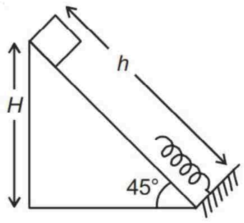
SCORE BOOSTER TEST SERIES
PHASE - I
TARGET NEET 5TH MAY 2024
DATE : 19/12/2023

PHYSICS

01. Sol. (4) : [Spring potential concept]



$U_i + K_i = U_f + K_f$

$(mgh \sin 45°) + 0 = \frac{1}{2}k(1)^2 + 0$

By solving, $h = 5$ m

02. Sol. (2) : [Spring problem concept]

Case (1) is F.B.D. of Case (2).

at equilibrium $F = Kx$

$x = F/K$

03. Sol. (3) : [Variable force concept]

Work done by variable force

Work done, $W = \int_{y_i}^{y_f} F dy \Rightarrow \int_{y=0}^{y_f=1} F \cdot dy$

where, $F = 20 + 10y$

$\therefore \quad W = \int_0^1 (20+10y)dy = \left[20y + \frac{10y^2}{2}\right]_0^1 = 25\,J$

04. Sol. (1) : [Graph concept]

The area under *a-t* graph gives change in velocity.

Given, $u = -5$ m/s

$\Rightarrow$ Area on positive side $= \frac{1}{2}\times 6\times 10 = 30\ ms^{-1}$

$\Rightarrow$ Area on negative side $= \frac{1}{2}\times 2\times 10 = 10\ ms^{-1}$

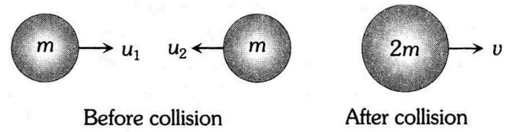
Net area $= 30 - 10 = 20\ ms^{-1}$

Δv = Area

$v - (-5) = 20$

$\Rightarrow \boxed{v = 15\ m\,s^{-1}}$

05. Sol. (3) : [Collision concept]



Here, $m = 0.25kg,\ u_1 = 3ms^{-1},\ u_2 = -1ms^{-1}$

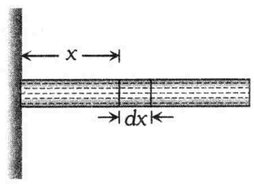
It is an inelastic collision.

According to conservation of momentum

$mu_1 + mu_2 = (m+m)v$

$\Rightarrow v = \frac{mu_1 + mu_2}{2m} = \frac{u_1+u_2}{2} = \frac{3-1}{2} = 1ms^{-1}$.

06. Sol. (1) : [Circular motion dynamics concept]



$dM = \left(\frac{M}{L}\right)dx$

force on 'dM' mass is

$dF = (dM)\,\omega^2 x$

By integration we can get the force exerted by whole liquid

$\Rightarrow F = \int_0^L \frac{M}{L}\omega^2 x\, dx = \frac{1}{2}M\omega^2 L$.

07. Sol. (2) : [Collision concept]

08. Sol. (4) : [NCERT Pg. 114]

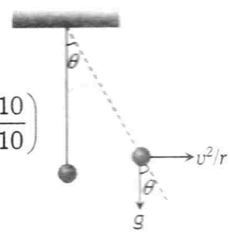
$\vec{A}\cdot\vec{B} = AB\cos\theta = 0$

$= 8 \times 4 \cos\theta = 0$

$\theta = 90°$

09. Sol. (2) : [Motion in 2D concept)

10. Sol. (3) : [Circular motion dynamics concept]

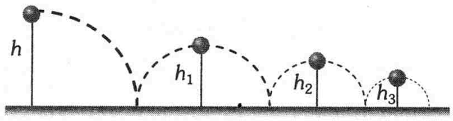


$\tan\theta = \frac{v^2}{rg}$

$\therefore\ \theta = \tan^{-1}\left(\frac{v^2}{rg}\right) = \tan^{-1}\left(\frac{10\times10}{10\times10}\right)$

$\therefore\ \theta = \tan^{-1}(1) = 45°$.

11. Sol. (1) : [Collision concept]



Particle falls from height h then formula for height covered by it in nth rebound is given by

$$h_n = he^{2n}$$

where e = coefficient of restitution, n = No. of rebound
Total distance travelled by particle before rebounding has stopped

$$H = h + 2h_1 + 2h_2 + 2h_3 + 2h_4 + \ldots\ldots$$

$$= h + 2he^2 + 2he^4 + 2he^6 + 2he^8 + \ldots\ldots\ldots$$

$$= h + 2h(e^2 + e^4 + e^6 + e^8 + \ldots\ldots.)$$

$$= h + 2h\left[\frac{e^2}{1-e^2}\right] = h\left[1 + \frac{2e^2}{1-e^2}\right] = h\left(\frac{1+e^2}{1-e^2}\right).$$

12. Sol. (2) : [Conservation of energy concept]

We know that $dU = -dW$
Where dU = Change in potential energy
and dW = Work done by conservative forces
Hence, work done by conservative forces on a system is equal to the negative of the change in potential energy.

13. Sol. (1) : [AIPMT (Prelims)-2007]

14. Sol. (2) : [AIPMT (Prelims)-2010]

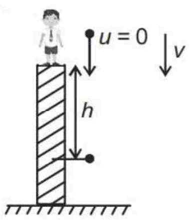
As the ball meet at t = 18 s

So, it means both of them covered the same distance 'h'.

But the time of travel is different

1st body $\rightarrow t$

2nd body $\rightarrow (t - 6) \rightarrow$ as theorem after 6 s.



1st body

$$-h = -\frac{1}{2}gt^2$$

$$h = \frac{1}{2}gt^2 \qquad \ldots(i)$$

2nd body

$$-h = -v(t-6) - \frac{1}{2}g(t-6)^2$$

$$h = v(t-2) + \frac{1}{2}(t-2)^2 \qquad \ldots(ii)$$

Equating (i) and (ii), we get

v = 75 m/s

For fitst body, t = 18 s

For second body, t = (18 – 6) = 12 s

$$h = \frac{1}{2} \times 10 \times (18)^2 = 5 \times 324$$

h = 1620 m

For second body

$$1600 = v \times (18 - 6) + \frac{1}{2} \times 10\,(18-6)^2$$

$$1620 = v \times 12 + 5 \times 144$$

$$\frac{1620 - 720}{12} = v$$

$$\frac{900}{12} = v$$

$$\Rightarrow \boxed{v = 75\ ms^{-1}}$$

15. Sol. (1) : [Friction force concept]
Limiting friction $F_L = (0.3)\,(1)\,(g)$
$= 3$ N
x-component or horizontal component of force is = 1 N
Hence this much of magnitude will act in backward direction due to friction.

16. Sol. (2) : [Equilibrium concept]

When particle moves away from the origin then at position $x = x_1$ force is zero and at $x > x_1$ force is positive (repulsive in nature) so particle moves further and does not return back to original position.

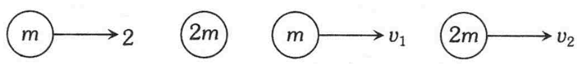
i.e. the equilibrium is not stable.

Similarly at position $x = x_2$ force is zero and at $x > x_2$, force is negative (attractive in nature)

So particle return back to original position i.e., the equilibrium is stable.

17. Sol. (2) : [Motion under gravity]

18. Sol. (2) : [Collision concept]



Initial condition   Final condition

By conservation of linear momentum :
$2m = mv_1 + 2mv_2 \Rightarrow v_1 + 2v_2 = 2$

By definition of e, $e = \dfrac{1}{2} = \dfrac{v_2 - v_1}{2 - 0}$

$\Rightarrow v_2 - v_1 = 1 \Rightarrow v_1 = 0$ and $v_2 = 1ms^{-1}$.

19. Sol. (3) : [Angular velocity concept]

20. Sol. (4) : [Displacement concept]

21. Sol. (2) : [Projectile Motion concept]

Force = $\frac{\Delta p}{\Delta t}$, force remains constant = mg

$\Rightarrow$ 10 × 9.8 $\Rightarrow$ 98 N

At t = 1, particle is at its maximum height.

22. Sol. (4) : [Conservation of momentum concept]

23. Sol. (3) : [Energy conservation concept]

Once the athlete leaves the surface of the trampoline, only a conservative force (her weight) acts on her. Therefore, the total mechanical energy of the athlete-Earth system is constant during her flight: $K_f + U_f = K_i + U_i$. Taking the $y = 0$ at the surface of the trampoline, $U_i = mgy_i = 0$. Also, her speed when she reaches maximum height is zero, or $K_f = 0$. This leaves us with $U_f = K_i$, or $mgy_{\max} = \frac{1}{2}mv_i^2$, which gives the maximum height as

$$y_{\max} = \frac{v_i^2}{2g} = \frac{(10.0\text{ m/s})^2}{2(10.0\text{ m/s}^2)} = 5.0\text{ m}$$

24. Sol. (2) : [Non-uniform motion concept]

$$v = u + \int a\,dt = u + \int (3t^2 + 2t + 2)dt$$

$$= u + \frac{3t^3}{3} + \frac{2t^2}{2} + 2t = u + t^3 + t^2 + 2t$$

$$= 2 + 8 + 4 + 4 = 18\ m/s. \quad (\text{As } t = 2\ sec)$$

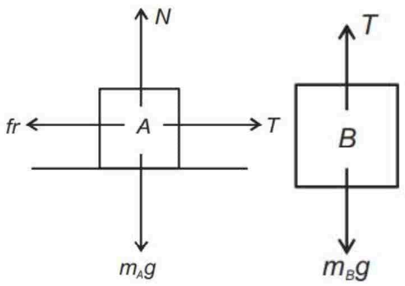
25. Sol. (4) : [Friction force concept]

$T < fr$

$M_B g < \mu_S (2)(g)$

$M_B < (0.2)(g)$

$M_B < 0.4$ kg



26. Sol. (1) : [Power concept]

We assume the climber has negligible speed at both the beginning and the end of the climb. Then $K_f = K_i$, and the work done by the muscles is

$$W_{nc} = 0 + (U_f - U_i) = mg(y_f - y_i)$$

$$= (90.0\text{ kg})(10.0\text{ m/s}^2)(600\text{ m})$$

$$= 5.40 \times 10^5\text{ J}$$

The average power delivered is

$$P = \frac{W_{nc}}{\Delta t} = \frac{5.40 \times 10^5\text{ J}}{(90\text{ min})(60\text{ s/1 min})} = 100\text{ W}$$

27. Sol. (4) : [Graphical concept]

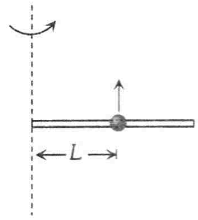
$$\frac{v_A}{v_B} = \frac{\tan 30°}{\tan 60°} = \frac{1/\sqrt{3}}{\sqrt{3}} = \frac{1}{3}$$

28. Sol. (1) : [Circular motion dynamics concept]

Let the bead starts slipping after time t

For critical condition

Frictional force provides the centripetal force



$m\omega^2 L = \mu R = \mu m \times a_t = \mu L m \alpha$

$\Rightarrow m(\alpha t)^2 L = \mu m L \alpha$

$\Rightarrow t = \sqrt{\frac{\mu}{\alpha}}$ [As $\omega = \alpha t$]

29. Sol. (1) : [Power concept]

Power: $P = Fv$

For power to be constant: $F \propto \frac{1}{v}$

30. Sol. (2) : [Conservation of momentum concept]

Before explosion linear momentum was zero. as there is no external impulse on the system so linear momentum should be zero just after explosion.

$$\vec{P}_1 + \vec{P}_2 + \vec{P}_3 = \vec{0}$$

$$\Rightarrow \quad 1 \times 12\hat{i} + 2 \times 8\hat{j} + \vec{P}_3 = 0$$

$$\vec{P}_3 = -(12\hat{i} + 16\hat{j})$$

$$P_3 = \sqrt{12^2 + 16^2} = 20\text{ kg ms}^{-1}$$

$$m_3 = \frac{P_3}{v_3} = 5\text{ kg}$$

31. Sol. (3) : [Power concept]

From work–energy theorem,

$$\Delta KE = W_{\text{net}} \text{ or } K_f - K_i = \int P dt$$

$$\Delta KE = W_{\text{net}} \text{ or } K_f - K_i = \int P dt$$

or $\frac{1}{2}mv^2 - 0 = \int_0^2 \left(\frac{3}{2}t^2\right)dt$ or $v^2 = \left[\frac{t^3}{2}\right]_0^2$

or $v = 2$ m/s

32. Sol. (2) : [Pseudo force concept]

R = mg – ma = 0.5 × 10 – 0.5 × 2 = 5 – 1 = 4 N

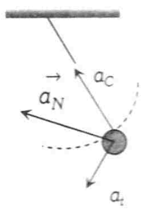
33. Sol. (3) : [Circular Motion concept]

a_c = centripetal acceleration

a_t = tangential acceleration

a_N = net acceleration

= Resultant of a_c and a_t.



34. Sol. (1) : [Power concept]

Mass of water, m = volume × density = $\pi r^2 l \times \rho$

$= \pi(2)^2 \times 15 \times 1000$ kg

$h = \dfrac{30+15}{2} = 22.5$ m

$P = \dfrac{W}{t} = \dfrac{mgh}{t} = \dfrac{\pi(2)^2 \times 15 \times 1000 \times 9.8 \times 22.5}{3600}$

$= 11.55$ kW

35. Sol. (2) : [Projectile concept]

36. Sol. (1) : [Projectile Motion concept]

37. Sol. (4) : [Newton's Law of Motion concept]

38. Sol. (4) : [Non-uniform motion concept]

$v = 2t^2 e^{-t}$

$a = \dfrac{dv}{dt} = 2[t^2 e^{-t} \times (-1) + e^{-t} \times 2t]$

Put, $a = 0$,

$-2t^2 e^{-t} + 4te^{-t} = 0$

$\Rightarrow \; -2t^2 + 4t = 0 \Rightarrow t(t-2) = 0 \Rightarrow t = 0$ and $t = 2$

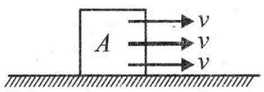
39. Sol. (4) : [Projectile Motion concept]

Time of flight $= \dfrac{2u\sin\theta}{g}$

$= \dfrac{2 \times 9.8 \times \sin 30^\circ}{9.8} = 2 \times \dfrac{1}{2} = 1$ sec.

40. Sol. (3) : [Motion in straight line concept]

In a uniform translatory motion if all the parts of the body moves with (same velocity in same straight line, so the velocity is constant.



The situation is shown in (figure) where a body A is in unfirom translatory motion.

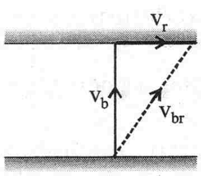
41. Sol. (2) : [River boat concept]

$\vec{v}_{br} = \vec{v}_b + \vec{v}_r$

$\Rightarrow v_{br} = \sqrt{v_b^2 + v_r^2}$

$\Rightarrow 10 = \sqrt{8^2 + v_r^2}$

$\Rightarrow v_r = 6$ km/hr



42. Sol. (3) : [Impulse concept]

As given that,

Mass of the ball = 150 g = 0.15 kg

$\vec{u} = (3\hat{i} + 4\hat{j})$ m/s

$\vec{v} = -(3\hat{i} + 4\hat{j})$ m/s

(Δp) Change in momentum

= Final momentum – Initial momentum

$= m\vec{v} - m\vec{u} \; = m(\vec{v} - \vec{u}) = (0.15)[-(3\hat{i} + 4\hat{j}) - (3\hat{i} + 4\hat{j})]$

$= (0.15)[-6\hat{i} - 8\hat{j}] \; = -[0.15 \times 6\hat{i} + 0.15 \times 8\hat{j}]$

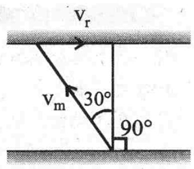
$= -[0.9\hat{i} + 1.20\hat{j}]$

$\Delta p = -[0.9\hat{i} + 1.2\hat{j}]$

43. Sol. (3) : [River boat concept]

$\sin 30^\circ = \dfrac{v_r}{v_m} = \dfrac{1}{2}$

$\Rightarrow v_r = \dfrac{v_m}{2} = \dfrac{0.5}{2} = 0.25$ m/s.



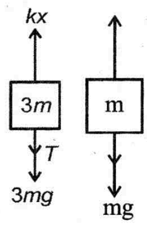
44. Sol. (1) : [Block Spring concept]

Before cutting the string

kx = T + 3 mg ...(i)

T = mg ...(ii)

$\Rightarrow$ kx = 4mg

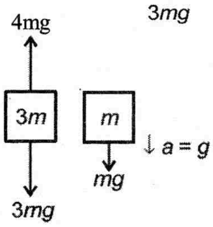


After cutting the string T = 0

$a_A = \dfrac{4mg - 3mg}{3m}$

$a_A = \dfrac{g}{3} \uparrow$

and $a_B = \dfrac{mg}{m} = g \downarrow$



45. Sol. (4) : [Vertical circular motion concept]

To complete the loop a body must enter a vertical loop of radius R with the minimum velocity

$v = \sqrt{5gR}$.

46. Sol. (3) : [Projectile Motion concept]

$t_1 + t_2 = \dfrac{2u\sin\theta}{g}$

$1 + 3 = \dfrac{2u \times \sin 30^\circ}{10}$

$20 \times 2 = u$

$\Rightarrow \boxed{u = 40 \text{ m s}^{-1}}$

47. Sol. (1) : [Frictional force concept]

Coefficient of static friction,

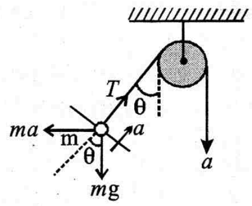
$\mu_s = \tan 30^\circ = \dfrac{1}{\sqrt{3}} = 0.577 \cong 0.6$

$S = ut + \dfrac{1}{2}at^2 \Rightarrow \quad 4 = \dfrac{1}{2}a(4)^2 \Rightarrow a = \dfrac{1}{2} = 0.5$

[$\because$ s = 4m and t = 4s given]

$a = g\sin\theta - \mu_k(g)\cos\theta \Rightarrow \mu_k = \dfrac{0.9}{\sqrt{3}} = 0.5$

48. Sol. (3) : [Pseudo force concept]



(Force diagram in the frame of the car)

Applying Newton's law perpendicular to string

$mg\sin\theta = ma\cos\theta \Rightarrow \tan\theta = \dfrac{a}{g}$

Applying Newton's law along string

$\Rightarrow T - m\sqrt{g^2+a^2} = ma$ or $T = m\sqrt{g^2+a^2} + ma$

49. Sol. (3) : [Circular Motion concept]

50. Sol. (4) : [Potential Energy concept]

$U(x) = \dfrac{x^3}{3} - \dfrac{x^2}{2}$ ...(1)

$F = \dfrac{-dU}{dx} = \dfrac{3x^2}{3} - \dfrac{2x}{2} = 0$

$x^2 - x = 0$

$\Rightarrow x = 1, 0$

Potential energy is minimum at x = 1 m and the value of this minimum P.E. will be

$U = \dfrac{-1}{6}$ J (Putting $x = 1$ in (1))

Now, $E = U + K$

Kinetic energy will be maximum, when potential energy will be minimum.

$4 = \dfrac{-1}{6} + K$

$K = \dfrac{25}{6}$

$\dfrac{1}{2}mv_m^2 = \dfrac{25}{6}$

$v_m = \dfrac{5}{\sqrt{6}}$

CHEMISTRY

51. (1)

Two solvents will be isotonic if both are of same concentration with equal value of i.

0.6% solvent of urea means 0.6 g of urea dissolved in 100 g of water

molar concentration (M) = $\dfrac{0.6}{60} \times \dfrac{1000}{100} = 0.1$ M

(density of water = 1 g/mL; $\therefore$ 100 g = 100 mL)

For urea, i = 1

Thus, it would be isotonic with 0.1 M glucose for which i = 1

52. (4)

$$\frac{P^o - P_s}{P^o} = X_2$$

$$\frac{760-750}{760} = X_2 = 0.0132$$

Mole fraction of solvent (X_1) = 1 - 0.0132 = 0.9868

it means 0.0132 mol of glucose is present per 0.9868 mol of water.

Weight of solvent = 0.9868 x 18

(Molectular weight of H_2O = 18

= 17.76 g

$$\text{Molality} = \frac{0.0132 \times 1000}{17.76} = 0.74$$

53. (1)

$$\Delta T_f = K_f \times m$$

$$m = \frac{24}{1.86} = 12.9$$

It means 1 kg of water require 12.9 moles of ethyle glycol 25 litre = 25 kg of water require = 12.9 x 25 moles of ethylene glycol.

Weight of ethylene glycol ($CH_2OH.CH_2OH$)

= 12.9 x 25 x 62 (molar weight = 62)

= 20000 g $\simeq$ 20 kg

54. (4)

$$\frac{P^o - P_s}{P^o} = X_2$$

$$\frac{760-750}{760} = X_2 = 0.0132$$

Mole fraction of solvent (X_1) = 1 - 0.0132 = 0.9868

it means 0.0132 mol of glucose is present per 0.9868 mol of water.

Weight of solvent = 0.9868 x 18

(Molectular weight of H_2O = 18

= 17.76 g

$$\text{Molality} = \frac{0.0132 \times 1000}{17.76} = 0.74$$

55. (3)

$$m = \frac{\Delta T_f}{K_f} = \frac{\Delta T_b}{K_b}$$

$$\left(\Delta T_b = 100.18 - 100 = 0.18\ ^\circ C\right)$$

$$\Delta T_f = \frac{0.18 \times 1.86}{0.512} = 0.65^\circ C$$

$$\Delta T_f = T_0 - T_f \Rightarrow T_f = 0 - 0.65 = -0.65\ ^\circ C$$

56. (2)

ΔT_f = m x K_f = 0.011 x 1.86 = 0.021

ΔT_f (calculated) = 0.021 °C

ΔT_f (observed) = 0.063 °C (given)

$$i = \frac{\text{Observed } \Delta T_f}{\text{Calculated } \Delta T_f} = \frac{0.063}{0.021} = 3$$

Degree of dissociation, $a = \frac{i-1}{n-1}$

$$K_3\left[Fe(CN)_6\right] \rightleftharpoons 3K^+ + \left[Fe(CN_6)\right]^{3-}$$

Thus, $n = 4$

$$a = \frac{3-1}{4-1} = 0.67$$

Percent dissociation = 67%

57. (3)
Osmotic pressure method is preferred over other colligative properties, for molar mass determination of polymers, proteins and other macromolecules because (i) Change observed in other properties like boiling point elevation, freezing point depression etc. are very small while change in osmotic pressure can be easily measured.
(ii) Biological molecules such as proteins are not stable at very high or low temperature whereas osmotic pressure is measured at room temperature.

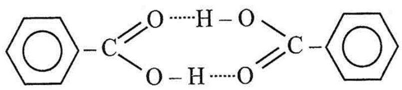
58. (2)

$$\text{Molarity} = \frac{w \times 1000}{M_w \times V_{sol(mL)}} \Rightarrow 2 = \frac{w}{98} \times \frac{1000}{250}$$

$$w = \frac{98}{2} = 49g$$

$$\text{Mass of acid} \times \frac{60}{100} = 49 \Rightarrow \text{Mass of acid} = 81.6g$$

59. (2)
In benzene, benzoic acid exists as dimer.



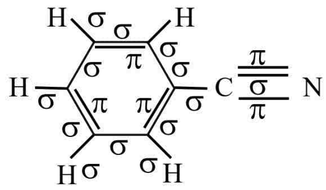
60. (1)
When we add HgI_2, a complex $K_2[HgI_4]$ is formed $2KI + HgI_2 \rightarrow K_2[HgI_4]$
It results in a decrease in number of moles of particles, because of it ΔT_f increases.

61. (1)
Clausius – clapeyron equation

$$in\left(\frac{P_1}{P_2}\right) = -\frac{\Delta H \text{ vap}}{R}\left[\frac{1}{T_1} - \frac{1}{T}\right]$$

62. (2)
Solutions which shows –Ve deviation from Raoult's Law will form maximum boiling azeotropes.

63. (4)



13 - σ bonds
5 - π bonds

64. (2)
Carbon which is directly bonded to two other carbon atoms is called 2° – carbon. the H–atoms which are directly attached to 2° – carbon is called secondary H–atoms.

65. (1) More electronegative atoms like N , O , S etc., whichn are present in a cyclic ring are hetero atoms

66. (2)
Priority order of F. G. : –COOH > –OH

67. (2)
If different alkyl substitutents are present follow alphabetical order

68. (1)

69. (2)
1° , 2° and 3° amines are functional group isomers.

70. (3)
No. of chiral atoms in glucose = 4
$\therefore$ No of stereoisomers $= 2^n = 2^4 = 16$

71. (3)
Both are homomers (Identical)

72. (3)
Due to intramolecular H–bonding

73. (4)
They do not possess symmetry (POS,COS etc.)

74. (1)

$$\left.\begin{array}{ll} -CHO & (\text{Aldehyde}) \\ -\underset{\underset{O}{\|}}{C}-Br & (\text{Acid halide}) \end{array}\right] \rightarrow \text{Functiona lgroupIsomers}$$

75. (3)

$$CH_3-\overset{\overset{OH}{|}}{\underset{*}{C}}H-CH_2-CH_3$$

2-Butanol (chiral)

$$CH_3-\overset{\overset{OH}{|}\ *}{\underset{\underset{Br}{|}}{C}}H-\overset{*}{\underset{\underset{Br}{|}}{C}}H-CH_2-CH_3$$

2,3–Dibromopentane (chiral)

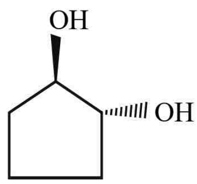
$$CH_3-\overset{\overset{OH}{|}}{C}H_2-\underset{\underset{Br}{|}}{C}H-CH_2-CH_3$$

3-Bromopentane (Achiral)

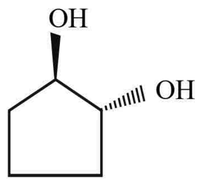
$$CH_3-\overset{\overset{\large OH}{|}}{\underset{*}{C}}H-COOH$$

2-Hydroxy propanoic acid (chiral)

76. (3)



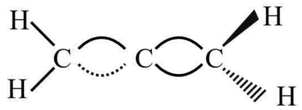
cis (Meso)



Trans (enantiomers) $\rightarrow$ d & l

Total stereoisomers = 3

77. (4)



$\rightarrow$ Hydrogen atoms are in different plane

$$\underset{1}{\overset{SP^2}{H_2C}}=\underset{2}{\overset{SP}{C}}=\underset{3}{\overset{SP^2}{CH_2}}$$

C_1 & $C_3 \rightarrow SP^2$ hybridised

$C_2 \rightarrow$ sp hybridised

78. (4)

$$CH_3-CH=CH-CH=CH-CH=CH-C_6H_5$$

No. of stereoisomers (n) = 3

$\therefore$ No. of stereoisomers $=2^N=2^3=8$

79. (2)

80. (1)

P.E. $=-2$K.E.

P.E.$_1=-2x$

P.E.$_2=-2\left(\dfrac{x}{4}\right)=\dfrac{-x}{2}$

$$\text{DPE}=\frac{-x}{2}+2x=\frac{+3x}{2}$$

81. (3)

82. (1)

83. (2)

$\Delta x.\Delta p>\dfrac{h}{4\pi}$ (Heisenberg's) uncertanity principle)

Δx = uncertainity in position

Δp = Uncertainity in momentum

84. (3)

Hund's rule : It states, pairing of electrons in the orbitals belonging to the same subshell (p,d or f) does not take place until each orbital belonging to that subshell has got one electron each i.e., it is singly occupied.

85. (2)

$(n+\ell)$ value more, energy increases

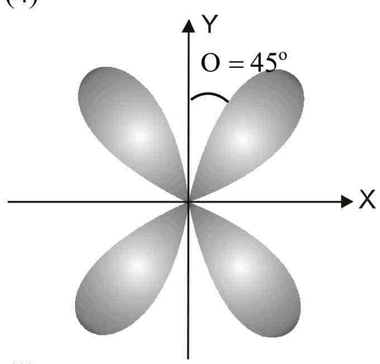
86. (4)

Orbital angular momentum $=\sqrt{\ell(\ell+12\pi)}.\dfrac{h}{2\pi}$

$$=\sqrt{1(1+1)}.\frac{h}{2\pi}$$

$$=\sqrt{2}\frac{h}{2\pi}$$

87. (4)



88. (3)

Magnetic quantum number (ml) tells about orientation of an electron.

89. (4)

–I (Negative inductive effect) increases acidic strength increases.

90. (2)

EWG'S increases acidic strength

91. (3)

$$\underset{SP^2}{\overset{4}{H_2C}}=\underset{SP}{\overset{3}{C}}=\underset{SP^2}{\overset{2}{CH}}-\underset{SP^2}{\overset{1}{CH}}=O$$

92. (4)

Restricted rotation increases delocalisation of electrons.

93. (2)

94. (1)

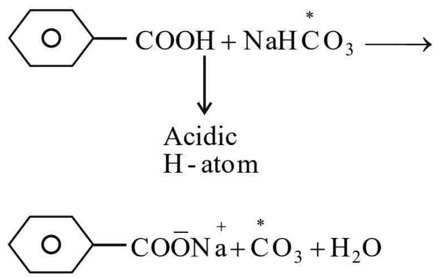
Weaker the acid stronger will be its conjugate base.

Acidic strength : $CH_4<NH_3<H_2O<HF$

Basic Strenght : $\bar{C}H_3>\bar{N}H_2>\bar{O}H>F^-$

95. (2) sp^3 ‘N’ atom more basic than sp^2 ‘N’ atom.

96. (1)



97. (1)

98. (2)

99. (3)

100. (1)

BIOLOGY

101. (2)	102. (2)	103. (1)	104. (1)	105. (4)
106. (2)	107. (1)	108. (2)	109. (4)	110. (2)
111. (3)	112. (4)	113. (1)	114. (2)	115. (2)
116. (4)	117. (3)	118. (4)	119. (1)	120. (2)
121. (2)	122. (4)	123. (3)	124. (2)	125. (4)
126. (3)	127. (3)	128. (3)	129. (3)	130. (1)
131. (1)	132. (3)	133. (2)	134. (1)	135. (1)
136. (1)	137. (1)	138. (4)	139. (2)	140. (1)
141. (4)	142. (3)	143. (1)	144. (2)	145. (4)
146. (2)	147. (1)	148. (4)	149. (3)	150. (4)
151. (2)	152. (4)	153. (3)	154. (4)	155. (2)
156. (2)	157. (1)	158. (2)	159. (1)	160. (2)
161. (4)	162. (3)	163. (3)	164. (4)	165. (4)
166. (1)	167. (4)	168. (3)	169. (2)	170. (4)
171. (2)	172. (1)	173. (1)	174. (1)	175. (3)
176. (2)	177. (3)	178. (2)	179. (3)	180. (3)
181. (1)	182. (3)	183. (3)	184. (3)	185. (4)
186. (4)	187. (2)	188. (2)	189. (3)	190. (4)
191. (4)	192. (3)	193. (3)	194. (3)	195. (1)
196. (3)	197. (3)	198. (1)	199. (3)	200. (4)