SRI CHAITANYA EDUCATIONAL INSTITUTIONS, INDIA.

A.P, TELANGANA, KARNATAKA, TAMILNADU, MAHARASHTRA, DELHI, RANCHI, CHANDIGARH

SEC : INCOMING JR AIIMS S60, NEET MPL & MEDICON   DATE: 04-07-2021

NEET WEEKEND TEST - 7 KEY

- -

BOTANY

1) 2	2) 4	3) 4	4) 4	5) 2	6) 2	7) 1	8) 2	9) 4	10) 2
11) 3	12) 4	13) 3	14) 1	15) 2	16) 2	17) 2	18) 3	19) 1	20) 4
21) 4	22) 1	23) 1	24) 1	25) 3	26) 3	27) 3	28) 3	29) 2	30) 3
31) 1	32) 3	33) 4	34) 4	35) 4	36) 4	37) 1	38) 2	39) 1	40) 2
41) 3	42) 2	43) 4	44) 3	45) 1					

ZOOLOGY

46) 4	47) 4	48) 2	49) 1	50) 2	51) 3	52) 1	53) 1	54) 1	55) 2
56) 1	57) 3	58) 1	59) 3	60) 1	61) 2	62) 3	63) 1	64) 3	65) 1
66) 4	67) 4	68) 3	69) 3	70) 4	71) 2	72) 1	73) 1	74) 1	75) 4
76) 4	77) 4	78) 2	79) 2	80) 4	81) 4	82) 2	83) 3	84) 4	85) 3
86) 3	87) 2	88) 3	89) 1	90) 1					

PHYSICS

91) 1	92) 4	93) 1	94) 1	95) 1	96) 1	97) 3	98) 4	99) 4	100) 4
101) 2	102) 3	103) 2	104) 2	105) 2	106) 4	107) 1	108) 3	109) 1	110) 3
111) 4	112) 4	113) 1	114) 1	115) 4	116) 3	117) 1	118) 2	119) 2	120) 3
121) 1	122) 2	123) 2	124) 2	125) 4	126) 2	127) 3	128) 1	129) 1	130) 2
131) 4	132) 2	133) 3	134) 4	135) 2					

CHEMISTRY

136) 1	137) 3	138) 2	139) 1	140) 2	141) 4	142) 4	143) 3	144) 2	145) 3
146) 2	147) 1	148) 2	149) 3	150) 4	151) 2	152) 3	153) 1	154) 2	155) 2
156) 3	157) 1	158) 4	159) 4	160) 2	161) 4	162) 2	163) 2	164) 4	165) 1
166) 2	167) 3	168) 2	169) 4	170) 3	171) 3	172) 3	173) 2	174) 3	175) 2
176) 3	177) 2	178) 3	179) 4	180) 3					

SOLUTIONS

1. NCERT XI – Pg.No. 154
2. NCERT XI – Pg.No. 157, 158
3. Concept
4. Concept
5. NCERT XI – Pg.No. 154
6. NCERT XI – Pg.No. 159
7. NCERT PAGE No:158
8. NCERT XI – Pg.No. 159
9. NCERT XI – Pg.No. 156
10. NCERT XI – Pg.No. 154
11. NCERT XI – Pg.No. 158
12. NCERT XI – Pg.No. 159
13. NCERT XI – Pg.No. 157
14. Application type
15. NCERT XI – Pg.No. 157
16. NCERT XI – Pg.No. 158
17. NCERT XI – Pg.No. 156
18. NCERT XI – Pg.No. 159
19. NCERT XI – Pg.No. 155
20. NCERT XI – Pg.No. 159
21. NCERT XI – Pg.No. 158
22. NCERT page no:154
23. NCERT page no:157
24. NCERT XI – Pg.No. 155
25. NCERT PAGE - 158
26. NCERT XI – Pg.No. 158
27. NCERT page no:159
28. NCERT page 155
29. NCERT XI – Pg.No. 158
30. NCERT XI – Pg.No. 156, 157
31. Application type
32. NCERT XI – Pg.No. 157
33. NCERT XI – Pg.No. 159
34. NCERT XI – Pg.No. 154
35. NCERT XI – Pg.No. 159
36. NCERT XI – Pg.No. 158
37. NCERT XI – Pg.No. 159
38. Previous NEET question
39. NCERT XI – Pg.No. 157
40. NCERT XI – Pg.No. 158
41. NCERT XI – Pg.No. 159
42. NCERT XI – Pg.No. 158
43. NCERT XI – Pg.No. 159
44. NCERT XI – Pg.No. 154
45. Ligase activity establishes bonds to synthesize new molecules. ATP is hydrolysed to provide bond energy
46. Cartilage is present at tip of nose, between adjacent bones and vertebral column
47. On above diagram
    a – Dense Regular (Tendon)
    b – Dense Irregular
48. Bone has hard and non-pliable ground substances rich in calcium salt and collagen fibres.
49. Given diagram adipose tissue cells of this tissue are specialised to store fats. Fat act as insulation.
50. Plasma contributes 55% of blood.
51. Ligaments joins bone to bone.
52. Dense irregular connective tissue present in skin.
53. Blood colloidal osmotic pressure maintained by Albumin.
54. Haversian canal is found in bones of mammals.
55. Hyaline cartilage is found in tracheal rings and bronchi etc.
56. Haversian system is present in bones
57. Abnormal rise of RBC count is called – polycythaemia
58. Major constituent of bone is calcium phosphate.
59. Haversian system consists of Haversian canal, lamella and ostcocyte.

60. Strongest cartilage is white fibrous cartilage
61. Blood does not produce structural proteins like collagen, elastin, etc
62. Dense regular connective tissue examples are Tendon and ligaments.
63. Fibroblast secretes collagen fibres.
64. RBCs in humans are Biconcave and anucleated.
65. Most abundant leucocytes – Neutrophils
Least number of leucocytes – Basophiles
66. Blood contains 1) Plasma 2) Blood cells
67. Bone and cartilage are called skeletal tissue.
68. Hardest tissue of the body is bone
69. Mast cells produce histamine.
70. Lympocytes responsible for immune response of the body.
71. Serum contains plasma without clotting factors such as fibrinogen
72. Cartilage is also called gristle
73. Acidophil increase during allergy
74. Glass like cartilage is Hyaline cartilage
75. Haversian canals are interconnected by transverse canals known as volksman canals.
76. Epiglottis is composed of elastic cartilage.
77. Above three statements are correct.
78. Blubber of whale is an example of Adipose tissue
79. Basophils are involved in inflammatory reactions.
80. Thrombocytes are formed from megakaryocytes
81. Leucocytes are nucleated and generally short lived.
82. Neutrophils and monocytes are active phagocytic white blood cells.
83. Intercellular material of cartilage is solid, pliable and resists compression
84. Cartilage, blood and bone are set of specialised connective tissues
85. Plasma – 55% ; Formed elements – 45%

86. Life span of RBC – 120 days
87. Lympocytes contains large size spherical nucleus and peripheral cytoplasm
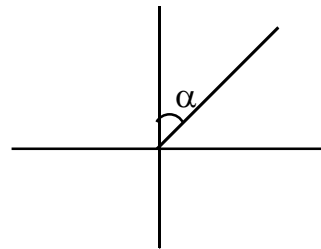88. Adipose tissue – loose connective tissue.

89. Proteins contribute in blood plasma 6 – 8 percent
90. In healthy person leucocytes count per cubic millimetre of blood (6000 to 8000)
91.
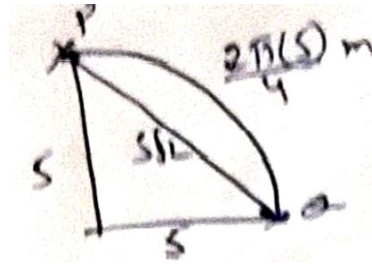
Displacement - $5\sqrt{2}$m

Distance - $\dfrac{2\pi(5)}{4} = 2.5\pi$m

92. $200\hat{i} + 300\hat{j}$

$\text{Tan}\,\alpha = \dfrac{200}{300}$

$\alpha = \text{Tan}^{-1}\left(\dfrac{2}{3}\right)$ E of N

$\sqrt{(200)^2 + (300)^2} = 360.5$m

93. Conceptual
94. $\vec{A} + \vec{B} = 2\hat{i} - 8\hat{j}$

$\text{Tan}\,\alpha = \dfrac{8}{2} = 4$ clockwise with x-axis.

95. $2(\vec{A}) - 3\vec{B} + \vec{C} = 0$

$2\left(-2\hat{i} + \hat{j} - 3\hat{k}\right) - 3\left(3\hat{i} + \hat{j} - 3\hat{k}\right) + \vec{c} = 0$

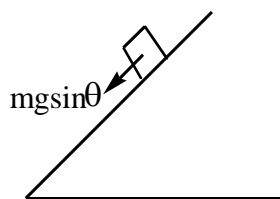$\vec{c} = 13\hat{i} + \hat{j} - 3\hat{k}$

96. $20 = 40\cos\theta$

$\text{Cos}\,\theta = \dfrac{1}{2}$

$\theta = \dfrac{\pi}{3}$

$$40 \text{ gm } \frac{\pi}{3} = \frac{40\sqrt{3}}{2} = 20\sqrt{3}\text{N}$$
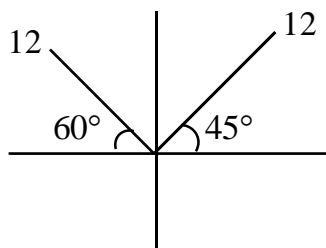
97.

$= mg \sin\theta$

$= (500)(10)\left(\dfrac{\sqrt{3}}{2}\right)$

$= 2500 \sqrt{3}\text{N}$

98. Conceptual

99. Conceptual

100.

$(12\cos 45 - 12\cos 60°)\hat{i} + (12\sin 45 + 12\sin 60°)\hat{j}$

$\left(12\sqrt{2} - 12\right)\hat{i} + \left(12\sqrt{2} + 12\sqrt{3}\right)\hat{j}$

101. $\text{Tan}\,\alpha = \dfrac{1}{\sqrt{3}}$

$\alpha = \dfrac{\pi}{6}$

102. $24\hat{i} + 10\hat{j} + 4\hat{k}$

$\sqrt{(24)^2 + (10)^2 + (4)^2} = 26.3\text{m}$

103. Conceptual

104. Conceptual

105. $\text{Cos}\,\alpha = \dfrac{4}{5\sqrt{2}}$

$\text{Cos}\,\beta = \dfrac{5}{5\sqrt{2}}$

$\text{Cos}\,\gamma = \dfrac{3}{5\sqrt{2}}$

$\therefore \vec{p} = 4\hat{i} + 5\hat{j} + 3\hat{k}$

106. XY plane $- \sqrt{(5)^2 + (2)^2}$

$= \sqrt{29}$

YZ plane $= \sqrt{(2)^2 + (3)^2}$

$= \sqrt{13}$

107. $\vec{P} + \vec{Q} = 7\hat{i} + \hat{j} + 2\hat{k}$

$\dfrac{\vec{P} + \vec{Q}}{|\vec{P} + \vec{Q}|} = \dfrac{7\hat{i} - \hat{j} + 2\hat{k}}{\sqrt{54}}$

108. $|\vec{A}| = \sqrt{25} = 5$

The direction of vector with x-axis is

$\alpha = \text{Tan}^{-1}\left(\dfrac{3}{4}\right) = 37°$

Total angle is 90° in anticlockwise direction means new vector is along y-axis 5j.

109. It is not necessary that $\vec{a} = \vec{b} = \vec{c} = \vec{d} = 0$

110. $P^2 = A^2 + B^2 + 2AB\text{Cos}\theta$

$Q^2 = A^2 + B^2 - 2AB\text{Cos}\theta$

$P^2 + Q^2 = 2\left[A^2 + B^2\right]$

111. Conceptual

112. Conceptual

113. Conceptual

114. Magnitude of a vector of the form $\vec{A} = a\hat{i} + b\hat{j} + c\hat{k}$ is given by

$|\vec{A}| = \sqrt{a^2 + b^2 + c^2}$

$\therefore$ Magnitude of $\dfrac{\hat{i}}{\sqrt{2}} + \dfrac{\hat{j}}{\sqrt{2}}$ is

$\sqrt{\left(\dfrac{1}{\sqrt{2}}\right)^2 + \left(\dfrac{1}{\sqrt{2}}\right)^2} = 1$

115. Vector joining A : (4, -4, 0) and B : (-2, -2, 0) is given by

$\overline{AB} = (-2-4)\hat{i} + (-2-(4))\hat{j} + (0-0)\hat{k} = -6\hat{i} + 2\hat{j}$

$|\overline{AB}| = \sqrt{(-6)^2 + (2)^2} = \sqrt{40} = 2\sqrt{10}$

116. Unit vector along a vector $\vec{A}$ is given by

$\hat{A} = \dfrac{\vec{A}}{|\vec{A}|}$

$\therefore$ Unit vector along $\hat{i} + \hat{j}$ is

$\dfrac{\hat{i} + \hat{j}}{\sqrt{1^2 + 1^2}} = \dfrac{\hat{i} + \hat{j}}{\sqrt{2}}$

117. Conceptual

118. Conceptual

119. Angle made by vector $\vec{A} - = a\hat{i} + b\hat{j}$ with x-axis is $\theta = \tan^{-1}\left(\dfrac{b}{a}\right)$

$\therefore \theta = \tan^{-1}\left(\dfrac{1}{1}\right) = 45°$

120. Applying triangle's law of vector addition, we get $\vec{B} - = \vec{C} + \vec{A}$ (From tail of 1st vector to head of 2nd vector)

121. If $\theta = 120°$ $\vec{P} = \vec{Q} = \vec{R}$

122. Conceptual

123. Conceptual

124. $\sqrt{40P} = \sqrt{16P^2 + 8P^2 + 2(4P)\left(\sqrt{8}P\cos\theta\right)}$

$\cos\theta = \dfrac{1}{\sqrt{2}}$

$\theta = 45°$

125. Sum of two least forces should be greater than or equal to large force.

126. $P + Q = 8$
$P - Q = 4$
$P = 6$
$Q = 2$
$P^1 = 8N$ $Q^1 = 4N$ $\theta = 60°$
$R^1 = \sqrt{(8)^2 + (4)^2 + 2(8)(4)(\cos 60)} = 33.2N$

127. The sum of equal vectors of magnitude $R = 2P\cos\theta/2$

In unit vectors $\Rightarrow 1 = 2 \times 1 \times \cos\theta/2$

$\cos\dfrac{\theta}{2} = \dfrac{1}{2} = \cos 60°$; $\dfrac{\theta}{2} = 60° \Rightarrow \theta = 120°$ T

he magnitude of difference of equal vectors

$S = 2P\sin\dfrac{\theta}{2}$

In unit vectors

$\Rightarrow S = 2 \times 1 \times \sin\dfrac{120°}{2} = 2 \times \dfrac{\sqrt{3}}{2} = \sqrt{3}$ units

128. After 9th turn the position is C, hence displacement is oc = 2(OA) = 100m.

129. Conceptual

130. Conceptual

131. $\left[\sqrt{4^2 + 3^2 + 24\cos\theta}\right]^2 = 12 + \left[\sqrt{4^2 + 3^2}\right]^2$

132. Let the required vector be $\vec{A}$.

$\vec{A} + \left(\hat{i} - 2\hat{j} + 2\hat{k}\right) + \left(2\hat{i} + \hat{j} - \hat{k}\right) = i$

$\Rightarrow \vec{A} = -2\hat{i} + \hat{j} - \hat{k}$

133. If a vector $\vec{A} = a\hat{i} + b\hat{j} + c\hat{k}$ makes angles $\alpha, \beta \& \gamma$ with x, y and z axes respectively then

$\cos\alpha = \dfrac{a}{\sqrt{a^2 + b^2 + c^2}}, \cos\beta = \dfrac{b}{\sqrt{a^2 + b^2 + c^2}}$

and $\cos\gamma = \dfrac{c}{\sqrt{a^2 + b^2 + c^2}}$

$\therefore \cos\alpha = \dfrac{1}{\sqrt{1^2 + 1^2 + \left(\sqrt{2}\right)^2}} = \dfrac{1}{2} \Rightarrow$

$\alpha = 60°$

$\cos\beta = \dfrac{1}{\sqrt{1^2 + 1^2 + \left(\sqrt{2}\right)^2}} = \dfrac{1}{2} \Rightarrow$

$\beta = 60°$

134. Conceptual

135. Conceptual

136. Atomic weight of 'Be' was corrected based on valency.

137. Eka silicon now a days called as Germanium.

138. Atomic weight of Ar is 40 and potassium is 39.

139. Na (atomic weight = 23) $\Rightarrow \dfrac{7 + 39}{2} = 23$

140. Conceptual

141. Elements of VIII group are transition triads
142. Conceptual
143. When $l = 1$, m cannot be -2 since m ranges from $-l$ to $+l$ through 0
144. $0 - 8 - 1s^2 2s^2 2p^4$

$n = 2, \ell = 1, m = -1, 0, +1, s = \pm\dfrac{1}{2}$
145. Each orbital can accommodate two electrons with opposite spin
146. Physical and chemical properties of elements are periodic functions of electronic configuration.
147. Conceptual
148. Fe^{+3} has $3d^5$ configuration

$\mu = \sqrt{n(n+2)}$

$= \sqrt{5(5+2)} = \sqrt{35}$ B.M
149. $Cr = [Ar] 3d^5 4s^1$
150. Total number of gaseous elements in periodic table are 11 (H_2, He, Ne, Ar, Kr, Xe, Rn, N_2, O_2, F_2, Cl_2)
151. f-orbital has $l = 3$ then m = -3, -2, -1, 0, 1, 2, 3.
152. For P_z orbital m is 0

For P_x and P_y orbital m must be ± 1
153. 'm' value for s-orbital is zero only.
154. $l = 1$ for p-orbital and its shape is dumb-bell.
155. An orbital can accommodate maximum 2-electrons only.
156. Number of orbital for quantum level is = n^2
157. $l = 2$ for all d-electrons
158. 'l' value should not be equal (or) greater than 'n' value
159. Four quantum numbers are required to complete description of an electron.
160. Azimuthal quantum number indicates shape of orbital.
161. 's' value may be $+\dfrac{1}{2}$ (or) $-\dfrac{1}{2}$
162. Cu has [Ar] $3d^{10} 4s^1$
163. Both Fe^{+3} and Mn^{+2} have 23 electrons.
164. 4f orbital has n = 4, $l = 3$

Total n + l value = 4 + 3 = 7
165. Oxygen electronic configuration is

1s 2s 2p
[↑↓][↑↓][↑↓|↑|↑] so no.of unpaired electrons are 2.
166. Total electrons are 15. So it is phosphorous (p)
167. Correct configuration is 2, 8, 13, 1 b has chromium has [Ar] $3d^5 4s^1$
168. f-orbital starts with 4th orbit.
169. Fe^{+3} ion has highest number of electrons

   4s   3d
Fe^{+3} [↑↓] [↑|↑|↑|↑|↑]
170. Ti^+ ion $(21e^-)$ is not a isoelectronic with O^{-2} ion $(10e^-)$
171. As n + l value increases energy also increases. If n + l value is same then lower 'n' value orbital having lower energy.
172. Fe^{+2} ion

   4s^2 3d^6
[↑↓] [↑↓|↑|↑|↑|↑]

No.of unpaired elect = 4
173. K = 2 L = 8 M = 13, N = 1

Total electrons = 24, Element is chromium.
174. Pauli's exclusion principle.
175. Mg has 6 s-electrons and 6-p-electrons
176. Cesium ion has

10 s-electrons (1s, 2s, 3s, 4s, 5s)

24 p-electrons (2p, 3p, 4p, 5p)

20 d-electrons (3d, 4d)
177. Nitrogen has

1s 2s 2p
[↑↓][↑↓][↑|↑|↑]
178. No. of electrons in f-orbital = 14
179. Conceptual
180. Magnetic quantum number = n^2