Enthusiast, Leader & Achiever Course

PHASE : ALL PHASE

TARGET : PRE-MEDICAL 2020

Test Type : **MAJOR** Test Pattern : **NEET (UG)**

TEST DATE : 12-08-2020

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.	3	2	3	4	4	3	2	3	4	3	2	2	2	4	1	3	4	3	1	4	4	3	1	4	4	1	4	2	1	1
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.	1	2	3	3	4	3	1	4	3	2	4	3	1	4	2	4	2	3	2	1	4	2	4	2	2	2	4	4	4	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.	2	2	4	3	1	3	3	2	2	4	4	1	4	3	2	2	1	2	3	2	1	1	1	2	3	3	3	1	4	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	2	3	4	3	1	1	4	4	1	4	3	4	2	4	4	1	1	1	2	3	3	2	1	4	3	1	2	3	1
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	3	4	3	4	2	3	1	3	4	2	3	4	3	1	4	3	4	3	3	2	4	3	1	2	4	3	4	3	4
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.	2	1	2	1	3	4	4	2	2	2	1	4	2	4	3	3	2	4	4	3	4	3	4	3	3	2	2	2	3	1

HINT – SHEET

1. Ans (3)

$$\frac{GM^2}{(2R)^2} = \frac{mv^2}{R}$$

$$\therefore \quad V = \frac{1}{2}\sqrt{\frac{GM}{R}}$$

2. Ans (2)

$$g' = g\left(1 - \frac{d}{R}\right)$$

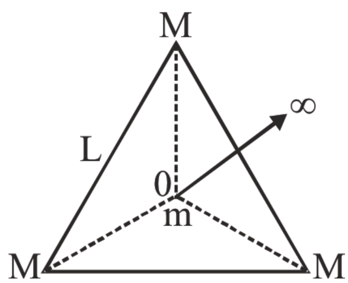
$$g' = \frac{g}{4}$$

$$\frac{g}{4} = g\left(1 - \frac{d}{R}\right)$$

$$\frac{d}{R} = 1 - \frac{1}{4} = \frac{3}{4}$$

$$d = \frac{3}{4}R$$

3. Ans (3)



A/c to COME

$$E_0 = E_\infty$$

$$\frac{1}{2}mV_e^2 + \left(\frac{-GMm}{\left(\frac{L}{\sqrt{3}}\right)} \times 3\right) = 0 + 0$$

$$V_e = \sqrt{\frac{6\sqrt{3}GM}{L}}$$

4. Ans (4)

$$\frac{L}{K.E} = \frac{mVR_0}{\frac{1}{2}mV^2} = \frac{2R_0}{V} = 2\sqrt{\frac{R_0^3}{GM}}$$

5. **Ans (4)**

$T\sin\theta = m\omega^2 r$

$T\sin\theta = m\omega^2 L\sin\theta$

$T = m\omega^2 L$

$324 = \frac{1}{2}(\omega^2)\ \frac{1}{2}$

$\omega = 36$

6. **Ans (3)**

By conservation of momentum,

$2m \times 5 = m \times V'$

So, $V' = 10$ m/sec

Let , skater stops after travelling distance s.

So, $0^2 = 10^2 - 2 \times \mu \times g \times s$

S = 10 m

7. **Ans (2)**

$h_1 - h_2 = \frac{1}{2}g(t_1^2 - t_2^2) = \frac{1}{2} \times 9.8\ [(5)^2 - (3)^2]$

$= 8 \times 9.8 = 78.4$ m

8. **Ans (3)**

Given

$\vec{u} = \hat{i} \times (\vec{a} \times \hat{i}) + \hat{j} \times (\vec{a} \times \hat{j}) + \hat{k} \times (\vec{a} \times \hat{k})$

Let $\vec{a} = a_x\hat{i} + a_y\hat{j} + a_z\hat{k}$

$\vec{a} \times \hat{i} = -a_y\hat{k} + a_z\hat{j},\ \hat{i} \times (\vec{a} \times \hat{i}) = a_y\hat{j} + a_z\hat{k}$

$\vec{a} \times \hat{j} = -a_x\hat{k} - a_z\hat{i},\ \hat{j} \times (\vec{a} \times \hat{j}) = a_x\hat{i} + a_z\hat{k}$

$\vec{a} \times \hat{k} = -a_x\hat{j} + a_y\hat{i},\ \hat{k} \times (\vec{a} \times \hat{k}) = a_x\hat{i} + a_y\hat{j}$

So $\vec{u} = 2\vec{a}$

9. **Ans (4)**

$Y = \frac{F/A}{\Delta L/L} \Rightarrow F = \left(\frac{AY}{L}\right)\Delta L$

$\Rightarrow W = \left(\frac{AY}{L}\right)\ell$ .....(i)

$\Rightarrow$ When W & 3W attached at two ends of string then tension $T = \frac{2(W)(3W)}{W + 3W} = \frac{3W}{2}$

$\Rightarrow \frac{3W}{2} = \left(\frac{AY}{L}\right)x$ .....(ii)

By equation (i) and (ii) $x = \frac{3\ell}{2}$

10. **Ans (3)**

Before entering water, velocity of ball = $\sqrt{2gh}$.

If after entering water, this velocity does not change then it should be equal to terminal velocity.

$\therefore \sqrt{2gh} = \frac{2}{9}\frac{r^2(\rho_b - \rho_w)g}{\eta}$

$h = \frac{1}{2g}\left[\frac{2}{9}\frac{r^2(\rho_b - \rho_w)g}{\eta}\right]^2$

$= \frac{2}{81}\frac{r^4(\rho_b - \rho_w)^2 g}{\eta^2}$

$= \frac{2}{81} \times \frac{(3 \times 10^{-4})^4(10^4 - 10^3)^2 \times 10}{(10^{-5})^2} = 1.6 \times 10^3$ m

11. **Ans (2)**

Using continuity equation :-

$A_1V_1 = A_2V_2 \Rightarrow 10 \times 1 = 5 \times V_2 \Rightarrow V_2 = 2$m/s

Applying Bernoulli's theorem

$P_1 + \frac{1}{2}\rho V_1^2 = P_2 + \frac{1}{2}\rho V_2^2$

$\Rightarrow 2000 + \frac{1}{2} \times 1000 \times (1)^2 = P_2 + \frac{1}{2} \times 1000 \times (2)^2$

$\Rightarrow P_2 = 500$ Pa

12. **Ans (2)**

Here, the work done by surface tension force is being converted into gravitational potential energy and heat.

so $W_{Fs} = U_g +$ heat

$\Rightarrow (2\pi r)(T) \times (h) = mg\ h/2 +$ heat {h/2 because of P. E. of com.}

$\Rightarrow 2\pi T \times r \times \frac{2T}{r\rho g} = \frac{(\rho g \times \pi r^2 \times h) \times 2T}{r\rho g} \times \frac{1}{2} +$ heat

get heat evolved $= \frac{2\pi T^2}{\rho g}$

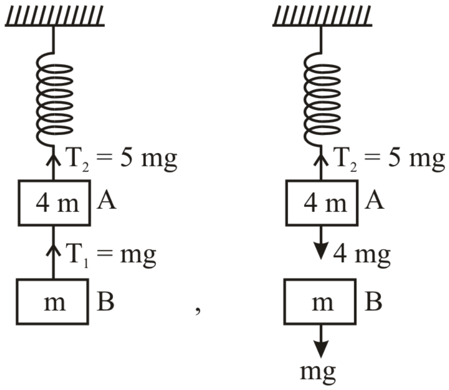
13. **Ans (2)**

$T_1 = m(g - a_1)$

$T_2 = mg$

$T_3 = m(g + a_2)$

14. Ans (4)



When string is cut acceleration of A

$$a_A = \frac{5mg - 4mg}{4m} = \frac{g}{4} \text{ up wards}$$

Acceleration of B, $a_B = g$ downwards

15. Ans (1)

$$\text{Acceleration } a = \frac{30 - 10}{5 + 3 + 2} = 2 \text{ m/s}^2$$

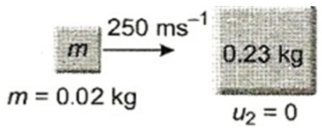
$T_2 - 10 = 2 \times a \quad T_2 = 10 + 2 \times 2 = 14$ N

$T_1 - T_2 = 3a \Rightarrow T_1 = 14 + 3 \times 2 = 20$ N

$$\frac{T_1}{T_2} = \frac{20}{14} = \frac{10}{7}$$

16. Ans (3)

After the impact bullet and block move together and comes to rest after covering a distance of 40 m.



By conservation of momentum,

$m_1u_1 + m_2u_2 = m_1v_1 + m_2v_2$

or

$\Rightarrow \quad 0.02 \times 250 + 0.23 \times 0 = 0.02 \text{ v} + 0.23 \text{ v}$

$\Rightarrow \quad 5 + 0 = v(0.25)$

$\Rightarrow \quad V = 500 / 25 = 20 ms^{-1}$

By conservation of energy,

$\Rightarrow$

$$\frac{1}{2}Mv^2 = \mu N d$$

$$\Rightarrow \text{ or } \frac{1}{2} \times 0.25 \times 400 = \mu \times 0.25 \times 9.8 \times 40$$

$$\Rightarrow \mu = \frac{200}{9.8 \times 40} = 0.51$$

$\Rightarrow \mu = 0.51$

17. Ans (4)

Since t = const., α = const.

Let n_1 = no. of additional rotations before coming to rest

$\omega_f^2 - \omega_i^2 = 2\alpha\theta$

$$\Rightarrow \left(\frac{\omega_0}{2}\right) - \omega_0^2 = 2\alpha(2\pi n) \text{ or } \frac{-3\omega_0^2}{4} = 4\alpha\pi n$$

$$\text{also, } 0^2 - \left(\frac{\omega_0}{2}\right)^2 = 2\alpha(2\pi n_1)$$

$$\text{or } \frac{-\omega_0^2}{4} = 4\alpha\pi n_1$$

$$\Rightarrow \frac{n_1}{n} = \frac{1}{3} \quad \therefore n_1 = n/3$$

18. Ans (3)

M = Mass of the square plate before cutting the holes

Mass of one hole,

$$m = \left(\frac{M}{16R^2}\right)\pi R^2 = \frac{\pi M}{16}$$

$\therefore$ Moment of inertia of the remaining portion

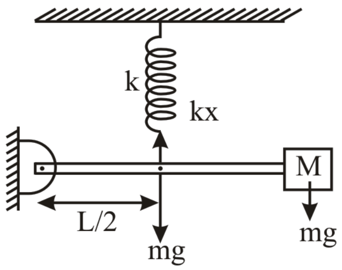
$$I = I_{square} - 4I_{hole}$$

$$= \frac{M}{12}(16R^2 + 16R^2) - 4\left[\frac{mR^2}{2} + m(2R^2)\right]$$

$$= \frac{8}{3}MR^2 - 10mR^2$$

$$= \left(\frac{8}{3} - \frac{10\pi}{16}\right)MR^2$$

19. Ans (1)



Balance torque on rod.

$$\vec{\tau}_{spring} + \vec{\tau}_{rod} + \vec{\tau}_{mass} = \vec{0}$$

$$\vec{\tau}_{spring} = (kx)\frac{L}{2} \text{AC W}$$

$$\vec{\tau}_{rod} = Mg\frac{L}{2} \text{CW} \quad \text{(due to weight of rod)}$$

$$\vec{\tau}_{mass} = MgL \quad \text{CW (due to weight of mass M)}$$

$$\text{so, } kx\frac{L}{2} - mg\frac{L}{2} - mgL = 0$$

$$x = \frac{3Mg}{k}$$

20. Ans (4)

$$\vec{L} = \vec{r} \times \vec{p} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 1 & 2 & -1 \\ 3 & 4 & -2 \end{vmatrix}$$

$$\vec{L} = \vec{r} \times \vec{p} = \hat{i}(-4+4) - \hat{j}(-2+3) + \hat{k}(4-6)$$

$$= 0\hat{i} - 1\hat{j} - 2\hat{k}$$

$\vec{L}$ has components along –y-axis and -z-axis but it has no components in the x-axis. The angular momentum is in Y–Z plane, i.e. perpendicular to x-axis.

21. Ans (4)

$D = D_1 - D_2 = 4.23 - 3.87 = 0.36$ cm

$\Delta D = \Delta D_1 + \Delta D_2 = 0.02$ cm

$$t = \frac{D}{2} = 0.18 \text{ cm}$$

$$\frac{\Delta t}{t} = \frac{\Delta D}{D}$$

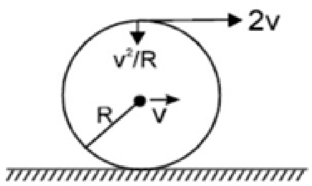
$$\Rightarrow \Delta t = \frac{\Delta D}{2} = 0.01$$

$$\Rightarrow t = (0.18 \pm 0.01) \text{ cm}$$

22. Ans (3)

Radius of Curvature is given by

$$= \frac{(\text{velocity})^2}{\text{Normal acceleration}} = \frac{(2v)^2}{\frac{v^2}{R}} = 4R$$



23. Ans (1)

$$x_m = \frac{\int_0^1 dm\, x}{\int_0^1 dm}$$

when b tends to 0 the density becomes uniform and hence the centre of mass is at 0.5. So option

(a) tends to 0.5 as b tends to 0.

24. Ans (4)

As cross-section areas of both the tubes A and C are same and tube is horizontal. Hence according to equation of continuity

$v_A = v_C$

Therefore according to Bernoull's theorem

$P_A = P_C$

i.e. height of liquid is same in both the tubes A and C

25. Ans (4)

Given F $\propto v^2$

As power is given by P = FV

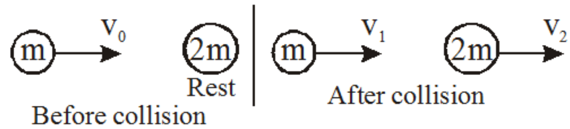
Therefore P $\propto v^3$

$$\frac{P_2}{P_1} = \left(\frac{V_2}{V_1}\right)^3$$

$$\frac{P_2}{24} = \left(\frac{2v}{v}\right)^3 = 8$$

$P_2 = 192$ hp

26. Ans (1)



By conservation of linear momentum

$$mv_0 = mv_1 + 2mv_2$$

or $\quad v_0 = v_1 + 2v_2 \quad$ .....(1)

Coefficient of restitution

$$e = \frac{v_2 - v_1}{v_0} \Rightarrow ev_0 = v_2 - v_1 \quad .....(2)$$

by (1) & (2)

$$(1-2e)v_0 = 3v_1 \quad .....(3)$$

$$\frac{v_1}{v_0} = \frac{1-2e}{3}$$

Ratio of KE of m, after & before

$$\frac{k_f}{k_i} = \left(\frac{v_1}{v_0}\right)^2 = \left(\frac{1-2e}{3}\right)^2$$

27. Ans (4)

$$v_1 = \frac{v_A}{2}, v_2 = \frac{v_A + v_B}{2}$$

$$v_3 = \frac{v_B}{2} = \frac{2[v_2 - v_1]}{2}$$

28. Ans (2)

$\vec{u} = \hat{i} + 2\hat{j} \quad u\cos\theta = 1, \ \tan\theta = 2$

$y = x\tan\theta - \dfrac{g}{2(u\cos\theta)^2}.x^2$

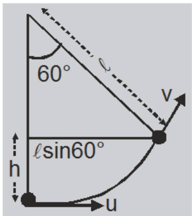
$y = 2x - 5x^2$

29. Ans (1)

$$\frac{a}{V + \left(-\frac{\sqrt{3}V}{2}\right)} = \frac{2a}{V(2-\sqrt{3})}$$

30. Ans (1)

$h = \ell - \ell\cos60° = \ell - \ell \times \dfrac{1}{2} = \ell/2$



by law of conservation of mechanical energy

$$\frac{1}{2}mu^2 = \frac{1}{2}mv^2 + mgh$$

$$\therefore \quad v^2 = u^2 - 2g\frac{\ell}{2}$$

$$v = \sqrt{(3)^2 - 10 \times \frac{1}{2}} = 2 \ \text{m/s}$$

31. Ans (1)

For $\theta < 5°$ $\tan\theta \approx \theta \approx 2 = 2 \times \dfrac{\pi}{180}$

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

$$\frac{2 \times 3.14}{180} = \frac{h}{1800} = 62.8 \ \text{mm}$$

32. Ans (2)

$mg = 20N$ and $\dfrac{mv^2}{r} = \dfrac{2 \times (4)^2}{1} = 32N$

It is clear that 52 N tension will be at the bottom of the circle. Because we know that

$$T_{Bottom} = mg + \frac{mv^2}{r}$$

33. Ans (3)

$F = (100 + 8 + 4)\,a = 112\,a \quad .....(1)$

For balancing B & C

Pseudo force on B $F_B = 8a$

$T_{BC} = mg = 4g = 8a$

$a = g/2, \ F = 112\left(\dfrac{g}{2}\right) = 560 \ N$

34. Ans (3)

Viscous force is given by

$$F = \eta A\frac{V}{d}$$

$$\frac{F_1}{F_2} = \frac{V_1}{V_2}$$

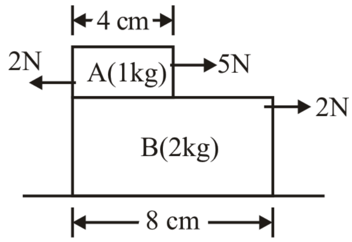
$$\frac{800}{2400} = \frac{2}{V_2}$$

$V_2 = 6 \ \text{cm/s}$

35. Ans (4)

$$F_{max} = \frac{(1)(3)(0.2)(10)}{2} = 3N$$

So there will be relative motion.



$a_A = \dfrac{5-2}{1} = 3 \ \text{m/s}^2$

$a_B = \dfrac{2}{2} = 1 \ \text{m/s}^2$

$a_{AB} = 3 - 1 = 2 \ \text{m/s}^2$

$x_{AB} = \dfrac{1}{2}a_{AB}t^2$

$\dfrac{4}{100} = \dfrac{1}{2}(2)\,t^2 \Rightarrow t = \dfrac{2}{10} = 0.2s$

36. Ans (3)

For equilibrium, the total upward push will be equal to the downward pull. If V is the volume of the sphere, then we have

$$\left(\frac{V}{3}\right)(13.6)\,g + \left(\frac{2V}{3}\right)(0.9)\,g = V\rho g$$

$$\therefore \quad \rho = \left(\frac{13.6 + 1.8}{2}\right) gcm^{-3} = 5.1 \ g\,cm^{-3}$$

37. Ans (1)

$w = \dfrac{1}{2} \times 6 \times 10 - 4 \times 5 + 4 \times 5 - 5 \times 2$

$\quad = 30 - -20 + 20 - 10 = 20J$

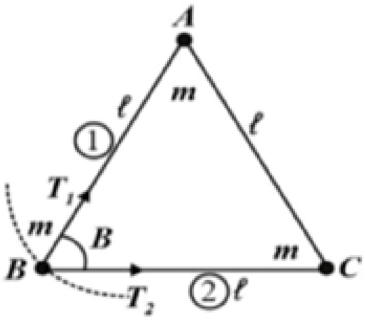
$w = k_f - k_i$

$20 = k_f - 25$

$k_f = 45J$

38. Ans (4)

B moves in a circle (shown by the dashed curve) of radius l with uniform speed.



Massless rod 1 can exert force T_1 on B only along its length i.e. towards the center of the circular path. Hence T_1 contributes only to centripetal acceleration of B.

The tension in rod 2 that is, T_2 can contribute to both tangential and centripetal acceleration of B.

As the angular speed is uniform so tangential acceleration of B is zero. Hence $T_2 = 0$

The tension in rod connecting mass B and C is zero.

39. Ans (3)

Power $P = \frac{3t^2}{2}$, $P = Fv = m\left(\frac{dv}{dt}\right)v$

$$\Rightarrow \int_0^V mv\ dv = \int_0^2 \frac{3t^2}{2}dt \Rightarrow \frac{1}{2}m\left[v^2\right]_0^v = \frac{3}{2}\left[\frac{t^3}{3}\right]_0^2$$

$\Rightarrow 2v^2 = 2^3 \quad \Rightarrow v = 2$ m/s

40. Ans (2)

$$\left[\frac{\text{Magnetic flux}}{\text{Electronic flux}}\right] = \left[\frac{B.A.}{E.A.}\right] = \left[\frac{B}{E}\right]$$

As, $\left[\frac{E}{B}\right] = [\text{Velocity}] = [LT^{-1}]$

$\Rightarrow \left[\frac{B}{E}\right] = [TL^{-1}]$

41. Ans (4)

$g = 4\pi^2 L/T^2$

Here, $T = \frac{t}{n}$ and $\Delta T = \frac{\Delta t}{n}$. Therefore, $\frac{\Delta T}{T} = \frac{\Delta t}{t}$.

The errors in both L and t are the least count

$(\Delta g/g) = (\Delta L/L) + 2\,(\Delta T/T)$

$$= \frac{0.01}{20.0} + 2\left(\frac{1}{90}\right) = 0.027$$

Thus, the percentage error in g is

$100\,(\Delta g/g) = 100(\Delta L/L) + 2 \times 100\,(\Delta T/T)$

$= 3\%$

42. Ans (3)

1 AU = 1.496×10^{11} m

1 light year = 9.46×10^{15} m

1 parsec = 3.08×10^{16} m

1 fermi = 10^{-15} m

43. Ans (1)

Initial Angular momentum

$L_i = I_1\omega_1 = 100\left(\frac{2\pi}{10}\right)$ ....(1)

Final Angular momentum

$L_f = (I_1 + mR^2)\omega_2 = (100 + 50 \times 2^2)\omega_2$ ....(2)

By $L_f = L_i$

$\Rightarrow \quad 300\omega_2 = 100\left(\frac{2\pi}{10}\right)$

$\Rightarrow \quad \omega_2 = \frac{2\pi}{30}$

44. Ans (4)

$E_{sphere} = \frac{1}{2}I\omega^2 = \frac{1}{2}\left(\frac{2}{5}mR^2\right)\omega^2$ .....(1)

$E_{cylinder} = \frac{1}{2}\left(\frac{mR^2}{2}\right)(2\omega)^2$

$$\frac{E_{sphere}}{E_{cylinder}} = \frac{1}{5}$$

45. **Ans (2)**

As, $\upsilon = \sqrt{\dfrac{2gh}{1+\dfrac{I}{MR^2}}}$

hence velocity is independent of the inclination of the plane and depends only on height h through with body descends.

But because $t = \dfrac{1}{\sin\theta}\sqrt{\dfrac{2h}{g}\left(1+\dfrac{I}{MR^2}\right)}$ depends

on the inclination also, hence greater the inclination lesser will be the time of descend. Hence, in present case, the speed will be same (because h is same) but time of descend will be different (because of different inclinations).

46. **Ans (4)**

$$C_xH_y + O_2 \rightarrow xCO_2 + \frac{y}{2}H_2O$$

mol. 2 4 4

$x = 2, \quad \dfrac{y}{2} = 2 \Rightarrow y = 4$

H.C. = C_2H_4

47. **Ans (2)**

1g molecule of V_2O_5

$\Rightarrow$ 1 mol of V_2O_5

$\Rightarrow$ 1 mol of V_2O_5 contain 2 mol of V-atom

48. **Ans (3)**

$$2A_2B_{3(g)} + 5C_{2(g)} \rightarrow 3C_3B_{2(g)} + CA_{4(g)}$$

Volume 50 200

L.R. $\dfrac{50}{2} = 25 \quad \dfrac{200}{5} = 40$

A_2B_3 is L.R. Acc. to stoichiometry

C_3B_2 = 75 ml, CA_4 = 25 ml

and reacted C_2 = 125 ml

So remaining C_2 = 75 ml

49. **Ans (2)**

n = 2, He^+, Z = 2

$$E_{n=2} = -13.6\left(\frac{Z^2}{n^2}\right) eV$$

$$E_{n=2} = -13.6 \times \left(\frac{2}{2}\right)^2 = -13.6eV$$

50. **Ans (1)**

$\lambda = \sqrt{\dfrac{150}{V}}$ Å

51. **Ans (4)**

No. of orbital in a shell = n^2

P_{shell} - n = 6

no. of orbital = $(6)^2$ = 36

52. **Ans (2)**

$\Delta x \cdot m\Delta V = \dfrac{h}{4\pi}$

$\Rightarrow \Delta V = \dfrac{h}{4\pi m(\Delta x)}$

$= \Delta V = 0.57 \times 10^7\ ms^{-1}$

53. **Ans (4)**

pK_w depends on temperature

54. **Ans (2)**

Value of K depends only on temperature.

55. **Ans (2)**

$PM_0 = dRT$

$M_0 = \dfrac{dRT}{P} = \dfrac{0.92 \times 0.082 \times 900}{1}$

$M_0 = 67.98$

$\alpha = \dfrac{M_T - M_0}{M_0(n-1)}$ M_T = Theortical molar mass

$\alpha = \dfrac{80 - 67.98}{67.98\left(\dfrac{3}{2} - 1\right)} \Rightarrow \alpha = 35.29\%$

56. **Ans (2)**

$pK_W = 12$

at neutral point pH = pOH = 6

so pH = 6.9 will be of basic solution.

57. **Ans (4)**

Due to common ion effect equation of H_2S will shift in backward direction and $[S^{-2}]$ will decrease.

58. **Ans (4)**

Potassium ferricyanide does not give the test of ferric ion as it is available as $[Fe(CN_6)]^{-3}$ complex ion.

59. **Ans (4)**

W = – 300 J

9 = + 100 cal = 420 J

ΔE = 9 + W

ΔE = 420 – 300

60. Ans (1)

$W = -P_{ext}(v_2 - v_1) = -2(6-2) = -8$ lit atm

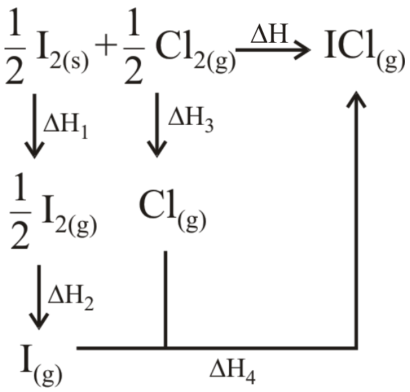
$= -8 \times 101.3\ J = -810.4\ J$

61. Ans (2)

No. of moles of benzene $= \frac{0.39}{78} = 5 \times 10^{-3}$ moles

Heat evolved corresponding to 0.005 mole benzene $= 5 \times 10^{-3} \times 3250 = 16.25$ kJ

62. Ans (2)



$\Delta H = \Delta H_1 + \Delta H_2 + \Delta H_3 + \Delta H_4$

$= \frac{1}{2} \times 62.76 + \frac{1}{2}(151) + \frac{1}{2}(242.3) - 211.3$

$= 16.8\ KJmol^{-1}$

63. Ans (4)

$$\overset{(+1)}{Cu_3}\overset{(-3)}{P} \longrightarrow \overset{(+2)}{Cu}SO_4 + H_3\overset{(+5)}{P}O_4$$

64. Ans (3)

$$\overset{+6}{Cr}O_4^{-2} \longrightarrow \overset{+6}{Cr_2}O_7^{-2}$$

66. Ans (3)

$P = \frac{dRT}{M}$

Given : $d_A = 2d_B$

$m_A = \frac{1}{2} M_B$

Let $d_B = d$, $d_A = 2d$

$m_B = m$, $m_A = \frac{m}{2}$

$$\frac{P_A}{P_B} = \frac{\left(\frac{dRT}{M}\right)_A}{\left(\frac{dRT}{M}\right)_B} = \frac{\left(\frac{2d}{m/2}\right)}{\left(\frac{d}{m}\right)} = \frac{4}{1}$$

68. Ans (2)

Non-reacting gases follow Dalton's law of partial pressure.

70. Ans (4)

Size of isoelectronic species is

Anion > Neutral > Cation

89. Ans (4)

Fact

99. Ans (4)

Mustard, *Argemone*, pumpkin, Bottle gourd

⇒ Parietal placentation

Gram, Pea ⇒ Marginal Placentation

Dianthus ⇒ Free central placentation

105. Ans (4)

A,B,C statement are correct

D statement is wrong

159. Ans (2)

NCERT-XI Pg. No. # 130

160. Ans (2)

NCERT-XI Pg. No. - 136

162. Ans (4)

NCERT-XI Pg. No. 138

166. Ans (3)

NCERT-XI Pg. No. 166

167. Ans (2)

NCERT-XI Pg. No. 132 (E)

NCERT-XI Pg. No. 131 and 133 (H)

169. Ans (4)

NCERT-XI Pg. No. # 137

172. Ans (3)

NCERT XI Page No. # 137