

ENTHUSIAST, LEADER & ACHIEVER COURSE

PHASE : ALL PHASE

TARGET : PRE-MEDICAL 2024

Test Type : MAJOR

Test Pattern : NEET (UG)

TEST DATE : 24-04-2024

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.	4	1	2	3	2	1	3	3	4	2	3	3	3	3	1	4	1	2	4	2	4	3	1	1	1	1	2	3	2	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.	2	1	2	1	3	4	3	2	4	3	3	1	3	2	1	3	1	3	1	3	2	3	2	3	1	2	3	2	1	3
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.	1	1	3	2	3	1	3	2	4	3	4	3	2	4	3	1	1	3	3	1	3	1	4	4	2	2	2	4	4	2
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.	3	1	3	4	4	2	3	3	4	3	2	2	2	2	1	3	3	1	3	3	4	1	2	1	2	1	1	3	4	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.	1	3	4	4	1	3	2	1	2	3	2	2	3	4	4	1	4	1	4	3	2	1	2	3	1	3	2	2	3	2
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	4	3	3	4	2	3	4	1	1	2	3	2	4	3	1	3	4	3	2	4	3	4	3	2	3	2	4	3	2
Q.	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200										
A.	2	4	4	3	2	1	1	1	1	1	2	4	1	4	4	4	4	1	3	2										

HINT - SHEET

SUBJECT : BOTANY

SECTION-A

- Ans (4)**
NCERT-XII, Pg # 3
- Ans (1)**
NCERT Pg. No. 9
- Ans (2)**
NCERT Page No. # 19
- Ans (3)**
NCERT-XI Pg. # 23
- Ans (2)**
NCERT XI Pg # 27
- Ans (1)**
NCERT (XI) Pg # 38
- Ans (3)**
NCERT (XI) Pg. # 38

- Ans (3)**
NCERT XI Pg. No.74
- Ans (4)**
NCERT XI Pg # 76,77
- Ans (2)**
NCERT 11th Class
- Ans (3)**
NCERT, Pg. # 92
- Ans (3)**
NCERT 12th Class (Chapter-2) Page No. 23 :
Part : 2.2.1 Stamen, Microsporangium and Pollen Grain : Diagram : When a spindle is positioned asymmetrically in a dividing cell, the resulting daughter cells are unequal in size
- Ans (3)**
NCERT-XII, Pg. # 34
- Ans (3)**
NCERT 12th Class (Chapter-2) Page No. 27

15. **Ans (1)**
NCERT Module Pg. No. 222
16. **Ans (4)**
NCERT, Page No. 213
17. **Ans (1)**
NCERT Module Pg. No.
18. **Ans (2)**
NCERT Pg. # 229
19. **Ans (4)**
NCERT Pg. # 252
20. **Ans (2)**
NCERT Pg. No. # 251
21. **Ans (4)**
NCERT Pg. No. # 241
22. **Ans (3)**
NCERT-XII, Pg. # 235
23. **Ans (1)**
NCERT XII, Pg.No.#235-236
24. **Ans (1)**
NCERT XII, Pg.No.#235-236
25. **Ans (1)**
NCERT, Page no. 243
26. **Ans (1)**
NCERT, Page No. 243
27. **Ans (2)**
NCERT Pg. # 260
28. **Ans (3)**
NCERT Pg. # 107
29. **Ans (2)**
NCERT (XIIth) Pg. # 112
30. **Ans (1)**
NCERT XII Pg. # 181
31. **Ans (2)**
Pg.NCERT 187
32. **Ans (1)**
NCERT Pg. # 89

33. **Ans (2)**
NCERT-XII Pg. # 73, 76, 77
34. **Ans (1)**
NCERT page # 90
35. **Ans (3)**
NCERT Pg. # 188

SECTION-B

36. **Ans (4)**
NCERT Pg # 82 & 83
37. **Ans (3)**
NCERT Pg. No. 10
38. **Ans (2)**
NCERT XI, Pg. # 36
39. **Ans (4)**
NCERT Pg. No. 65
40. **Ans (3)**
NCERT XIth Pg.#70
41. **Ans (3)**
NCERT (XI) Pg. # 89
42. **Ans (1)**
NCERT XI Pg. No. # 87
43. **Ans (3)**
NCERT 12th Class (Chapter-2) Page No. 35
44. **Ans (2)**
NCERT Module Pg. No. 222
45. **Ans (1)**
NCERT Pg. # 216, 217
46. **Ans (3)**
NCERT-XI, Pg. # 240, 242, 243, 244
47. **Ans (1)**
NCERT Pg. # 266, 284
48. **Ans (3)**
NCERT Pg. No. 261
49. **Ans (1)**
NCERT (XIIth) Pg. # 111

50. **Ans (3)**
NCERT-XII Pg. # 81

SUBJECT : ZOOLOGY

SECTION-A

51. **Ans (2)**
NCERT Pg. # 53
54. **Ans (3)**
NCERT Pg. No. # 53
56. **Ans (2)**
NCERT-XI, Pg#112, IInd PARA
58. **Ans (2)**
NCERT-(XIth) Pg. # 284
60. **Ans (3)**
NCERT-XI Pg. # 294
64. **Ans (2)**
Pg. No. 339_XI NCERT
68. **Ans (2)**
NCERT-XII, Pg. # 54
70. **Ans (3)**
NCERT Pg. # 150
71. **Ans (4)**
NCERT (XIIth) Pg. # 150-151 (Para 8.2.1)
72. **Ans (3)**
NCERT-XII, Page No. 152 (E) and 164 (H),
Para = 8.2.3
73. **Ans (2)**
NCERT (XII) Pg. # 136
74. **Ans (4)**
NCERT : PAGE 137
75. **Ans (3)**
NCERT XI, Pg. # 136
76. **Ans (1)**
NCERT page 133
77. **Ans (1)**
NCERT XI Pg # 145
78. **Ans (3)**
NCERT Pg. No. 172

79. **Ans (3)**
NCERT, Pg # 182

80. **Ans (1)**
NCERT Pg. # 210

81. **Ans (3)**
NCERT, Pg # 45

84. **Ans (4)**
NCERT Pg. # 333

SECTION-B

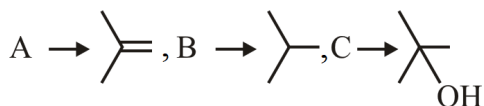
86. **Ans (2)**
NCERT-XII Page No. 48
89. **Ans (4)**
NCERT (XII) Pg. # 147, Para-8.1
90. **Ans (2)**
NCERT-XI, Pg. # 169
91. **Ans (3)**
NCERT-XI, Pg # 134
Four : Lysosome, Golgi body, ER, Thylakoid
92. **Ans (1)**
NCERT Pg.#149
93. **Ans (3)**
NCERT XII, Pg. No. 198
94. **Ans (4)**
NCERT-XI, Pg # 183
95. **Ans (4)**
NCERT-XI, Pg # 102,103
97. **Ans (3)**
NCERT XI Pg. # 284
98. **Ans (3)**
NCERT XI, Pg. No. 335
99. **Ans (4)**
NCERT-XI, Pg # 175

SUBJECT : CHEMISTRY

SECTION-A

112. **Ans (1)**
NCERT XI, Pg. # 370 (isomerisation)

113. Ans (2)



115. Ans (2)

$(\text{CH}_3)_3\text{C}^+$ has 9 α H

116. Ans (1)

I^{st} is most stable due to non polarity, II^{nd} is more stable than III^{rd} since $-ve$ is on more electronegativity & $+ve$ is on less electronegative.

117. Ans (1)

NCERT XI, Pg. # 345

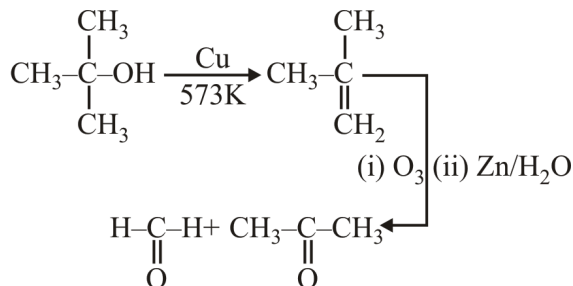
118. Ans (3)

NCERT XI, Pg. # 323

121. Ans (1)

Diazonium is prepared in cold condition.

122. Ans (3)



124. Ans (4)

NCERT (2021), Part-1, Pg # 20

125. Ans (1)

NCERT (2021), Part-1, Pg # 210

126. Ans (3)

NCERT (2021), Part-1, Pg # 227

127. Ans (2)

NCERT (2021), Part-1, Pg # 176

128. Ans (1)

NCERT (2021), Part-1, Pg # 181, 188

129. Ans (2)

NCERT (2021), Part-1, Pg # 55

130. Ans (3)

NCERT (2021), Part-II, Pg # 272

131. Ans (2)

NCERT-XII, Part-I, Pg # 40

133. Ans (3)

$\pi \propto i \times C$

134. Ans (4)

NCERT-XII, Part-1, Pg # 135

135. Ans (4)

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

$$\Rightarrow 1.62 = \frac{i \times 4.9 \times \frac{2}{25} \times 1000}{122} \Rightarrow i = 0.504$$

$$\therefore \alpha = \frac{1-i}{1-\frac{1}{n}} = \frac{1-0.504}{1-\frac{1}{2}}$$

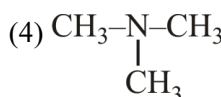
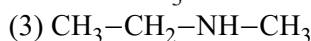
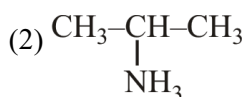
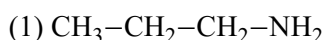
$$[\therefore 2\text{C}_6\text{H}_5\text{COOH} \rightleftharpoons (\text{C}_6\text{H}_5\text{COOH})_2]$$

$$= 0.496 \times 2$$

$$= 0.992 = 99.2\%$$

SECTION-B

143. Ans (2)



146. Ans (3)

NCERT (2021), Part-1, Pg # 37

147. Ans (2)

NCERT (2021), Part-II, Pg # 272

148. Ans (2)

NCERT-XII, Part-I, Pg # 67

150. Ans (2)

$$10^{\left(\frac{n \times E_{\text{cell}}^{\circ}}{0.06}\right)} = 10^6$$

$$\Rightarrow \frac{n \times E_{\text{cell}}^{\circ}}{0.06} = 6$$

$$\Rightarrow E_{\text{cell}}^{\circ} = \frac{6 \times 0.06}{2} = 0.18\text{V}$$

SUBJECT : PHYSICS

SECTION-A

152. **Ans (4)**

$$\text{Energy} \propto T^4$$

$$\frac{E_1}{E_2} = \left(\frac{T_1}{T_2} \right)^4$$

$$\frac{20}{E} = \left(\frac{T}{2T} \right)^4$$

$$E = 320 \text{ kcal/m}^2\text{-min}$$

153. **Ans (3)**

On heating all values increases.

154. **Ans (3)**

$$PV = NKT$$

$$V, K, T = \text{constant}$$

$$P \propto N$$

$$\frac{P}{P_2} = \frac{N}{2N}$$

$$P_2 = 2P$$

155. **Ans (4)**

Ideal gas follows Ideal gas equation

156. **Ans (2)**

$$\text{Given : } y_1 = 4 \sin 404 \pi t, y_2 = 3 \sin 400 \pi t$$

$$\therefore \omega_1 = 404\pi, \omega_2 = 400\pi, A_1 = 4, A_2 = 3$$

$$\omega_1 = 2\pi\nu_1$$

$$\text{or } 404\pi = 2\pi\nu_1$$

$$\text{or } \nu_1 = 202\text{Hz}$$

$$\omega_2 = 2\pi\nu_2$$

$$\text{or } 400\pi = 2\pi\nu_2$$

$$\text{or } \nu_2 = 200 \text{ Hz}$$

$$\text{But frequency} = \nu_1 - \nu_2 = 202 - 200 = 2\text{Hz}$$

$$\therefore \frac{I_{\max.}}{I_{\min.}} = \left(\frac{A_1 + A_2}{A_1 - A_2} \right)^2 = \left(\frac{4 + 3}{4 - 3} \right)^2$$

$$= \left(\frac{7}{1} \right)^2 = \frac{49}{1}$$

157. **Ans (3)**

$$\frac{1}{2}kx^2 = \frac{1}{2}k(A^2 - x^2) \Rightarrow x = \pm \frac{A}{\sqrt{2}}$$

158. **Ans (4)**

In one complete oscillation change in velocity is zero.

159. **Ans (1)**

At resonance

$$X_L = X_C \text{ or } IX_C = IX_L$$

$$V = V_R \therefore I = \frac{V}{R} = \frac{100}{1000} = 0.1\text{A}$$

$$\text{Now, } V_L = V_C = IX_C = \frac{I}{\omega C}$$

$$= \frac{0.1}{200 \times 2 \times 10^{-6}} = 250 \text{ V}$$

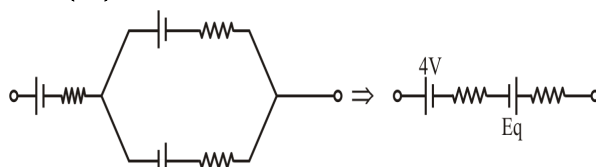
160. **Ans (1)**

$$\therefore I = neA Vd$$

$$Vd = \frac{I}{neA} = \frac{1.6}{(10^{29}) (1.6 \times 10^{-19}) \times 1 \times 10^{-6}}$$

$$Vd = 10^{-4} \text{ m/sec.}$$

161. **Ans (2)**



$$Eq = \frac{6 \times 1 - 2 \times 1}{1 + 1} = 2 \text{ volt}$$

$$E_{\text{Total}} = 4 - 2 = 2 \text{ volt}$$

162. **Ans (3)**

$$q = CV$$

after dielectric slab

$$C' = KC$$

q remain unchanged

$$\text{So } V \downarrow$$

$$V = E.d$$

$$\text{as } V \downarrow, E \downarrow$$

163. **Ans (2)**

$$E_x = \frac{-dV}{dx} = -160xi$$

$$= -160 \times -2 = 320 \text{ v/m}$$

$$E_y = \frac{-dV}{dx} = -120y\hat{j}$$

$$= -120 \times 4 = -480 \text{ v/m}$$

164. Ans (4)

$$B_{\text{sol}} = 5 \left(\frac{\mu_0 N i}{\ell} \right)$$

$$= 5 \left[\frac{4\pi \times 10^{-7} \times 200 \times 3.14}{50 \times 10^{-2}} \right]$$

$$= 8 \times 10^{-3} \text{ T}$$

$$= 8 \text{ mT}$$

165. Ans (3)

$$B = \frac{\mu_0 I}{2r}$$

$$I = \frac{q}{T} = e \times \frac{n}{2}$$

$$\Rightarrow B = \frac{\mu_0 n e}{4r}$$

167. Ans (3)

$$\text{As } X = a^2 b^3 c^{5/2} d^{-2}$$

The percentage error in x is

$$\frac{\Delta X}{X} \times 100 = \left[2 \left(\frac{\Delta a}{a} \right) + 3 \left(\frac{\Delta b}{b} \right) + \frac{5}{2} \left(\frac{\Delta c}{c} \right) + 2 \left(\frac{\Delta d}{d} \right) \right] \times 100$$

$$= 2 \times 1\% + 3 \times 2\% + \frac{5}{2} \times 2\% + 2 \times 4\% = 21\%$$

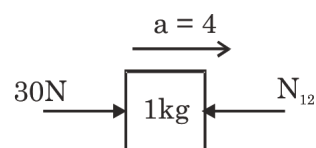
168. Ans (4)

$$d \propto u^2$$

$$\Rightarrow \frac{d_2}{d_1} = \left(\frac{u_2}{u_1} \right)^2 \Rightarrow \frac{d_2}{2} = \left(\frac{80}{40} \right)^2 \Rightarrow d_2 = 8 \text{ m}$$

170. Ans (2)

$$a = \frac{30 - 6}{6} = 4 \text{ m/s}^2$$



$$30 - N = 1(4)$$

$$N_{12} = 26 \text{ N}$$

171. Ans (4)

$$P_{\text{avg}} = \frac{mgh}{t} = \frac{300 \times 9.8 \times 2}{3}$$

$$= 1960 \text{ watt}$$

172. Ans (3)

Conceptual.

173. Ans (4)

$$N = \frac{PV}{KT} = \frac{10^6 \times 1000}{1.38 \times 10^{-16} \times 300} = 2.4 \times 10^{22}$$

174. Ans (3)

$$a_{\text{rolling}} = \frac{g \sin \theta}{\left(1 + \frac{K^2}{R^2}\right)} = \frac{g \sin \theta}{\left(1 + \frac{2}{5}\right)} = \frac{5g \sin \theta}{7} \dots (i)$$

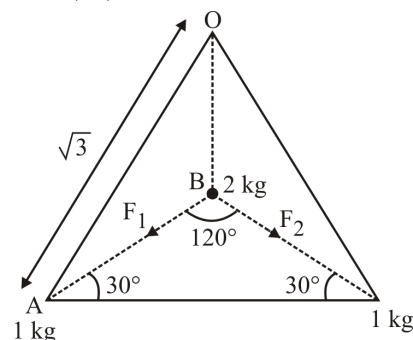
$$a_{\text{sliding}} = g \sin \theta \dots (ii)$$

from (i) & (ii)

$$a = \frac{5}{7} a_{\text{sliding}}$$

$$a_{\text{sliding}} = \frac{7a}{5}$$

175. Ans (2)



$$AB = OB = \frac{\text{side}}{\sqrt{3}} = \frac{\sqrt{3}}{\sqrt{3}} = 1 \text{ m}$$

$$F_1 = F_2 = \frac{G \times 1 \times 2}{(1)^2}$$

$$F_{\text{resultant}} = \sqrt{F_1^2 + F_2^2 + 2F_1 F_2 \cos(120^\circ)}$$

$$= \sqrt{F_1^2 + F_1^2 - 2F_1^2 \times \frac{1}{2}}$$

$$= F_1 = 2G$$

176. Ans (3)

$$F_{\text{rer}} = \frac{2T}{d} A$$

$$= \frac{2 \times (75 \text{ dyne/cm})}{(12 \times 10^{-3} \text{ cm})} (8 \text{ cm}^2)$$

$$= 10^5 \text{ dyne}$$

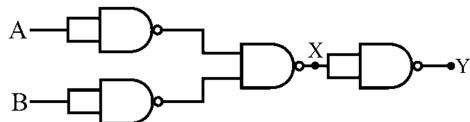
177. Ans (2)

$$s.g = \frac{W_a - W_L}{W_{\text{ai}} = W_w}$$

$$= \frac{15 - 13}{15 - 12} = \frac{2}{3}$$

178. Ans (4)

A	B	A + B	$Y = \overline{A + B}$
1	0	1	0
1	1	1	0
0	1	1	0
1	0	1	0
0	0	0	1



$$X = \overline{\overline{A + B}} = A + B$$

$Y = A + B$ NOR gate

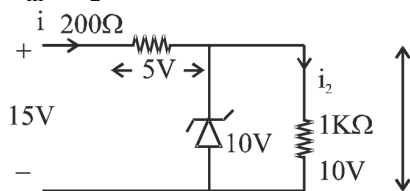
So 0 to 4 $A + B = 1$, $y = 0$

between 4 to 5 $A = 0$, $B = 0$,

$X = 0$, $Y = 1$

179. Ans (3)

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



$$i = 5/200 = 0.025A$$

$$i_L = 10/10^3 = 10mA$$

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

181. Ans (2)

$$\delta = i + e - A \Rightarrow A = 45^\circ (i = 15^\circ; e = 60^\circ)$$

182. Ans (4)

As $\mu_2 > \mu_1$, the upper half of the lens will become diverging.

As $\mu_1 > \mu_3$, the lower half of the lens will become converging.

183. Ans (4)

$$\begin{aligned} \Delta E &= E_0 \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right) \text{ first excited state} \\ &= 13.6 \left(\frac{1}{2^2} - \frac{1}{4^2} \right) \text{ \& third excited state} \\ &= 13.6 \left(\frac{4-1}{16} \right) = 2.55 \text{ eV} \end{aligned}$$

184. Ans (3)

According to the results of lenard experiment

185. Ans (2)

$$I = 10^{-10} \text{ W/m}^2$$

$$\lambda = 5.6 \times 10^{-7} \text{ m}$$

$$A = 10^{-6} \text{ m}^2$$

$$\text{no. of photons per second} = n = 5 \times 10^{24} p \lambda$$

$$n = 5 \times 10^{24} IA \lambda$$

$$= 5 \times 10^{24} \times 10^{-10} \times 10^{-6} \times 5.6 \times 10^{-7}$$

$$= 280$$

SECTION-B

186. Ans (1)

From principle of moments :

Let extra force applied be F at a distance x from pivot in upward direction (assuming $x < 50$)

$$F_x + (10)(F) + (10)(F) = (30)(F) + (30)(F)$$

$$F_x = 40 F \Rightarrow x = 40 \text{ cm}$$

\Rightarrow Possible solution $F' = F$ at 40 cm from pivot, or 10 cm from left end in upward direction.

187. Ans (1)

$$V = \sqrt{\frac{T}{\mu}}$$

$$T = v^2 u = \left(\frac{w}{k} \right)^2 \mu$$

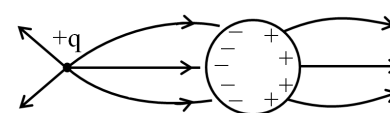
$$T = \left(\frac{30}{1} \right)^2 \times 1.3 \times 10^{-4}$$

$$= 0.12 \text{ N}$$

188. Ans (1)

$$\begin{aligned} \phi &= \vec{E} \cdot \vec{A} = \left(\frac{E_0}{a} \times a \right) \cdot a^2 \cos 0 \\ &= E_0 a^2 \end{aligned}$$

189. Ans (1)



190. Ans (1)

$$\text{induced charge} = \frac{2NAB}{R}$$

$$= \frac{2 \times 100 \times \pi \times (1 \times 10^{-2})^2 \times \mu_0 n I}{20}$$

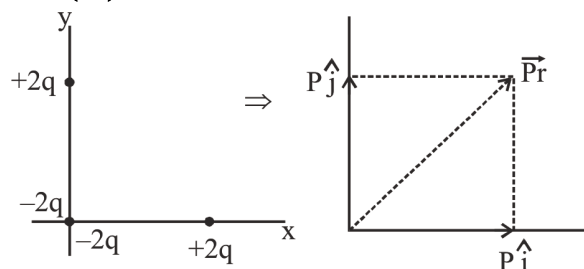
$$= 2 \times 10^{-4} \text{ C}$$

191. Ans (2)

$$e = \vec{\ell} \cdot (\vec{B} \times \vec{v}) \text{ where } \vec{v} = \hat{i} \text{ m/sec}$$

$$= 5\hat{j} \cdot \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ 3 & 4 & 5 \\ 1 & 0 & 0 \end{vmatrix} = 5\hat{j} \cdot (5\hat{j} - 4\hat{k}) = 25 \text{ volt}$$

193. Ans (1)



$$P = 2qa$$

$$\vec{P}_r = P\hat{i} + P\hat{j}$$

$$Pr = P\sqrt{2} = qa\sqrt{2}$$

$$= 4 \times 10^{-8} \text{ C.m.}$$

$$\text{and along } \hat{i} + \hat{j} \text{ or } \frac{a}{2}\hat{i} + \frac{a}{2}\hat{j}$$

194. Ans (4)

$$v \frac{dm}{dt} = m(g + a)$$

$$500 \left(\frac{dm}{dt} \right) = 1000 \times 15$$

$$\left(\frac{dm}{dt} \right) = 30 \text{ kg/s}$$

195. Ans (4)

$$\text{Tangential acceleration } a_t = 2 \text{ m/s}^2$$

Centripetal acceleration

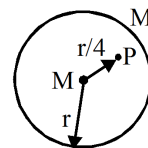
$$a_c = \frac{v^2}{R} = \frac{(20)^2}{200} = 2 \text{ m/s}^2$$

$$\begin{aligned} \text{So, net acceleration } a &= \sqrt{a_c^2 + a_t^2} \\ a &= \sqrt{2^2 + 2^2} \\ a &= 2\sqrt{2} = 2 \times 1.4 \\ a &= 2.8 \text{ m/s}^2 \end{aligned}$$

196. Ans (4)

Theory

197. Ans (4)



$$V_p = -\frac{GM}{r/4} - \frac{GM}{r} = -\frac{5GM}{r}$$

198. Ans (1)

$$\therefore \sin \theta = \frac{n\lambda}{a}$$

$$a = \frac{n\lambda}{\sin \theta}$$

199. Ans (3)

$$\Delta m = 7.016004 + 1.007825 - 2 \times 4.002603$$

$$= 8.023829 - 8.005206$$

$$= 0.018623$$

$$E = \Delta m \times 931.5 \text{ MeV}$$

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$$E = 17.34 \text{ MeV}$$

$$E \simeq 17 \text{ MeV}$$

200. Ans (2)

$$\lambda \propto \frac{1}{\sqrt{v}}$$

$$\frac{10^{-10}}{\lambda} = \sqrt{\frac{600}{150}}$$

$$\Rightarrow \lambda = \frac{1}{2} \times 10^{-10} \text{ m}$$

$$\lambda = 0.5 \text{ \AA}$$