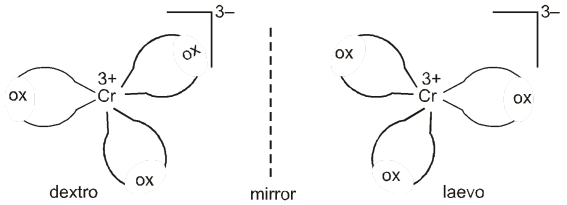
67. (C)
Sol. C form most stable pπ-pπ bonds.

68. (D)
Sol. BF_4^- hybridisation sp^3, tetrahedral structure.
NH_4^+ hybridisation sp^3, tetrahedral structure.

69. (D)
Sol. Due to lanthanide contraction there occurs net decrease in size. Only one 0.85Å is smaller one. So radius of Lu^{3+}_{71} will be closest to 0.85Å.

70. (A)
Sol. 

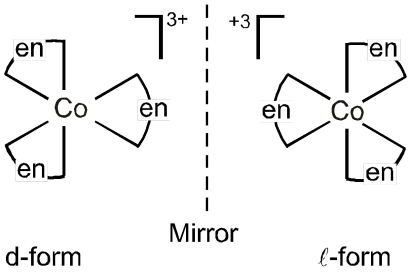
71. (C)
Sol. Due to the absence of symmetry elements it shows optical isomerism.



72. (C)
Sol. Let oxidation state of E is x so x + (–2) + 0 = +1 or x = +3

Coordination number is number of σ-bonds between metal ion and ligands. 'en' and 'ox' are bidentate ligands Thus ; coordination number of E = 4 + 2 = 6.

73. (B)
Sol. Complex $[Co(en)_3]^{3+}$ lacks plane of symmertry and thus is optically active having following to enantiomeric forms.



74. (C)
Sol. O_3 is reduced into O^{-2} ion and
Ag_2O is reduced to Ag so
H_2O_2 is reducing agent in both (a) and (b)

75. (A)
Sol.  has $4\pi e^-$, hence antiaromatic

76. (C)
Sol. Lone pair of electons in 'a' and 'e' are used in delocalisation.

77. (B)

Sol. $\Delta G^o = -2.303\ RT \log K_{sp}$

$63.3 \times 10^3 = -2.303 \times 8.31 \times 298 \log K_{sp}$

$-11.09 = \log K_{sp}$

$8 \times 10^{-12} = K_{sp}$

78. (B)

Sol. $K_{SP}\ (M_2S) = 4S^3 = 4 \times (3.5 \times 10^{-6})^3 = 1.7 \times 10^{-16}$

79. (B)

Sol. $\Delta G = \Delta H - T\Delta S < 0$

$\Delta H < T\Delta S$

$$T > \frac{\Delta H}{\Delta S} = \frac{35.5 \times 1000}{83.6} = 425\ K$$

since ΔH and ΔS are positive so reaction will be sponteneous at T > 425 K

80. (B)

Sol. Gas exponol isothermally against a constant pressure: $10^5\ N/m^2$

Given = $V_1 = 10^{-3}\ m^3$

$V_2 = 10^{-2}\ m^3$

T = 300 K

W = -Pent $(V_2 - V_1)$

$= -10^5 (10^{-2} - 10^{-3})$

$= -10^5 (10^{-3} \times 10 - 10^{-3})$

$= -10^2 \times 9$

$= -900\ J$

81. (B)

Sol. NaZ is a salt of weak acid & strong base.

$$pH = 7 \times \frac{1}{2} pK_a + \frac{1}{2} \log C$$

$$8.9 = 7 \times \frac{1}{2} pK_a + \frac{1}{2} \log(0.1)$$

$$8.9 - 7 + 0.5 = \frac{1}{2} pK_a.$$

$pK_a = 4.8$

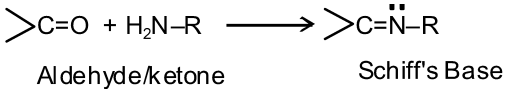
$-\log K_a = 4.8$

$\log Ka = -4.8 = \bar{5}.2$

$Ka = 1.6 \times 10^{-5}$

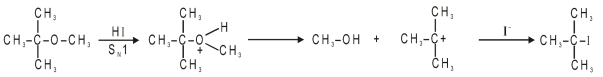
82. (B)

Sol.



83. (B)

Sol.



84. (C)

Sol. $K_{SP} = 4S^3 = 3.2 \times 10^{-11} = 8 \times 10^{-12} \Rightarrow S = 2 \times 10^{-4}$

85. (C)

Sol. According to Raoult's law

$P = P_A + P_B = P^o_A x + P^o_B x_B$

or $290 = P^o_A \times (0.6) + 200 \times (1 - 0.6)$

or $290 = 0.6 \times P^o_A + 0.4 \times 200$

or $P^o_A = 350$ mm.

86. (B)

Sol. $$\frac{P_0 - P_S}{P_S} = \frac{n}{N}$$

$$\frac{185 - 183}{183} = \frac{1.2/M}{100/58}$$

$M \approx 64$ g/mol

87. (D)

Sol. For spontaneous reaction in every condition

$E_{cell} > 0$, $\Delta G < 0$ and Q (reaction quotient) < K (equilibrium constant).

88. (C)

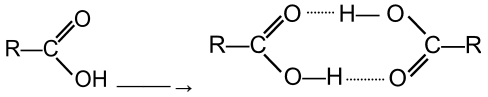
Sol. At anode $Ag \longrightarrow Ag^+ + e^-$

At cathode $Ag^+ + e^- \longrightarrow Ag$

So conc. of Ag^+ will remain same .

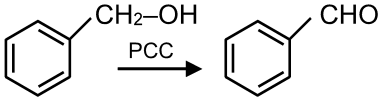
89. (B)

Sol. Carboxylic acid have higher boiling point and than aldehyde, ketones, alcohol due to formation of Inter molecular H–bonding



90. (C)

Sol. PCC is a weak oxidizing agent oxidized 1º alcohol to aldehyde :



all other Reagent oxidized alcohol to —COOH group.

91. (A)

Sol. The solution is non-ideal, showing +ve deviation from Raoult's Law.

92. (D)

Sol. $K = 2.303 \times 10^{-3}$

Time required for Ist order reaction :-

$$t = \frac{2.303}{K}\log\frac{a}{a-x}$$

value of $k = 2.305 \times 10^{-3}$ sec.

$= 10^3 \times 0.602$

t = 602 sec.

93. (A)

Sol. Syn additon of D_2 on double bond

94. **(**C)

Sol. The correct reason is the currect carried by cation and anion is equal to their transport number.

95. (A)

Sol. Acidic nature of oxides decreases down a group. So, N_2O_5 is most acidic.

Another reason of acidic strength of N_2O_5 is that the electronegativity of N is maximum in the given Vth group elements. As we know that by increasing the electronegative. character, acidic nature increases.

96. (A)

Sol. The process is isothermal expansion Hence, q

$= - w$ $\Delta u = 0$

q = + 208 J

w = – 208 J(expansion work)

97. (B)

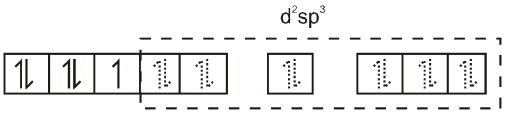
Sol. Due to + M effect of – OH group and hyperconjugation of $-CH_3$ group

98. (D)

Sol. Value of K_H decrease when solubility of gas increases

99. (D)

Sol. $\overset{I}{[Cr}\overset{0}{(NH_3)}\overset{-4}{(CN)_4}\overset{+1}{(NO)}]^{2-}$



Central metal ion has one unpaired electron and thus d-d transition of electron is possible. This attributes to the colour of the solution. As different types of ligands are attached to central metal ion, the complex is called heteroleptic complex.

100. (C)

Sol. On moving left to right in a period, atomic radii decreases due to increase in Z_{eff} and addition of electrons to the same outermost shell.