Enthusiast, Leader & Achiever COURSE

PHASE : (All Phase)

TARGET : PRE-MEDICAL 2020

Test Type :**DRILL TEST # 11** Test Pattern : **NEET (UG)**

TEST DATE : 26-04-2020

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

HINT – SHEET

1. Ans (1)

Vector perpendicular to $\left(\hat{i}+\hat{j}\right)$ is $\left(\hat{i}-\hat{j}\right)$.

Here $\vec{A}=3\hat{i}+4\hat{j}$ and $\vec{B}=\hat{i}-\hat{j}$

$\therefore \quad \vec{A}\cdot\vec{B}=3-4=1$

$\vec{B}=\hat{i}-\hat{j}$

and $B^2=2$.

2. Ans (4)

$I=\frac{2}{5}MR^2$

$I=MR^2$

$\frac{\Delta I}{I}=\frac{\Delta M}{M}+2\left(\frac{\Delta R}{R}\right)$

$=2\%+2(1\%)$

$=4\%$

3. Ans (3)

Stopping distance $s=\frac{u^2}{2a}$

$s \propto u^2$ (car is same)

$\frac{s_1}{s_2}=\frac{u_1^2}{u_2^2} \Rightarrow \frac{6}{s_2}=\left(\frac{50}{100}\right)^2=\left(\frac{1}{2}\right)^2=\frac{1}{4}$

$S_2=6\times 4=24$

4. Ans (3)

Let s be the distance travelled by each car.

Then

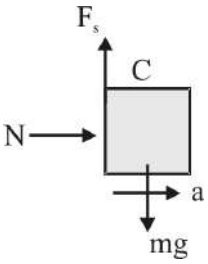
$\sqrt{2a_1 s}-\sqrt{2a_2 s}=v_0$ and $\sqrt{\frac{2s}{a_2}}-\sqrt{\frac{2s}{a_1}}=t_0$

$\therefore \quad \frac{v_0}{t_0}=\frac{\sqrt{a_1}-\sqrt{a_2}}{\frac{1}{\sqrt{a_2}}-\frac{1}{\sqrt{a_1}}}=\sqrt{a_1 a_2}$

6. Ans (2)

Horizontal acceleration of the system is,

$$a = \frac{F}{2m + m + 2m} = \frac{F}{5m}$$



Let N be the normal reaction between B and C.
Free body diagram of C gives

$$N = 2ma = \frac{2}{5}F$$

Now, B will not slide downward if

$\mu N \geq m_B g$

or $\mu\left(\frac{2}{5}F\right) \geq mg$

or $F \geq \frac{5}{2\mu}mg$

So, $F_{min} = \left(\frac{5}{2\mu}\right)mg$

7. Ans (3)

$$\vec{F} = \frac{30\left(\hat{i} + \hat{j} + \hat{k}\right)}{\sqrt{3}}; \vec{S} = \hat{i} + \hat{j} + \hat{k}$$

8. Ans (3)

If the motor pumps water (density ρ) continuously through a pipe of area of cross-section A with velocity v, then mass flowing out per second.

$$m = Av\rho \quad ...(i)$$

Rate of increase of kinetic energy

$$= \frac{1}{2}mv^2 = \frac{1}{2}(Av\rho)v^2 \quad ...(ii)$$

Mass m, flowing out per, sec, can be increased to m' by increasing v be v', then power increases from P to P'.

$$\frac{P'}{P} = \frac{\frac{1}{2}A\rho v'^3}{\frac{1}{2}A\rho v^3} \text{ or } \frac{P'}{P} = \left(\frac{v'}{v}\right)^3$$

Now, $\frac{m'}{m} = \frac{A\rho v'}{A\rho v} = \frac{v'}{v}$

As, $m' = nm; v' = nv$

$\therefore \frac{P'}{P} = n^3$

or $P' = n^3P.$

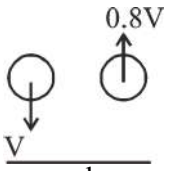
9. Ans (3)

$\omega_{min} = \frac{2\pi}{60}$ rad/ min and $\omega_{hr} =$

$\frac{2\pi}{12 \times 60}$ rad/ min

$\frac{\omega_{min}}{\omega_{hr}} = \frac{2\pi}{60} \times \frac{12 \times 60}{2\pi} = 12 : 1$

10. Ans (3)



$e = \frac{\text{vel. sep.}}{\text{vel. app}} = \frac{0.8V}{V} = 0.8$

$h_H = e^{2n} . h_0 = (0.8)^2 . h = (0.64\ h)$

13. Ans (1)

Here, angular momentum is conserved, i.e., L = Iω = constant. At A, the moment of inertia I is least, so angular speed and therefore the linear speed of planet at A is maximum.

14. Ans (2)

(I) W_S = True weight of the object,

$$= \frac{W_E}{\left[1 + \frac{h}{R}\right]^2} = \frac{10}{(1+6)^2}N = \frac{10}{49} \cong 0.2\ N$$

(II) Apparent weight of the object,

$W_{app.} = m(g' - a) = m(g' - g')$

$= 0N$ ($\because$ a = g' = acceleration of the satellite)

15. Ans (3)

Rise in temp $\Delta\theta = \frac{3T}{J\rho S}\left(\frac{1}{r} - \frac{1}{R}\right)$

for water ρ = 1 gm/cc

S = 1 cal/gm°C

$\therefore \Delta\theta = \frac{3T}{J}\left(\frac{1}{r} - \frac{1}{R}\right)$

16. Ans (3)

$V = \ell \times \pi \frac{D^2}{4} \qquad \left(r = \frac{D}{2}\right)$

$dV = d\ell \times \frac{\pi D^2}{4} + \ell \times 2D\, dD$ if $dV = 0$

then $d\ell \times \frac{\pi D^2}{4} + \ell \frac{\pi}{4} \times 2D\, dD = 0$

$\Rightarrow \frac{d\ell}{\ell} = -2 \frac{dD}{D}. \Rightarrow \sigma = \frac{-\frac{dD}{D}}{\frac{d\ell}{\ell}} = +\frac{1}{2} = 0.5$

17. Ans (2)

$F = \frac{9}{5}C + 32$

18. Ans (4)

Hence, $m = 50\ kg = 50 \times 10^3\ g$

$\Delta Q = 1500\ kcal = 1.5 \times 10^6\ cal$

$s = 0.83\ cal\ g^{-1}{}^{\circ}C^{-1}$

As $\Delta Q = ms\Delta T$

$\Delta T = \frac{\Delta Q}{ms} = \frac{1.5 \times 10^6}{50 \times 10^3 \times 0.83} = 36.14^{\circ}C$

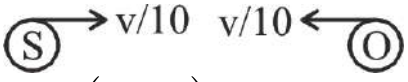
20. Ans (4)

$Q_1 \propto T^4$

$Q_2 \propto (2T)^4$

$Q_2 = 16Q_1$

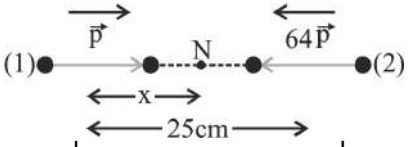
23. Ans (2)



$f' = f\left(\frac{v + v_0}{v - v_s}\right)$

24. Ans (1)

Suppose neutral point N lies at a distance x from dipole of moment p or at a distance (25–x) from dipole of 64 p.



At N |E. F. due to dipole (1)|

= |E. F. due to dipole (2)|

$\Rightarrow \frac{1}{4\pi\varepsilon_0} \cdot \frac{2p}{x^3} = \frac{1}{4\pi\varepsilon_0} \cdot \frac{2(64p)}{(25-x)^3}$

$\Rightarrow \frac{1}{x^3} = \frac{64}{(25-x)^3} \Rightarrow x = 5cm.$

30. Ans (1)

The horizontal components are $(B_H)_1 = B \cos \phi_1$ and $(B_H)_2 = B \cos \phi_2$

$\therefore \frac{(B_H)_1}{(B_H)_2} = \frac{\cos\varphi_1}{\cos\varphi_2} = \frac{\cos 30}{\cos 45} = \frac{\sqrt{3}}{2} \times \sqrt{2} = \frac{\sqrt{3}}{\sqrt{2}}$

34. Ans (1)

$i_{rms} = \sqrt{\frac{\int_2^4 (2\sqrt{t})^2 dt}{\int_2^4 dt}} = 2\sqrt{3}A$

35. Ans (3)

$\mu_g V_g = \mu_w V_w \Rightarrow \frac{V_g}{V_w} = \frac{\mu_w}{\mu_g} = \frac{4/3}{3/2} = \frac{8}{9}$

36. Ans (2)

$U = \infty$, $f = V = -50cm$

$P = \frac{1}{f_{(m)}}$

$\frac{100}{f(cm)} = \frac{-100}{50} = -2D$

38. Ans (2)

For point C, without slab path difference is 0

In presence of slab path difference is $(\mu - 1) \cdot d$ for point C

for minimum intensity path difference should be $(2n-1)\frac{\lambda}{2}$

so $(\mu - 1)\, d = \frac{(2n-1)\lambda}{2} \Rightarrow d = \frac{(2n-1)\lambda}{2(\mu - 1)}$

for minimum intensity $n = 1$ so

$\delta_{min} = \frac{\lambda}{2(\mu - 1)}$

40. Ans (4)

$n_e \propto \frac{1}{d^2}$

41. Ans (3)

$Q = BE_{(prod)} - BE_{(React)}$

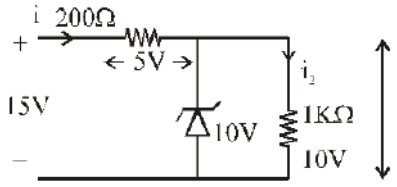
43. Ans (3)

$\Delta V_0 = (\Delta I_C)Rc = (5mA)\ 5k\Omega$

$= 25$ Volt

45. Ans (3)

$v_{in} > v_z$ hence diode is at B/D



$i = 5/200 = 0.025A$

i_L $10/10^3 = 10mA$

$i_Z = i - i_L = 25 - 10 = 15mA$

48. Ans (3)

$\Delta H = \Theta ve$

$\Delta ng = \Theta ve$

49. Ans (4)

On heating water K_w increases and thus pH, scale for neutrality changes from 7 to some lower values i.e. 6.8 or 6.9 depending upon K_w values.

50. Ans (2)

$\Delta G = -T\Delta S_{Total}$

55. Ans (4)

Emulsibier stabilizes emulsion.

59. Ans (3)

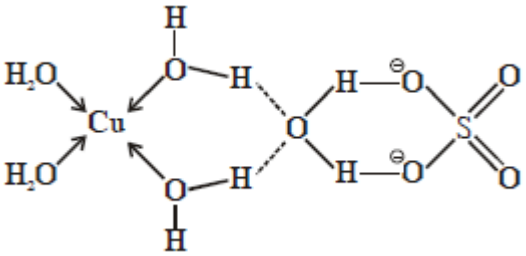
$$\frac{\Delta p}{p^o} = \frac{n}{n+N}$$

$$0.25 = \frac{n}{n+N}$$

$$\therefore \frac{n}{N} = \frac{1}{3}$$

$$\therefore m = \frac{n \times 1000}{N \times 18} = \frac{1}{3} \times \frac{1000}{18} = 18.51\ m$$

63. Ans (1)



66. Ans (3)

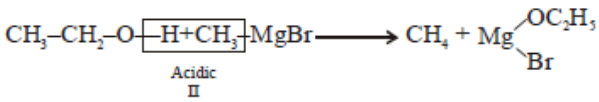
No. of ion in aq. sol^n ↑Conductivity ↑

$$K_4[Fe(CN)_6] \underset{sol^n}{\overset{aq.}{\rightleftharpoons}} 4K^+ [Fe(CN)_6]^{4-}$$

75. Ans (2)

$$H_2O_2 + Cl_2 \rightarrow 2HCl + O_2$$

79. Ans (3)



88. Ans (3)

NCERT (XIIth) Part II, Pg. # 372

102. Ans (3)

NCERT XI Pg.#86

103. Ans (1)

NCERT (XI) Pg. # 94, para 6.8 (a)

106. Ans (2)

NCERT, Page No. # 163

108. Ans (4)

NCERT Pg. # 167

110. Ans (4)

NCERT-XI Pg. # 152

115. Ans (1)

NCERT Pg. # 210

121. Ans (4)

NCERT, Page#27(E), 29(H)

124. Ans (2)

NCERT (XII) Pg. # 84

131. Ans (1)

NCERT XII, Pg.# (E) 203; Para-1; (H) 222, Para-1

135. Ans (1)

NCERT Pg. # 209

139. Ans (2)

NCERT Pg # 253

152. Ans (1)

Module Pg # 91

153. Ans (4)

NCERT XIth Pg.#106

159. Ans (4)

NCERT–XI, Pg. # 282, Para-1 (E)

NCERT–XI, Pg. # 283, Para-1 (H)

160. Ans (3)
NCERT-XI, Pg # 287

161. Ans (2)
NCERT–XI, Pg. # 294, Para-2 (E)
NCERT–XI, Pg. # 295, Para-2 (H)

165. Ans (2)
NCERT-XI, Pg. # 319, 320

168. Ans (4)
NCERT (XI) Pg. # 335 para(22.2.7)

170. Ans (2)
NCERT–XII, Pg. # 50, Para-1 (E)
NCERT–XII, Pg. # 55, Para-2 (H)

171. Ans (2)
NCERT XII, Pg # 54

175. Ans (1)
NCERT XII, Pg.no. 140

176. Ans (4)
NCERT XII Pg. # 151, 3rd para

180. Ans (4)
NCERT (XIIth) Pg. # 168(E), 182(H)