SRI CHAITANYA EDUCATIONAL INSTITUTIONS, INDIA

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SEC: INCOMING JUNIORS **DATE: 17-07-2021**

NEET PART TEST- I KEY

BOTANY

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

ZOOLOGY

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

PHYSICS

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

CHEMISTRY

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

SOLUTIONS:

1. In bacteria, extra chromosomal DNA is plasmid.
2. Nuclear membrane is absent in prokaryotic cell
3. Cell wall protect the bacterium from bursting (or) collapsing
4. Mesosomes are inward extensions of cell membrane in the form of vesicles, tubules and lamellae. Mososomes help in respiration, secretion, increase the enzymatic content, cell wall formation, DNA replication and its distribution to daughter cells.
5. Omnicellula-e-cellula given by Virchow
6. Longest portion of flagellum is filament in bacteria
7. Several ribosomes may attach to a single mRNA to from a chain is called polysome / polyribosomes
8. Mycoplasma size = 0.3 to 0.5µm, R.B.C. size = 7 µm, Bacteria size= 3 to 5 µm
   Typical eukaryotic cell size = 10 to 20 µm
9. Centrioles and centrosomes occur in animals
10. Interconnected network of vesicles, tubules and flattened sac is endoplasomic Reticulum
11. In cell membrane, proteins are classified as integral and peripheral based on ease of extraction.
12. Middle lamellum acts as cement like substance
13. Molecules which are transported across the membrane against the gradient is active transport - Na+ /K+ pump
14. Golgi complex, endoplasmic reticulum, Lysosomes and vacuoles are endomembrane system.
15. Peri nuclear space is 10 to 50 nm
16. Conceptual
17. Acidic amino acid → Glutamic Acid
    Basic amino acid → Lysine
    Neutral amino acid → Valine
    Aromatic amino acid → Phenyl alanine
18. Conceptual
19. Molecules having charged group of opposite polarity [positive and negative charges] →
    Zwitter ions
20. Guanine is not pramidine
21. Textual matter
22. Innulin is a polymer of fructose
23. Chitin is a homopolymer
24. In glycogen, right end is reducing end and left end is called non reducing end
25. Peptide bond is formed between cooH group of one amino acid and NH_2 group of next amino acid
26. In B DNA, the rise per base pair is 0.34nm
27. Temperature, P^H substrate concentration and binding of chemicals regulate the activity of enzymes.
28. Enzymes remove groups and formation of double bonds →Lyases
29. NAD is Nicotinamide adenine dinucleotide
30. Ribose is monosaccharide
31. Inter phase of cell cycle takes more than 95% duration of time.
32. G_1 phase is interval between mitosis and DNA replication
33. Centriole replication in interphase
34. Heart cells donot exhibit division
35. Textual matter

36. Microtubules help in initiation of mitotic spindle
37. Centrioles begins to move towards opposite poles in prophase in cell cycle.
38. Key features of metaphase
    1. Spindle fibres attached to kinetochores of centromere.
    2. Chromosomes are moved to spindle equator and get aligned along metaphase plate.
39. Anaphase is characterized by
    1. Centromere splits and chromatids separate
    2. Chromatids move to opposite poles.
40. Chromosomes undergo decondensation in Telophase
41. Telophase is characterized by
    1. Chromosomal clusters at opposite poles and their identity is lost
    2. Nuclear envelop assembles around chromosomal clusters
    3. Nucleolus, golgicomplex and ER reform.
42. In plants, cytokinesis occurs by cell plate
43. Chromosomes are maximum condensed in metaphase.
44. Different shapes of chromosomes like V, L, J, i can be observed in Anaphase.
45. Centromere split in Anaphase.
46. Platy helminthes NCERT pg-47
47. Conceptual NCERT pg-46
48. Conceptual Akash material
49. Platyhelminthes NCERT pg-49 (figure 4.4)
50. Conceptual -NCERT pg-49
51. Platyhelminthes - NCERT pg-51
52. Both 1 & 2 - NCERT pg-48
53. Pseudocoelom NCERT pg-48
54. A-asexually, b- sexually NCERT pg-50
55. Pleurobrachia NCERT pg-51
56. Limulus- NCERT pg-53
57. Chondrichthyes- NCERT pg-57
58. I-e, II-d, III-a, IV-c, V-f, VI-b NCERT pg-50
59. Ostia – spongocoel – Osculum – outside – NCERT pg -49
60. 3,3,2 respectively NCERT pg-49, 50 & 51 conceptual
61. C,D-Conceptual - NCERT pg-50
62. Platyhelminthes - NCERT pg-51
63. Fertilization is external - NCERT pg-52
64. Vectors – anopheles, culex and Lac insect is economically important insect NCERT pg-53
65. Pinctada- NCERT pg-54
66. Malphigian ,Coxal glands, Green glands (All) Akash material
67. Absent –NCERT pg-54
68. Pelvic fins of male - NCERT pg-54
69. Crocodilus - NCERT pg-58
70. Testudo - NCERT pg-58(conceptual)
71. - I-r, II-t, III-q, IV-p, V-s NCERT pg-54 & 55
72. i and iii only - NCERT pg-60 - conceptual
73. Urochordata-- NCERT pg-55
74. cephalochordate - NCERT pg-55
75. I-s, II-p, III-q, IV-r - NCERT pg-57, 58, 59 & 60
76. Simple cuboidal epithelium - -NCERT pg-101
77. a-2, b-3, c-1- NCERT pg-102
78. Blood - NCERT pg-103
79. Areolar tissue- NCERT pg-103
80. Adipose tissue -- NCERT pg-103
81. Areolar tissue- NCERT pg-103
82. Neural tissue- NCERT pg-105
83. One-half the volume of neural tissue in our body . - NCERT pg-105

84. Statement I is incorrect, but statement II is correct- NCERT pg-104

85. Bone to bone- NCERT pg-103

86. Smooth muscle - NCERT pg-105

87. Peritoneum – Akash material

88. Plasmodesmata – NCERT pg-102 (conceptual)

89. Adipose- Akash material

90. Connective tissue - NCERT pg-102

91. Distance covered may or may not be zero when disp is Zero.

92. The numerical ratio of disp to dist is less than or equal or equal to one

93. Average velocity can be calculated by using

$$\frac{3}{vavg}=\frac{1}{v_1}+\frac{1}{v_2}+\frac{1}{v_3}$$

$$\frac{3}{vavg}=\frac{1}{20}+\frac{1}{30}+\frac{1}{40}=\frac{6+4+3}{120}=\frac{13}{120}$$

$$\text{Vavg}=\frac{3X120}{13}=28m/s$$

94. Ratio of disp in equal interval of time = 1:3

$$\frac{s_1}{s_2}=\frac{1}{3}\Rightarrow s_2=3s_1$$

95. Velocity at mid point , $v_0=\sqrt{\frac{u^2+v^2}{2}}$

96. $\left(\frac{4}{2}\right)^2-4^2=2x-ax\ 15-$ i

$0^2-\left(\frac{4}{2}\right)^2=2x-a\ x\ s$ - ii

i ÷ ii $\Rightarrow\frac{3}{1}=\frac{15}{6}\Rightarrow s=5cm$

97. Given $s=t^3-6t^2+3t+4$

$V=ds/dt=3t^2-6(2t)+3(1)+0$

$V=3t^2-12t+3$

$a=dv/dt=3(2t)-12(1)+0=6t-12$

$a=0\Rightarrow 6t-12=0\Rightarrow t=2sec$

At t =2sec, velocity, $v=3(2)^2-12(2)+3$

$=12-24+3$

$=-9$ m/s

98. We have $Sn=u+\left(n-\frac{1}{2}\right);Sn=\left(u-\frac{a}{2}\right)+an$

Sn = 2 + 0.4n comparing with above equation

U = 2.2 units, a = 0.4 units

99. Time at which the two alls meet

t = h/u = 100 / 50 = 2sec

100. In first 2sec

$S=ut+\frac{1}{2}at^2$

$200=u(2)+\frac{1}{2}a(2)^2\Rightarrow 200=2u+2a$

$u+a=100$ --- i

In first 6 sec, $S=ut+1/2\ at^2$

$420=u(6)^2+\frac{1}{2}a(6)^2$

$420=6u+18a$

$u+3a=70$ ----ii

ii – i $\Rightarrow$ $2a=-30\Rightarrow a=-15cm/s^2$

$\therefore u+a=100$

$u-15=100\Rightarrow u=115cm/s$

$\therefore$ Velocity at the end of 7^{th} sec

$V=u+at=115-15\times 7$

$=115-105=10cm/s$

101. Conceptual

102. For accelerated motion

$$v_0=o+\alpha t_1\Rightarrow v_0=\alpha t_1\Rightarrow t_1=\frac{v_0}{\alpha}$$

For decelerated motion,

$$O=v_0-\beta t_2\Rightarrow v_0=\beta t_2\Rightarrow t_2=\frac{v_0}{\beta}$$

Given total time $t=t_1+t_2$

$$t=\frac{v_0}{\alpha}<\frac{v_0}{\beta}=v_0=\left[\frac{1}{\alpha}+\frac{1}{\beta}\right]$$

$$t=v_0\left[\frac{\alpha+\beta}{\alpha\beta}\right]\Rightarrow v_0=\left[\frac{\alpha\beta}{\alpha+\beta}\right]t$$

103. For dropped body $S_1 = ½ st^2$

For body thrown down $S_2 = ut + ½ st^2$

Given $S_2 - S_1 = 18$

$ut = 18$

$2t = 18$

$t = 9sec$

104. Given $V = (180 - 16x)^{1/2}$

$V^2 = 180 - 16x$

$V^2 - 180 = -16x$ is of the form

$V^2 - u^2 = 2ax$

$\therefore 2a = -16 \Rightarrow a = -8\ m/s^2$

105. $S_{rel} = V_{rel}\ t$

$100 = 25t$, $t = 4sec$

106. Velocity of dropped body when acc. Due to gravity ceases to act = velocity with which it hits the ground

$$\sqrt{2g\frac{h}{2}} = V$$

$$V = \sqrt{9.8X39.2} = \sqrt{9.8X9.8X4} = 19.6m/s$$

107. $v^2 - u^2 = 2as$

$(3u)^2 - u^2 = 2gh$

$8u^2 = 2gh \Rightarrow h = \frac{8u^2}{2g} = \frac{4u^2}{g}$

108. $S_{rel} = V_{rel}t + \frac{1}{2}a_{rel}t^2$

$96 = 20t + \frac{1}{2}(-2)t^2$

$96 = 20t - t^2$

$t^2 - 20t + 96 = 0$

$t^2 - 12t - 8t + 96 = 0$

$t(t-12) - 8(t-12) = 0$

$t = 8$ or $12sec$

min. time is asked hence $t = 8sec$

109. $$\frac{AB}{BC} = \frac{\left(\frac{4}{3}\right)^2 - \left(\frac{4}{2}\right)^2}{\left(\frac{4}{4}\right)^2 - \left(\frac{4}{3}\right)^2} = \frac{\frac{1}{9} - \frac{1}{4}}{\frac{1}{16} - \frac{1}{9}} = \frac{\frac{-5}{36}}{\frac{-7}{144}}$$

$$\frac{5}{36} \text{ X } \frac{144}{7} = \frac{20}{7}$$

110. As ratio of disp travelled by a freely falling body is 1 : 3 : 5 : 7 : 9

In 5^{th} sec it travels 9h/25 hence

111. v – t graph of a vertically projected body is a straight line.

112. Slope of s – t graph is velocity

$$\therefore \frac{v_1}{v_2} = \frac{\tan 30^o}{\tan 45^o} = \frac{1/\sqrt{3}}{1} = 1/\sqrt{3}$$

113. Horizontal component of weight is zero

114. Conceptual

115. Minimum number of unequal forces in a plane to keep a particle in equilibrium is 3

116. Dist between A and B

Westwards = 1780 sin30 = 1780 x ½ =890km

117. Magnitude of displacement, $S = \sqrt{3^2 + 4^2 + 5^2}$

$= \sqrt{50}$

$= 5\sqrt{2}m$

118. Given $\overline{A} = 4\hat{i} + 3\hat{j} + 6\hat{k}$

$\overline{B} = -\hat{i} + 3\hat{j} - 8\hat{k}$

$\overline{A} + \overline{B} = 3\hat{i} + 6\hat{j} - 2\hat{k}$

Unit vector in the direction of $\overline{A} + \overline{B} = \frac{3\hat{i} + 6\hat{j} - 2\hat{k}}{\sqrt{3^2 + 6^2 + (-2)^2}} = \frac{3\hat{i} + 6\hat{j} - 2\hat{k}}{7}$

119. Conceptual

120. Given $\overline{R}$ is perpendicular to $\overline{P}$

Given $Q = 2P$

$\sin\alpha = \frac{P}{Q} = \frac{P}{2P} = \frac{1}{2}$

$\alpha = 30°$

Angle between $\overline{P}$ & $\overline{Q}$ is 90° + 30° =120°

121. 4s 'o' is in equilibrium,

$T_2 = T_1\cos 60°$

$10 = T_1\sin 60°$

$\frac{T_2}{10} = \cot 60^o = \frac{1}{\sqrt{3}}$

$T_2 = \frac{10}{\sqrt{3}}$ kgwt

$10 = T_1 \sin 60° = T_1 \frac{\sqrt{3}}{2} \Rightarrow T_1 = \frac{20}{\sqrt{3}} kgw$

122. As P is in equilibrium

$T_1 \cos 30° = T_2 \cos 60°$

$T_1 \frac{\sqrt{3}}{2} = \frac{T_2}{2}$

$\frac{T_1}{T_2} = \frac{1}{\sqrt{3}}$

123. Given $\overline{r} = 3t\hat{i} + 4t\hat{j} + 7\hat{k}$

At t = 0, $\overline{ri} = 7\hat{k}$

At t = 10^s $\overline{rf} = 300\hat{i} + 400\hat{j} + 7\hat{k}$

$\therefore disp\overline{S} = \overline{rf} - \overline{ri}$

$= 300\hat{i} + 400\hat{j}$

$S = \sqrt{(300)^2 + (400)^2} = 500M$

124. Velocity of B with respect to A

$= \sqrt{VB^2 + VA^2} = \sqrt{16^2 + 12^2} = 20kmph$

125. Component in xy plane $= \sqrt{2^2 + (-3)^2} = \sqrt{13}$

126. Let the two forces be F_1 and F_2

Given $13 = \sqrt{F_1^2 + F_2^2}$

$F_2 - F_1 = 7N$

Verifying from options $F_1 = 5N$, $F_2 = 12N$

127. $\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 1$

$\left(\frac{1}{\sqrt{2}}\right)^2 + \left(\frac{1}{2}\right)^2 + \cos^2\gamma = 1$

$\frac{1}{2} + \frac{1}{4} + \cos^2\gamma = 1$

$\cos^2\gamma = 1 - \frac{1}{2} - \frac{1}{4} = \frac{1}{4}$

$\cos\gamma = \frac{1}{2}$

$\gamma = 60^o$

128. $\overline{S_1} = 40\hat{i}$

$\overline{S_2} = 30\hat{j}$

$\overline{S_3} = 20\hat{i} + 20\hat{j}$

$\overline{S}_{net} = \overline{S_1} + \overline{S_2} + \overline{S_3} = 60\hat{i} + 50\hat{j}$

129. F = $ms\tan\theta = 10\sqrt{3}kgwt$

130. $\overline{u} = 5\hat{i}$

$\overline{v} = 5\hat{j}$

t =10

$\overline{a} = \frac{\overline{v} - \overline{u}}{t}$

$= \frac{5\hat{j} - 5\hat{i}}{10} = \left(-\frac{1}{2}\right)\hat{i} + \left(\frac{1}{2}\right)\hat{j}$

$\overline{a} = \frac{1}{\sqrt{2}} m/s^2 NW$

131. Let the vector be $\overline{c}$

Given $|\overline{C}| = |\overline{B}|$

and $\hat{C} = \hat{A}$ ($\therefore \overline{C}$ is parallel to $\overline{A}$)

$\frac{\overline{C}}{|\overline{C}|} = \frac{\overline{A}}{|\overline{A}|}$ $\qquad B = \sqrt{7^2 + 24^2} = 25$

$\frac{\overline{C}}{|\overline{B}|} = \frac{\overline{A}}{|\overline{A}|}$ $\qquad A = \sqrt{3^2 + 4^2} = 5$

$$\overline{C} = \frac{\left(\overline{A}\right)B}{A}$$

$$= \frac{\left(3\hat{i} + 4\hat{j}\right)25}{5}$$

$$\overline{C} = 15\hat{i} + 20\hat{j}$$

132. As $\cos^2\alpha + \cos^2\beta + \cos^2\gamma = 1$

$\cos^2 45^o + \cos^2 60^o + \cos^2\gamma = 1$

Solving $\gamma = 60°$

$\therefore Vector\,\overline{A} = A\cos\alpha\hat{i} + A\cos\beta\hat{j} + A\cos\gamma\hat{k}$

$2\cos 45^o\hat{i} + 2\cos 60^o\hat{j} + 2\cos 60^o\hat{k}$

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

133. $\overline{R} = \overline{OA} + \overline{AB} + \overline{BC}$

$\overline{R} = \left(5\cos 37\hat{i} + 5\sin 37\hat{j}\right) + 3\hat{i} + 4\hat{j}$

$\overline{R} = 4\hat{i} + 3\hat{j} + 3\hat{i} + 4\hat{j}$

$\overline{R} = 7\hat{i} + 7\hat{j}, \therefore R = 7\sqrt{2}cm$ and

$\alpha = 45^o$ with horizontal.

134. Conceptual

135. Conceptual

(e/m) →specific change is inversely proportional to mass.

136. Isobars have same mass number, different atomic numbers.

137. When an atom gets converted into its ion, there will be loss or gain of only electrons.

138. $\bar{v} = \frac{1}{\lambda} = \frac{1}{600X10^{-7}} = 1.6X10^4\,cm^{-1}$

139. r = 0.529 x n²

$r_2 : r_4 : r_6 = 2^2 : 4^2 : 6^2$

140. $\frac{1}{\lambda} = \frac{1}{\lambda_1} + \frac{1}{\lambda_2}$

$\frac{1}{355} = \frac{1}{680} + \frac{1}{\lambda_2}$

141. $-34.84 = \frac{-313.6}{n^2}$, n =3

142. $\lambda = 3.33 \times \frac{n}{z}\overset{0}{A}$

Given $n = 1, z = 2$

$\lambda = 3.33 \times \frac{1}{2} = 1.65\overset{0}{A}$

143. When electron jumps to 2nd orbit from higher orbits the series obtained is Balmer series.

144. If n + l is same, energy of orbital remains same

145. Any orbital can accommodate only two electrons

146. r x n² r = 0.529 x n², = r_1 x 4² = 16r_1

147. p_x, p_y, p_z orbitals of the same energy level are degenerate.

148. Conceptual

149.

$Cr^{+3} : [Ar]3d^3 4s^0 \Rightarrow 3\,\text{unpaired electrons}$

$Ni^{+2} : [Ar]3d^8 4s^0 \Rightarrow 2\,\text{unpaired electrons}$

$Mn^{+2} : [Ar]3d^5 4s^0 \Rightarrow 5\,\text{unpaire electrons}$

$Zn^{+2} : [Ar]3d^{10} 4s^0 \Rightarrow 0\,\text{unpaired electrons}$

150. Conceptual

151. Orbital angular momentum = $\frac{h}{2\pi}\sqrt{l(l+1)}$

As 'l' value increases, orbital angular momentum increases.

152. If m= +2 (max), then l=2, n=3, number of waves in an orbit =n =3

153. Angular momentum of an electron in an orbit = nh/2π.For two successive orbits = $\frac{3h}{2\pi}, \frac{2h}{2\pi}$

$$\frac{3h}{2\pi} - \frac{2h}{2\pi} = \frac{h}{2\pi}$$

154. Conceptual

155. E_1 =-13.6 eV, E_2=-3.4 eV

156. Conceptual

157. Electronic configurations of Cr and Cu are ground state configurations.

158. $\frac{h}{2\pi}\sqrt{l(l+1)}$, l=0 for 's' orbital

159. Ni [Ar] $4s^2 3d^8$. In Ni^{+2} 4s electrons are only lost. Hence 'd' electrons remain same.

160. Number of radial nodes = n – l – 1 , 3s : 3- 0 - 1= 2, 2p : 2 – 1 – 1

161. r = 0.53 x $\frac{n^2}{z}$ A° = 0.53 x $\frac{1^2}{3}$ A°

162. $Cu^+[Ar]4s^0 3d^{10}$

5 electrons with – ½ spin

163. AE = $E_2 - E_1$ = 1.312 x $10^6 \left[1 - \frac{1}{4}\right]$

164. $\lambda = \frac{h}{\sqrt{2nkE}}$

$$\frac{\lambda_1}{\lambda_2} = \sqrt{\frac{KE_2}{KE_1}}$$

165. Mendeleef corrected atomic weights of Be, In etc using atomic wt = Equivalent wt x Valancy

166. Conceptual

167. Fig

168. 2nd orbit is filled in second period with 8 e^-

169. III B grp (or) 3rd group has 32 elements

170. Conceptual

171. Lanthanides belong to 6th period. III B group

172. Conceptual

173. Conceptual

174. Conceptual

175. Pel $1s^2 2s^2 2p^6 3s^2 3p^6 \underline{4s^2} 3d^{10} \underline{4p^6}$

$5s^0 \underline{4d^{10}}$ 18 e^-

176. Order in which orbitals are filled is ns, (n-1)d, np

177. Transuranic elements belong to actinoids

178. Conceptual

179. n = 2, l = 1, '2s' orbital. There fore element belongs to 's' block 2nd period.