

RANK BOOSTER TEST SERIES

TARGET : PRE-MEDICAL 2022

Test Type : UNIT TEST # 05

Test Pattern : NEET (UG)

TEST DATE : 21-02-2022

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
A.	1	4	2	1	2	3	1	2	1	3	4	1	4	2	1	2	3	2	2	3	2	2	2	4	2	1	4	2	2	4
Q.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
A.	2	2	4	1	2	2	2	3	3	4	3	1	3	4	3	4	2	1	1	1	1	4	4	3	3	1	4	2	1	1
Q.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
A.	3	2	2	3	3	4	4	3	2	1	3	1	1	2	2	4	1	2	3	3	2	3	4	1	4	1	3	4	1	3
Q.	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
A.	2	3	3	3	3	2	1	2	3	4	4	4	1	2	1	3	3	4	3	1	2	3	4	2	1	1	2	3	3	4
Q.	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150
A.	4	4	4	1	2	4	2	3	2	4	3	4	2	3	3	1	3	3	4	2	3	2	2	3	3	4	3	1	4	3
Q.	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
A.	1	4	4	4	1	4	1	3	3	4	1	3	3	2	2	2	4	4	2	3	4	1	2	1	2	4	3	1	1	1
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200										
A.	2	2	2	3	1	3	4	3	2	1	3	2	1	4	3	3	1	2	1	3										

HINT - SHEET

SUBJECT : PHYSICS

SECTION-A

1. **Ans (1)**

$$\vec{r}_{\text{COM}} = \frac{m_1 \vec{r}_1 + m_2 \vec{r}_2}{m_1 + m_2}$$

$$= \frac{2(2\hat{i} + \hat{j} + \hat{k}) + 3(\hat{i} + 2\hat{j} + 2\hat{k})}{5}$$

2. **Ans (4)**

$$p = 0$$

As external force = 0

So, $v_c = 0$.

3. **Ans (2)**

According to the equation of motion of the centre of mass, $m\vec{a}_{\text{CM}} = \vec{F}_{\text{ext}}$.

$$\text{If } \vec{F}_{\text{ext.}} = 0, \vec{a}_{\text{CM}} = 0$$

$$\text{i.e. } \vec{v}_{\text{CM}} = \text{const}$$

i.e., if no external force acts on a system (or resultant external force acting on a system is zero) the velocity of its centre of mass remains constant (i.e. velocity of the centre of mass is unaffected by internal forces). Hence, the kinetic energy and momentum of the system also remain constant.

So, if the centre of mass of a system is at rest (or in the state of uniform motion) it will remain at rest (or in the state of uniform motion) it will remain at rest (or in the state of uniform motion) unless acted upon by an external force. Thus if $\vec{F}_{\text{ext.}} = 0$, it is possible that the position of the centre of mass may change at a constant rate.

4. **Ans (1)**

$$\text{At H, } N_1 = mg - \frac{mv^2}{r} \text{ \& At L, } N_2 = mg + \frac{mv^2}{r}$$

5. **Ans (2)**

From the symmetry.

6. **Ans (3)**

Two particles will meet at their centre of mass

$\Rightarrow$ Distance of centre of mass from 8kg

$$\text{mass} = \frac{(8)(0) + (4)(12)}{8 + 4} = 4\text{m}$$

7. **Ans (1)**

Applying momentum conservation ;

$$(80)1 + 60(-2) + (80 + 60 + 100)v = 0$$

$$v = +\frac{1}{6}\text{m/s}$$

8. **Ans (2)**

Wall is parallel to $\hat{j}$.

So, no. change in component of velocity along $\hat{j}$.

$$\text{But } v_x \hat{i} = -e u_x \hat{i}$$

$$v_x = -\frac{1}{2}(2) = -1$$

$$\text{So, } \vec{v} = -\hat{i} + 2\hat{j}$$

9. **Ans (1)**

$$X_{\text{cm}} = \frac{m_1 x_1 + m_2 x_2}{m_1 + m_2} = \frac{0.4 \times 2 + 0.6 \times 7}{0.4 + 0.6} = 5\text{m}$$

10. **Ans (3)**

$$\vec{v}_{\text{com}} = \frac{m_1 \vec{v}_1 + m_2 \vec{v}_2}{m_1 + m_2}$$

$$\frac{\vec{v}_1 + \vec{v}_2}{2} = (\hat{i} + \hat{j}) \text{ m/s}$$

$$\text{Similarly, } \vec{a}_{\text{com}} = \frac{\vec{a}_1 + \vec{a}_2}{2} = \frac{3}{2}(\hat{i} + \hat{j}) \text{ m/s}^2$$

Since $\vec{v}_{\text{com}}$ is parallel to $\vec{a}_{\text{com}}$ the path will be a straight line.

11. **Ans (4)**

According to conservation of momentum

$$mv = \left(\frac{m}{4}\right)0 + \left(\frac{3m}{4}\right)v_2 \Rightarrow v_2 = \frac{4}{3}v$$

12. **Ans (1)**

$$R = \frac{2u \cos \theta \cdot u \sin \theta}{g}$$

After impact horizontal component remains the same = $u \cos \theta$

The vertical component becomes

$$V = e(u \sin \theta)$$

$$\text{New range } R' = \frac{2u \cos \theta \cdot eu \sin \theta}{g}$$

$$R' = eR$$

13. **Ans (4)**

$$x_c = \frac{\int x dm}{\int dm}, dm = \lambda dx$$

$$\Rightarrow x_c = \frac{\int_0^L x \frac{m_0}{L^2} (L+x) dx}{\int_0^L \frac{m_0}{L^2} (L+x) dx}$$

$$x_c = \frac{\left(\int_0^L Lx dx + \int_0^L x^2 dx\right)}{\int_0^L (L+x) dx} \Rightarrow x_c = \frac{5L}{9}$$

14. **Ans (2)**

$$m_A = 90\text{kg}, m_B = 40\text{ kg}, m_C = 20\text{ kg}$$

Let plank moves by x along left.

$$m_A(\ell - x) + m_B(-\ell - x) + m_C(-x) = 0$$

$$(m_A - m_B)\ell = (m_A + m_B + m_C)x$$

$$\Rightarrow (90 - 40) \times 12 = (90 + 40 + 20)x$$

$$x = 4\text{m}$$

15. **Ans (1)**

$$v_1 = -\frac{m_2 v_2}{m_1} = \frac{-12}{4} \times 4 = -12\text{ m/s}$$

$$KE = \frac{1}{2}m_1 v_0^2 = 288\text{ J}$$

16. **Ans (2)**

$$\begin{array}{c} \begin{array}{cc} \begin{array}{c} \text{5m/s} \\ \leftarrow \end{array} & \begin{array}{c} \text{5m/s} \\ \leftarrow \end{array} \\ \begin{array}{c} \bullet \rightarrow \\ 10\text{m/s} \\ e = 1 \end{array} & \begin{array}{c} \leftarrow \bullet \\ v \end{array} \end{array} \\ \Rightarrow 10 + 5 = v - 5 \text{ or } v = 20\text{ m/s} \end{array}$$

17. **Ans (3)**

$$m_1 u_1 + m_2 u_2 = m_1 v_1 + m_2 v_2$$

$$(2m)10 + (m)0 = 2mv_1 + mv_2$$

$$\text{or } 2v_1 + v_2 = 20 \quad \dots\dots\dots(1)$$

$$v_2 - v_1 = e(u_1 - u_2)$$

$$v_2 - v_1 = \frac{1}{2} (10 - 0)$$

$$v_2 - v_1 = 5 \quad \dots\dots\dots(2)$$

Solving equation (1) and (2), we get

$$v_1 = +5 \text{ m/s and } v_2 = 10 \text{ m/s}$$

18. **Ans (2)**

$$v_2 = ev_1$$

$$\sqrt{2gh_2} = e\sqrt{2gh_1}$$

$$h_2 = e^2 h_1 = (0.5)^2 \times 20 = 5 \text{ m}$$

19. **Ans (2)**

Angle between normal to the plane of the coil and direction of magnetic field is $\theta = 60^\circ$

$$\therefore \text{Flux linked with coil } \phi = BA \cos \theta$$

$$= 4.0 \times 0.5 \times \cos 60^\circ \Rightarrow \phi = 1 \text{ weber}$$

20. **Ans (3)**

By Lenz law

21. **Ans (2)**

$$\epsilon = A \frac{dB}{dt} = 2 \times \frac{(4-1)}{2} = 3 \text{ volt.}$$

22. **Ans (2)**

Apply lenz law, eddy current opposes change in magnetic field

23. **Ans (2)**

$$i_1 = \frac{10}{10} = 1 \text{ A}$$

$$i_2 = \frac{10}{8} = \frac{5}{4}$$

24. **Ans (4)**

$$\text{Use trick : } M \propto \frac{R_2^2}{R_1}$$

25. **Ans (2)**

$$\phi = BA \cos \theta = \frac{5}{\pi} [\pi (0.3)^2] \cos 53^\circ$$

$$= 5 \times 9 \times 10^2 \times \frac{3}{5} = 0.27 \text{ Wb}$$

26. **Ans (1)**

By Lenz law bar magnet is repelled so acceleration of bar magnet is less than g.

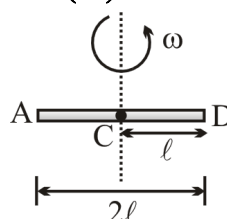
So, If $a < g$

$$S < \frac{1}{2} gt^2 = \frac{1}{2} \times 1 \times 1 = 5 \text{ m}$$

$$S < 5 \text{ m}$$

So, Among given options $S = 4.0 \text{ m}$.

27. **Ans (4)**



Let centre is C

$$V_{CA} = \frac{1}{2} B\omega l^2, V_{CD} = \frac{1}{2} B\omega l^2,$$

$$V_A = V_D \text{ So, } V_{AD} = 0$$

28. **Ans (2)**

$$\text{In loop 1 } \phi = B \pi r^2$$

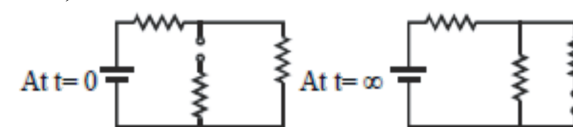
$$\text{induced emf } \epsilon = -\frac{d\phi}{dt} = -\frac{dB}{dt} \pi r^2$$

$$\text{In loop 2 } \phi = 0,$$

$$\text{induced emf} = 0$$

29. **Ans (2)**

Initially equivalent circuit is & finally (steady state)



$$\text{Initially } V_L = \frac{2E}{3} = L \frac{dI}{dt} \Rightarrow \frac{dI}{dt} = \frac{2E}{3L} \text{ and}$$

$$I_C = \frac{E}{3R} = \frac{dQ}{dt}$$

30. **Ans (4)**

$$e = -M \frac{dI}{dt} = -M \frac{d}{dt} I_0 \sin \omega t$$

$$e = -M I_0 \omega \cos \omega t = -E_0 \cos \omega t$$

$$E_0 = M I_0 \omega = 0.005 \times 2 \times 100 \pi = \pi \text{ V}$$

31. **Ans (2)**

$$\text{Use } M = \frac{\phi_2}{i_1} = \frac{N_2 B_1 A_2}{i_1}$$

32. **Ans (2)**

By Lenz law

33. **Ans (4)**

Conductor cuts the flux only when, if it moves in the direction of M.

35. **Ans (2)**

$$f = \frac{1}{2\pi} \sqrt{\frac{1}{L_{eq} C_{eq}}}$$

SECTION-B

36. **Ans (2)**

Let the circular disc of radius a be made up of the circular section of radius b and remainder. Further let the line of symmetry joining the centres O and O_1 be the x -axis with O as origin. The centre of mass of the disc of radius a will be given by :

while Y_{CM} and Z_{CM} will be zero (as for all points on x -axis, y and $z = 0$). If a be the density of the material of disc,

$$m_1 = \pi b^2 a \quad \text{and } x_1 = c$$

$$m_2 = \pi(a^2 - b^2)\alpha \quad \text{and } x_2 = ?$$

$$M = (m_1 + m_2) = \pi a^2 \alpha \quad \text{and } X_{CM} = 0$$

From, eqn. (i),

$$0 = \frac{\pi b^2 a(c) + \pi(a^2 - b^2)\alpha x_2}{\pi a^2 \alpha}$$

$$\therefore x_2 = \frac{-cb^2}{(a^2 - b^2)}$$

i.e., the centre of mass of the remaining portion (say O_2) is at a distance $cb^2/(a^2 - b^2)$ to the left of O on the line joining the centres O and O_1 .

37. **Ans (2)**

$$3m u \cos \theta \hat{i} = (m \times 100)\hat{j} - (100 \times m)\hat{j} + m\vec{v}$$

$$\vec{v} = 3u \cos \theta \hat{i}$$

$$= \left(3 \times 200 \times \frac{1}{2}\right) \hat{i} = 300 \hat{i} \text{ m/s}$$

300 m/s in horizontal direction.

38. **Ans (3)**

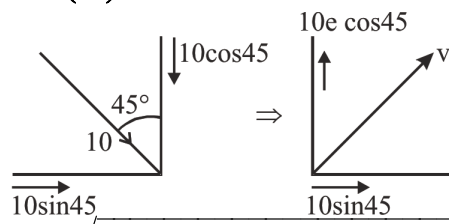
If $KE = 0$,

Velocity of each particle is zero.

So, KE of system is zero.

If $\vec{p}_{sys} = 0$, then momentum of different particle may be non zero. So, KE will not be zero.

39. **Ans (3)**



$$v = \sqrt{(10 \sin 45)^2 + (10 \cos 45)^2}$$

$$v = 5\sqrt{3} \text{ m/s}$$

41. **Ans (3)**

If velocity of third particle is $\vec{v}$ then

$$m\vec{v} + m\hat{i} + m\hat{j} = \vec{0}$$

$$\vec{v} = -v(\hat{i} + \hat{j})$$

42. **Ans (1)**

$$V_1 = \left(\frac{m_1 - m_2}{m_1 + m_2}\right) U_1 + \frac{2m_2}{m_1 + m_2} U_2$$

because $m \ll M$, hence

$$V_1 = -U_1 + 2U_2 = -6 + 2(4) = 2 \text{ m/s}$$

43. **Ans (3)**

$$e = NBA\omega; \omega = 2\pi f = 2\pi \times \frac{2000}{60}$$

$$\therefore e = 50 \times 0.05 \times 80 \times 10^{-4} \times 2\pi \times \frac{2000}{60} = \frac{4\pi}{3}$$

45. **Ans (3)**

In parallel combination

$$\frac{1}{L} = \frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3}$$

$$= \frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \frac{3}{9}$$

$$\Rightarrow L_{eq} = 3H$$

46. Ans (4)

Time period of AC,

$$T = \frac{1}{n} = \frac{1}{50} \text{ second}$$

Time interval Δt for current to decrease from peak value of one ampere to zero ampere = $T/4$.

$$\Delta t = \frac{T}{4} = \left(\frac{1}{50}\right) \left(\frac{1}{4}\right) = \frac{1}{200} \text{ sec}$$

Change in current, $\Delta I = I_f - I_i = 0 - 1 = -1$ amp

$$\begin{aligned} \text{Mean induced emf, } e &= -M \left(\frac{\Delta I}{\Delta t} \right) \\ &= (-1)(1.5) \left[\frac{-1}{1/200} \right] \\ &= 300 \text{ volt.} \end{aligned}$$

47. Ans (2)

If cd moves with velocity v then induced emf

across cd is $v_{cd} = B\ell v$

$$\text{current through it } I = \frac{B\ell v}{R},$$

force on cd is $F = BI\ell$

$$\Rightarrow F = B \left(\frac{B\ell v}{R} \right) \ell = \frac{B^2 \ell^2 v}{R}$$

If this force if upwards and balances mg then

$$\frac{B^2 \ell^2 v}{R} = mg$$

$$\Rightarrow v = \frac{mgR}{B^2 \ell^2}.$$

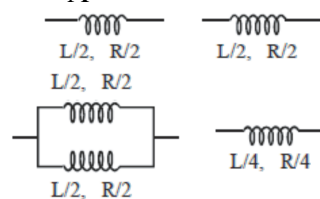
48. Ans (1)

$$\begin{aligned} F_{\text{ext}} &= \frac{B^2 \ell^2 v}{R} = \frac{0.15 \times 0.15 \times 0.5 \times 0.5 \times 2}{3} \\ &= 3.75 \times 10^{-3} \text{ N} \end{aligned}$$

49. Ans (1)

$$t = \frac{L}{R} = 4 \text{ sec} \quad L = \mu_0 n^2 A \ell \Rightarrow L \propto \ell$$

$$R = \frac{\rho \ell}{A} \Rightarrow R \propto \ell$$



$$\begin{aligned} L_p &= \frac{L_1 L_2}{L_1 + L_2} = \frac{L}{4}, \quad R_p = \frac{R_1 R_2}{R_1 + R_2} = \frac{R}{4} \\ \frac{L/4}{R/4} &= \frac{L}{R} = 4 \text{ sec} \end{aligned}$$

50. Ans (1)

$$i = \frac{E - e}{R} = \frac{220 - 210}{2} = \frac{10}{2} = 5 \text{ A}$$

SUBJECT : CHEMISTRY

SECTION-A

55. Ans (3)

1ml, 10% NaCl solution $\equiv$ mg of lyophilic sol to prevent coagulation of 10 ml gold sol.
 $= 0.025 \times 1000 \text{ mg} = 25 \text{ mg}$

56. Ans (1)

$$\frac{x}{m} \propto \frac{1}{T}$$

60. Ans (1)

$$\begin{aligned} \text{Number of molecules} &= \text{moles} \times N_A \\ &= \frac{1.2}{48} \times N_A = \frac{N_A}{40} \end{aligned}$$

61. Ans (3)

	H_2	He	O_2	O_3	$V = \text{const (1L)}$
moles $\times$ atomicity	x mol,	x mol,	x mol,	x mol	
atoms	2x	x	2x	3x	
atomic ratio	2	: 1	: 2	: 3	

63. Ans (2)

0.8 mol of $\text{CH}_3\text{COOH} \equiv 1.6$ mol of oxygen atoms

64. Ans (3)

$$I = \frac{25.4}{127} = 0.2$$

$$O = \frac{8}{16} = 0.5$$

$$\therefore \text{formula } I_{0.2}O_{0.5} = I_2O_5$$

65. **Ans (3)**

$$n_{\text{CaCO}_3} = \frac{w}{M} = \frac{10}{100} = 0.1 \text{ mol}$$

$$n_{\text{proton}} = \text{total protons in 1 mol CaCO}_3 \times n_{\text{CaCO}_3}$$

$$= 50 \times 0.1 = 5 \text{ mol} = 5 \times 6.023 \times 10^{23}$$

$$= 3.011 \times 10^{24}$$

66. **Ans (4)**

$$\text{Atomic mass} = \text{mass of one atom(g)} \times N_A$$

$$= 6.643 \times 10^{-23} \times 6.01 \times 10^{23} = 40$$

$$\text{Number of moles} = \frac{w}{M} = \frac{20 \times 10^3}{40} = 500$$

67. **Ans (4)**

$$n_{\text{O}} = \frac{126}{63} \times \frac{3}{N_A} = \frac{6}{N_A}$$

68. **Ans (3)**

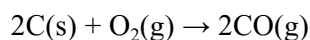
$$M = VD \times 2 = 10 \times 2 = 20$$

$$1 \text{ mol} = 22.4 \text{ L gas at NTP}$$

$$n = \frac{44.8}{22.4} = 2 \text{ mol}$$

$$w = n \times M = 2 \times 20 = 40 \text{ g}$$

69. **Ans (2)**



$$\begin{array}{ccc} 4\text{mol} & 2\text{mol} & 0 \\ 0 & 0 & 4\text{mol} \end{array}$$

$$V_{\text{CO}} = n \times 22.4$$

$$= 4 \times 22.4 = 89.6 \text{ L}$$

70. **Ans (1)**

$$\text{O}_2 = \frac{x}{32} \text{ mol}$$

$$\text{H}_2 = \frac{x}{2} \text{ mol}$$

$$\text{CH}_4 = \frac{x}{16} \text{ mol}$$

$$n_{\text{O}_2} : n_{\text{H}_2} : n_{\text{CH}_4} = 1 : 16 : 2$$

71. **Ans (3)**

$$\text{C} : \frac{12.1}{12} = 1.01$$

$$\text{O} : \frac{16.2}{16} = 1.01$$

$$\text{Cl} : \frac{71.7}{35} = 2.02$$

$$\text{simplest formula} = \text{C}_{1.01} \text{O}_{1.01} \text{Cl}_{2.02} = \text{COCl}_2$$

$$M = 2 \times 49.5 = 99$$

$$n = \frac{M}{\text{EFM}} = \frac{99}{99} = 1$$

$$M.F = (\text{EF})_n = (\text{COCl}_2)_1 = \text{COCl}_2$$

72. **Ans (1)**

$$M = VD \times 2 = 40 \times 2 = 80$$

$$2 \times A + 40 = 80$$

$$A = 20$$

73. **Ans (1)**

$$\Delta n_g = 1$$

$$\Delta H = \Delta E + \Delta n_g RT$$

$$\Delta E = \Delta H - \Delta n_g RT$$

$$= -310 - \frac{1 \times 8.314 \times 298}{1000}$$

$$= -310 - 2.48 = -312.48 \text{ kJ}$$

75. **Ans (2)**

$$\Delta H = \Delta E + \Delta(PV)$$

$$= \Delta E + (P_2 V_2 - P_1 V_1)$$

$$= 40 + (4 \times 5 - 1 \times 3)$$

$$= 40 + 17 = 57 \text{ L atm}$$

78. **Ans (2)**

$$\Delta H_{\text{fus}} = 5.46 \text{ kJ/mol}$$

$$\Delta H_{\text{freez}} = -5.46 \text{ kJ/mol}$$

$$\Delta S = \frac{\Delta H_{\text{freez}}}{T}$$

$$= \frac{-5.46 \times 10^3}{273} = -20 \text{ J/k mol}$$

$$\Delta S_{\text{total}} = \Delta S \times n = -20 \times \frac{90}{18} = -100 \text{ J/k}$$

80. **Ans (3)**

$$\Delta S = \frac{\Delta H}{T} = \frac{373}{373} \times 18 \text{ J/kmol}$$

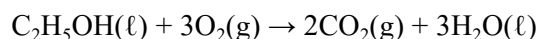
81. **Ans (2)**

$$\Delta n H_{\text{WA}} = -\Delta n H_{\text{SA}} + \Delta_{\text{Ion}} H_{\text{WA}}$$

$$-12.1 = -55.9 + \Delta_{\text{ion}} H_{\text{WA}}$$

$$\Delta_{\text{ion}} H_{\text{WA}} = 43.8 \text{ kJ}$$

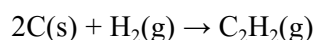
82. **Ans (3)**



$$\Delta n_g = -1$$

$$\Delta H - \Delta E = |\Delta n_g RT| = \left| \frac{-1 \times 2 \times 300}{1000} \right| = 0.6 \text{ kcal}$$

83. **Ans (4)**



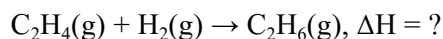
$$\Delta_r H = \Delta_f H_{\text{C}_2\text{H}_2} = \sum \Delta_c H_{\text{R}} - \sum \Delta_c H_{\text{P}}$$

$$= \Delta_c H_{\text{C}} + \Delta_c H_{\text{H}_2} - \sum \Delta_c H_{\text{C}_2\text{H}_2}$$

$$= -787 - 286 + 1301$$

$$= 228 \text{ kJ}$$

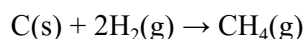
84. Ans (1)



$$\Delta H = \sum \text{BE}_R - \sum \text{BE}_P$$

$$= \text{BE}_{\text{C}=\text{C}} + 4 \text{BE}_{\text{C}-\text{H}} + \text{BE}_{\text{H}-\text{H}} - \text{BE}_{\text{C}-\text{C}} - 6\text{BE}_{\text{C}-\text{H}}$$

85. Ans (4)



$$\Delta E = \Delta H - \Delta n_g RT = -75.83 + 1 \times \frac{8.314 \times 300}{1000}$$

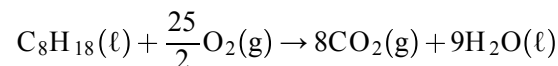
$$= -73.34 \text{ kJ/mol}$$

SECTION-B

86. Ans (1)

$$x = \Delta H_1 + \Delta H_2 + \Delta H_3$$

87. Ans (3)



$$\Delta_r H = 8\Delta_f H_{\text{CO}_2} + 9\Delta_f H_{\text{H}_2\text{O}} - \Delta_f H_{\text{C}_8\text{H}_{18}}$$

$$= 8(-490) + 9(-240) + 160$$

$$\Delta H = \Delta_r H \times 6$$

89. Ans (1)

$$-\Delta G^\circ = 2.3 RT \log K_p$$

$$-(+8.6 \times 10^3) = 2.3 \times 8.3 \times 298 \log K_p$$

$$-1.5117 = \log K_p$$

$$0.031 \text{ atm} = K_p$$

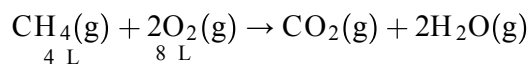
$$K_p = 0.031 \times 760$$

$$K_p = 23.56 \text{ torr}$$

91. Ans (2)

$$\frac{P_{\text{H}_2}}{P_{\text{He}}} = \frac{\frac{\frac{x}{2}}{\frac{x}{2} + \frac{x}{4}} \cdot P}{\frac{\frac{x}{4}}{\frac{x}{2} + \frac{x}{4}} \cdot P} = \frac{\frac{x}{2}}{\frac{x}{4}} = \frac{2}{1}$$

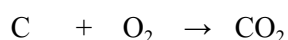
92. Ans (3)



$$V_{\text{air}} = V_{\text{O}_2} \times \frac{100}{20}$$

$$= 8 \times 5 = 40 \text{ L}$$

93. Ans (3)

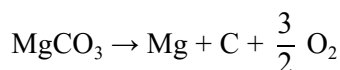


$$\frac{4}{12} \text{ mol} \quad \frac{4}{32} \text{ mol}$$

(LR)

$$\text{moles of CO}_2 \text{ formed} = \frac{4}{32} = \frac{1}{8} \text{ moles}$$

94. Ans (3)



$$\frac{3}{2} \times 32 \text{ g O}_2 \equiv 1 \times 84 \text{ g MgCO}_3$$

$$24 \text{ g O}_2 \equiv \frac{84 \times 2 \times 24}{3 \times 32} \text{ g MgCO}_3$$

$$\equiv 42 \text{ g}$$

95. Ans (3)

$$\text{Let wt of H} = x \text{ g}$$

$$\therefore \text{wt. of C} = 3x \text{ g}$$

$$\therefore \text{wt of O} = 6x \text{ g.}$$

$$\text{moles of (C : H : O)} = \frac{3x}{12} : \frac{x}{1} : \frac{6x}{16}$$

$$= \frac{1}{4} : 1 : \frac{3}{8}$$

$$= 2 : 8 : 3$$

$$\text{Formula} = \text{C}_2\text{H}_8\text{O}_3$$

96. Ans (2)

$$2 \text{ gC adsorbed} \equiv 100(0.6 - 0.5) \times 10^{-3} \text{ moles of CH}_3\text{COOH}$$

$$= 10^{-2} \text{ moles of CH}_3\text{COOH}$$

$$= 10^{-2} \times 60 \text{ g of CH}_3\text{COOH}$$

$$1 \text{ gC adsorbed} = \frac{0.6}{2} \text{ g CH}_3\text{COOH}$$

$$= 0.3 \text{ g CH}_3\text{COOH}$$

SUBJECT : BOTANY

SECTION-A

102. Ans (4)

NCERT - XI ; Page No. # 208

105. Ans (1)

NCERT - XI, Pg - 211

107. Ans (3)

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108. Ans (4)

NCERT Pg. # 214

121. Ans (4)

NCERT : Page no. 228

124. **Ans (1)**

Module no. 3, Pg - 211

SECTION-B136. **Ans (1)**

NCERT, Page No. # 218

137. **Ans (3)**

NCERT (XI) Pg. # 220

139. **Ans (4)**

NCERT Page No. # 211

142. **Ans (2)**

NCERT-XI, Pg#207

SUBJECT : ZOOLOGY**SECTION-A**172. **Ans (1)**

NCERT XI(E) page 297

174. **Ans (1)**

NCERT New update

184. **Ans (3)**

NCERT XI(E) page 290

SECTION-B198. **Ans (2)**

NCERT (XI) Pg. # 291, 292, 293, 294

199. **Ans (1)**

NCERT XI Pg. # 294,295