Monthly Progressive Test (Solution)

Class: XI

Subject: PCMB

Academic Excellence Programme TECHNO ACE

Test Booklet No.: MPT09 **Test Date:** 22012025

Physics

1. Ⓐ

$E = (\frac{1}{2}\ RT)$ per mole for each degree of freedom as per equipartition law.

$= \frac{f}{2}\ RT$ (at normal temperature)

2. Ⓑ

$dQ = nc_p\ dT$ ..... at constant temperature.

3. Ⓒ

O = C = O linear structure

$\therefore$ degree of freedom = 5

4. Ⓓ

$$r = 1 + \frac{2}{f} = 1 + \frac{2}{6} = \frac{4}{3}$$

5. Ⓐ

$$He : C_P = R + \frac{3R}{2} = 5\frac{R}{2}$$

$$O_2 : C_P = R + \frac{5R}{2} = 7\frac{R}{2}$$

$$C_{P,\,min} = \frac{(1)\left(5\frac{R}{2}\right) + (1)\left(7\frac{R}{2}\right)}{1+1}$$

$$= \frac{6R}{2} = 3R$$

6. Ⓓ

$$\text{Monoatomic} : \frac{C_v}{C_P} = \frac{3\frac{R}{2}}{5\frac{R}{2}} \quad f = 3$$

$= 0.6$

$$\text{Diatomic} : \frac{5\frac{R}{2}}{7\frac{R}{2}} = 0.7 \quad f = 5$$

Assertion is wrong.

Reason is correct statement.

7. Ⓑ

$P\,v = \text{constant}.$

$P \propto \frac{1}{v}.$

8. Ⓐ

$P = \frac{1}{3}.P \quad V_{rms}{}^2$

$= \frac{1}{3}.\ \frac{m}{v}.\ V_{rms}{}^2$

$= \frac{2}{3}.\ \frac{1}{v}.\ \frac{1}{2}\ m.V_{rms}{}^2$

$P = \frac{2}{3}.\left(\frac{E}{V}\right)$

9. Ⓑ

most probable speed
= speed of highest frequency
= 4 m/s.

10. Ⓒ

$U = nC_V\,T = \frac{f\,RT}{2} \times n$

put $n = 2$

$U = fRT = 2C_VT$

11. Ⓑ

$Y = A\cos 2\pi ft. = 5\cos 2\pi ft = 5\cos\left(\frac{2\pi}{T}\right)t$

put $t = O, \quad y = +A \quad = 5\cos\pi t.$

$f = \frac{1}{T} = \frac{1}{2}$

12. Ⓐ

as $Y = \sqrt{A^2 + B^2}\,\sin(wt + \theta)$ which represents SHM.

13. Ⓒ

$\nu = \frac{Aw}{2}$

$\nu = w\sqrt{A^2 = Y^2}$

$\Rightarrow \frac{Aw}{2} = w\sqrt{A^2 - Y^2}$

$\Rightarrow \frac{A}{4} = A^2 - Y^2$

$\Rightarrow Y^2 = \frac{3A^2}{4} \Rightarrow Y = \frac{\sqrt{3}}{2}A$

14. Ⓓ

$Y = A\,sm\,wt$

$\nu = Aw\cos wt.$

$$\frac{Y^2}{A^2}+\frac{v^2}{A^2w^2}$$

$= 1$

$\Rightarrow$ ellipse.

15. Ⓓ

$a = (-w^2)\,x$ from the relation, slope $= -w^2$

16. Ⓒ

$y = A \sin wt.$

$$v = \frac{dy}{dt} = Aw \cos wt.$$

$$KE = \frac{1}{2}mv^2 = \frac{1}{2}.m\,A^2w^2\cos^2 wt$$

$$= \frac{m}{4}A^2w^2(2\cos^2 wt)$$

$$= m\frac{A^2w^2}{4}(1+\cos 2wt)$$

required frequency $= 2f$.

17. Ⓐ

$$\text{In SHM } \frac{KE_{max}}{PE_{max}} = \frac{\frac{1}{2}mw^2A^2}{\frac{1}{2}mw^2A^2} = 1$$

18. Ⓒ

$KE = PE$

$$\frac{1}{2}mw^2(A^2-x^2) = \frac{1}{2}mw^2x^2$$

$2x^2 = A^2$

$$x = \pm\frac{A}{\sqrt{2}}$$

19. Ⓑ

$$KE_{max} = PE_{max} = \frac{1}{2}KA^2$$

$$\therefore \frac{1}{2}.K_A.A^2 = \frac{1}{2}.K_B.B^2$$

$$\Rightarrow \frac{A}{B} = \sqrt{\frac{K_B}{K_A}}$$

20. Ⓐ

$y = A \sin wt$

$a = -w^2y = -w^2 A \sin wt$

$= w^2A \sin(wt + \pi)$

21. Ⓓ

$\nu_1 \neq \nu_2 \neq \nu_3$; ν_1 = constant

ν_2 = constant

22. Ⓑ

$A_1\nu_1 = A_2\nu_2$

$A_1 > A_2$

$\therefore\ \nu_2 > \nu_1$

23. Ⓐ

Stream lines don't intersect.

24. Ⓒ

As streamlines can't cross each other and mass flow per second is constant.

25. Ⓓ

Steady flow, incompressible fluid, Mass flow rate is constant.

Chemistry

26. Ⓓ

$K = K_1 . K_2 . K_3 = 1 \times 2 \times 4 = 8$

27. Ⓑ

$$CO(g) + \frac{1}{2}O_2(g) \rightleftharpoons CO_2(g)$$

$$\Delta n = 1 - \left(1 + \frac{1}{2}\right) = 1 - \frac{3}{2} = -\frac{1}{2}$$

$$Kp = Kc(RT)^{\Delta n} = K_c(RT)^{\frac{-1}{2}} = \frac{K_c}{\sqrt{RT}}$$

$$\Rightarrow \frac{K_p}{K_c} = \frac{1}{\sqrt{RT}}$$

28. Ⓐ

$N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$; K_1 = equilibrium constant = $\frac{[NO]^2}{[N_2][O_2]}$

So, for $\frac{1}{2}\ N_2(g) + \frac{1}{2}O_2(g) = NO(g)$;

$$K' = \frac{(NO)}{[N_2]^{\frac{1}{2}}[O_2]^{\frac{1}{2}}} \Rightarrow 'K'^2 = \frac{(NO)^2}{(N_2)[O_2]} = K_1$$

$$\therefore\ K' = (K_1)^{\frac{1}{2}}$$

29. Ⓒ

$2SO_2(g) + O_2(g) = 2SO_3(g)$; $K = 278$

$$\therefore\ SO_3 \rightleftharpoons\ SO_2 + \frac{1}{2}O_2\ ;\ K^1 = \frac{1}{\sqrt{K}} = \frac{1}{\sqrt{278}} = 6 \times 10^{-2}$$

30. Ⓓ

$K_P = K_C\,(RT)^{\Delta n}$; If $\Delta n = 0$, then $K_P = K_C$.

For $2C(s) + O_2(g) = 2CO_2(g)$; $\Delta n = 2 - 1 = 1$

31. Ⓑ

$HI(g) \rightleftharpoons \frac{1}{2} H_2(g) + \frac{1}{2} I_2(s)$; $K = 8$

$K = \frac{(H_2)^{\frac{1}{2}} [I_2]^{\frac{1}{2}}}{(HI)}$ ..... (1)

$H_2(g) + I_2(g) = 2\,HI(g)$; $K^1 = \frac{(HI)^2}{[H_2][I_2]}$ ..... (2)

Reversing ; $K^1 = \frac{1}{K} = \frac{1}{8}$

& Squaring $K^1 = \left(\frac{1}{8}\right)^2 = \frac{1}{64}$

32. Ⓐ

$MgCO_3(s) \overset{\Delta}{\rightleftharpoons} MgO(s) + CO_2(g)$:

$K_P = \frac{p_{Mgo(s)} \times p_{CO_2(s)}}{p_{MgCO(s)}}$

$= pCO_2(s)$ [$\because$ $p_{MgO(s)} = 1$

$p_{MgO(s)} = 1$]

In, heterogeneous system concentration or pressure of the solid does not depend & assumed as one.

33. Ⓓ

According to Le-Chatelier's principle equilibrium of the reaction $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3$ 1 + heat ; shifts in forward direction by increasing pressure and decreasing temperature.

34. Ⓐ

$N_2(g) + 3H_2(s) \rightleftharpoons 2NH_3(s)$;

Reaction Quotient, $Q = \frac{(NH_3)^2}{[N_2][H_2]^3}$; $\Delta n = 2 - 4 = -2$

At equilibrium Q = Kc, but for the progress of reaction towards right side $\theta > K_C$.

35. Ⓒ

Let, the solubility of CaF_2 in 0.1 M NaF is 'S' $mol(L)^{-1}$.

$CaF_2(s) = Ca^+ + (aq) + 2F^-(aq)$

$\underset{0.1}{NaF} = \underset{S}{Na^+} + \underset{0.1}{F^-} : [F] = 2S + 0.1$

K_{sp} of $CaF_2 = (Ca^{++}) \times (F^-)^{-2}$ Total suffix

$= (S)\,(2S + 0.1)^2$

$\because$ $2S << 0.1$

$\Rightarrow Ksp = [s]\ [.1]^2$

$S = \frac{Ksp}{(0.1)^2} = \frac{53 \times 10^{-n}}{10^{-2}} = 53 \times 10^{-9}$

36. Ⓒ

$[H^+]c\,\alpha = 0.1 \times \frac{2}{100} = 2 \times 10^{-3}$ M.

$Kw = (H+)\,[m^-]$

$\Rightarrow [OH^-] = \frac{Kw}{[H^+]} = \frac{10^{-14}}{2\times10^{-3}} = 5\times10^{-12}$

37. ©

	$2\,HI \rightleftharpoons$	H_2	$+\,I_2$	
Initially, Mole	2	0	0	
After dissociation	$2(1-\alpha)$	α	α	Total Moles $= 2 - 2\alpha + \alpha + \alpha = 2$

38. Ⓓ

$CaF_2 \rightleftharpoons Ca^{++} + 2F^-$

2×10^{-4} M $\quad 2\times10^{-4}$ M $\quad 2\times2\times10^{-4}$ M

$Ksp = [Ca^{++}]\,[F^-]^2$

$= (2\times10^{-4})\,(4\times10^{-4})^2$

$= 32\times10^{-12}\,(mol/L)^2$

39. Ⓑ

Higher the value of solubility product, higher is its solubility. In these compounds the MnS is most soluble as its solubility product is maximum.

40. ©

In 0.1 (M) NaCl, the solubility of AgCl is minimum due to the phenomenon of common ion effect.

41. Ⓐ

Both assertion and reason are correct and reason is the correct explanation of assertion.

42. Ⓐ

Both assertion and reason are correct and reason is the correct explanation of assertion.

43. Ⓑ

Both assertion and reason are correct but reason is not the correct explanation of assertion.

44. ©

$Fe_{0.94}O$, Let the O. N. Fe be 'x'

$\therefore\ 0.94\,x - 2 = 0$

$\Rightarrow 0.94\,x = 2$

$\Rightarrow\ x = +\frac{2}{0.94} = +\frac{200}{94}$

45. ©

$MnO_4^- + \begin{matrix}COO\\|\\COO\end{matrix}\!\!\diagdown\!\!\diagup Fe + H^+ \longrightarrow Mn^{++} + CO_2 + Fe^{+++} + H_2O$

$\begin{matrix}COO\\|\\COO\end{matrix}\!\!\diagdown\!\!\diagup \rightleftharpoons 2CO_2 + Fe^{+++} + 3e^{\ominus} \longrightarrow$ (1) oxidation

$MnO_4^{\ominus} + 8H^+ + 5e^{\ominus} \longrightarrow Mn^{++} + 4H_2O \longrightarrow$ (2) Reduction

equation (1) × 5 & eqa. (2) × 3

$$5\ \begin{matrix}COO\\|\\COO\end{matrix}\!\!\diagup\!\!\diagdown Fe + 3MnO_4^- + 24H+ = .10CO_2 + 5Fe^{+++} + 3Mn^{++} + 12H_2O$$

$$\therefore\ 1\ \begin{matrix}COO\\|\\COO\end{matrix}\!\!\diagup\!\!\diagdown Fe = \frac{3}{5} KMnO_4$$

46. Ⓓ

'N' is more electronegative than carbon. Moreover delocalisation (resonance) will occur.

47. Ⓓ

Balancing the equation moles of oxygen needed $\frac{3n+1}{2}$ and moles of water produced (n + 1).

48. Ⓒ

$$CH_3-\underset{\underset{Br}{|}}{CH}-CH_2-CH_3 \xrightarrow[S.R]{alc.KOH} \underset{(Major)}{CH_3-CH=CH-CH_3} + \underset{(Minor)}{CH_3-CH_2-CH=CH_2}$$

49. Ⓐ

$$ph-\overset{*3}{\underset{\underset{Br}{|}}{CH}}-\overset{*2}{\underset{\underset{OH}{|}}{CH}}-\overset{1}{\dot{C}H_3} \quad * = \text{chiral carbon}$$

50. Ⓑ

$pOH = 14 - p^H = 14 - 9.25 = 4.75$

$$pOH = pK_b + \log\frac{(Salt)}{(Base)}$$

$$\Rightarrow 4.75 = pk_b + \log_{10}\frac{(0.1)}{(0.1)}$$

$$\Rightarrow 4.75 = pk_b + 0\ [\log_{10}\ 1 = 0]$$

$$\Rightarrow pk_b = 4.75$$

Mathematics

51. Ⓐ

$$\bar{x} = \frac{117+156+206+198+223}{5}$$

$$= \frac{900}{5} = 180$$

x	$\lvert x-\bar{x}\rvert$
117	63
156	24
206	26
198	18
223	43
	174

$\therefore$ Mean deviation from the mean = $\frac{174}{5} = 34.8$

52. ©

$$\frac{\sum|x-\bar{x}|}{n}=150$$

When each observation is increased by 3.5%, then new mean = $\frac{103.5}{100}\bar{x}$.

$\therefore$ New mean deviation = $\frac{103.5}{100}\times 150 = 155.25$

53. Ⓓ

a, a + d, a + 2d, ... , a + 2nd.

$$\text{Mean} = \frac{a+(a+d)+.....+(a+2nd)}{2n+1}$$

$$= \frac{\frac{2n+1}{2}[a+a+2nd]}{2n+1}$$

$$= \frac{1}{2}[2a+2nd] = a+nd$$

x	$\lvert x-\bar{x}\rvert$
a	nd
a + d	(n – 1) d
a + 2d	(n – 2) d
,,	,,
,,	,,
,,	nd
a + 2nd	nd

$\therefore$ Mean deviation from the mean = $\frac{\cancel{2}\times\frac{(n+1)nd}{\cancel{2}}}{2nd}$

$$= \frac{n(n+1)d}{2n+1}$$

54. Ⓓ

$n_1 = 200, \bar{x}_1 = 20, n_2 = 300, \bar{x}_2 = 12$

$\sigma_1 = 2, \sigma_2 = 5$

$$\bar{x} = \frac{200\times 20+300\times 12}{200+300}$$

$$= \frac{4000+3600}{500} = \frac{7600}{500} = 15.2$$

$d_1 = |20-15.2| = 4.8$

$d_2 = |12-15.2| = 3.2$

$\therefore$ Combined variance = $\frac{200\left[(4.8)^2+4\right]+300\left[(3.2)^2+25\right]}{200+300}$

$$= \frac{5408+10572}{500}$$

$$= 31.96$$

55. ©

Variance of first n natural numbers

$$= \frac{\sum n^2}{n} - \left(\frac{\sum n}{n}\right)^2$$

$$= \frac{n(n+1)(2n+1)}{6n} - \frac{(n+1)^2}{4}$$

$$= \frac{(n+1)}{12}[4n+2-3n-3]$$

$$= \frac{n^2-1}{12}$$

$$\therefore \frac{n^2-1}{12} = 10 \Rightarrow n^2 - 1 = 120$$

$$\Rightarrow n^2 = 121$$

$$\Rightarrow n = 11$$

Variance of first m even natural numbers = $\frac{4(m^2-1)}{12} = \frac{m^2-1}{3}$

$$\therefore \frac{m^2-1}{3} = 16 \Rightarrow m^2 = 49 \Rightarrow m = 7$$

$\therefore$ m + n = 11 + 7 = 18

56. Ⓐ

Variance of 10 natural numbers 1, 1, 1, ... 1, $k = \frac{9+k^2}{10} - \left(\frac{9+k}{10}\right)^2$

$$\therefore \frac{9+k^2}{10} - \left(\frac{9+k}{10}\right)^2 < 10$$

$\Rightarrow 10(9 + k^2) - (9 + k)^2 < 1000$

$\Rightarrow 90 + 10k^2 - 81 - k^2 - 18k < 1000$

$\Rightarrow 9k^2 - 18k - 991 < 0$

$\Rightarrow -13 < k < 11.54$

$\therefore$ Maximum possible value of k is 11.

57. Ⓓ

If standard deviation of the numbers 2, 4, 5 and 6 = a, then standard deviation of the numbers 4, 6, 7 and 8 is also a because standard deviation does not depend on changes in origin.

58. Ⓐ

Variance of w, x, y and z = 9

$\therefore$ Variance of 5w, 5x, 5y and 5z = 25 × 9 = 225.

59. Ⓑ

Total outcomes = 216

Triplet outcomes are (1, 1, 1), (2, 2, 2), (3, 3, 3), (4, 4, 4), (5, 5, 5), (6, 6, 6)

$\therefore$ Required probability = $\frac{6}{216} = \frac{1}{36}$

60. Ⓐ

Total outcomes = $6 \times 5 = 30$

Favourable outcomes = $30 - 6 = 24$

$\therefore$ Required probability = $\frac{24}{30} = \frac{4}{5}$

61. Ⓒ

total outcomes = 36

Favourable outcomes = (1, 3), (3, 1), (2, 2)

$\therefore$ Required probability = $\frac{3}{36} = \frac{1}{12}$

62. Ⓒ

{(H, 1), (H, 2), (H, 3), (H, 4), (H, 5), (H, 6)

(T, 1), (T, 2), (T, 3), (T, 4), (T, 5), (T, 6)}

$\therefore$ total outcomes = 12

63. Ⓑ

Two possible cases for each bulb (a) defective, (b) non-defective.

$\therefore$ Total possible cases = $2 \times 2 \times 2 \times 2 = 16$

$\therefore$ Required probability = $\frac{1}{16}$

64. Ⓑ

$P(A) = 0.3$, $P(B)=0.4$, $P(C)=0.8$,

$P(A \cap B) = 0.08$, $P(A \cap C) = 0.28$

$P(A \cap B \cap C) = 0.09$, $P(A \cup B \cup C) = 0.75$

$P(A \cup B \cup C) = P(A) + P(B) + P(C) - (A \cap B) - P(B \cap C) - P(A \cap C) + P(A \cap B \cap C)$

$\Rightarrow 0.75 = 0.3 + 0.4 + 0.8 - 0.08 - P(B \cap C) - 0.28 + 0.09$

$\Rightarrow P(B \cap C) = 1.59 - 0.36 - 0.75$

$\Rightarrow P(B \cap C) = 1.59 - 1.11 = 0.48$

65. Ⓐ

$P(A \cup B) = \frac{3}{4}$, $P(A \cap B) = \frac{1}{4}$, $P(A^C) = \frac{2}{3}$

$P(A) = 1 - \frac{2}{3} = \frac{1}{3}$

$P(A \cup B) = P(A) + P(B) - P(A \cap B))$

$= \frac{3}{4} = \frac{1}{3} + P(B) - \frac{1}{4}$

$\Rightarrow P(B) = \frac{3}{4} - \frac{1}{3} + \frac{1}{4} = \frac{9-4+3}{12} = \frac{8}{12} = \frac{2}{3}$

66. Ⓒ

$P(A) = \frac{4}{5}$, $P(B) = \frac{3}{4}$, $P(C) = \frac{2}{3}$

P(A, B and C will hit) = $\frac{4}{5} \times \frac{3}{4} \times \frac{2}{3}$

$= \frac{2}{5}$

67. Ⓐ

P (A will not hit, B and C will hit)

$= \frac{1}{5}\times\frac{3}{4}\times\frac{2}{3} = \frac{1}{10}$

68. Ⓓ

P (any two of A, B and C will hit)

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

$= \frac{1}{10} + \frac{2}{15} + \frac{1}{5}$

$= \frac{3+4+6}{30} = \frac{13}{30}$

69. Ⓒ

Variance of $x_1, x_2, \ldots\ldots\ldots\ldots, xn = 4\sigma^2$

$\therefore$ Variance of $2x_1, 2x_2, \ldots\ldots, 2x_n = 4\sigma^2$

$\therefore$ Assertion is true.

Arithmetic mean = $\overline{x}$.

$\therefore$ Arithmetic mean of $2x_1, 2x_2, \ldots\ldots, 2x_n = 2\overline{x}$

$\therefore$ Reason is false.

70. Ⓐ

Mean of 2, 9, 9, 3, 6, 9, 4 = $\frac{2+9+9+3+6+9+4}{7} = \frac{42}{7} = 6$

x	$\lvert x-\bar{x}\rvert$
2	4
9	3
9	3
3	3
6	0
9	3
4	2
	18

$\therefore$ Mean deviation about mean = $\frac{18}{7} = 2.57$

$\therefore$ Assertion is true.

Reason (R) : Mean deviation = $\frac{\sum\lvert x_i-\bar{x}\rvert}{n}$ is true and reason (R) is the correct explanation of (A).

71. Ⓐ

$a + b = 4\sqrt{ab}$

$(a + b)^2 = 16ab$

$(a - b)^2 = 16ab - 4ab = 12ab$

$\therefore a - b = 2\sqrt{3}\ \sqrt{ab}$

Cont.. 12

$$\therefore \frac{a+b}{a-b}=\frac{4\sqrt{b}}{2\sqrt{3}\sqrt{ab}}=\frac{2}{3}$$

$$\Rightarrow \frac{a}{b}=\frac{2+\sqrt{3}}{2-\sqrt{3}}=\frac{(2+\sqrt{3})^2}{1}=\frac{7+4\sqrt{3}}{1}$$

72. Ⓐ

If 2n – 3 is even, then only one middle term = ${}^{2n-3}C_{\frac{2n-3}{2}+1}\,(a)^{\frac{2n-3}{2}}\,(b)^{\frac{2n-3}{2}}$

If (2n – 3) is odd, then two middle terms which are ${}^{2n-3}C_{\frac{2n-3-1}{2}+1}\,(a)^{n-2}\,(b)^{n-1}$

and ${}^{2n-3}C_{\frac{2n-3+1}{2}+1}\,(a)^{n-1}\,(b)^{n-2}$

$$\therefore \frac{2n-3}{2}+1=11\Rightarrow\frac{2n-3}{2}=10\Rightarrow 2n=23\Rightarrow n=11.5$$

$$\frac{2n-4}{2}+1=11\Rightarrow 2n-4=20\Rightarrow 2n=24\Rightarrow n=12$$

$$\frac{2n-2}{2}+1=11\Rightarrow 2n-2=20\Rightarrow 2n=22\Rightarrow n=11\ \ \therefore n=12$$

73. Ⓑ

⊥ distance of the point (2, 3, 5) from x – z plane i.e. y = 0 is 3 units.

74. Ⓐ

$2a = 8 \Rightarrow a = 4$

$2b = 10 \Rightarrow b = 5$

$\therefore$ equation of hyperbola is $\frac{x^2}{16}-\frac{y^2}{25}=1$

75. Ⓒ

$$\lim_{x\to 0}\ \frac{\sin^2 x+\sqrt{2}\sin x}{x^2-4x}$$

$$=\lim_{x\to 0}\ \frac{\frac{\sin x}{x}\times\sin x+\sqrt{2}\frac{\sin x}{x}}{x-4}$$

$$=\frac{1\times 0+\sqrt{2}}{-4}=-\frac{\sqrt{2}}{4}=-\frac{1}{2\sqrt{2}}$$

76. Ⓒ

Uric acid.

77. Ⓐ

Anuria.

78. Ⓑ

Increased arterial pressure in kidneys.
Increased arterial pressure in kidney will promote filtration, but as the person is suffering from poor renal absorption, the volume of glomerular filtrate and urine will increase and the person will be unable to maintain the volume of blood.

79. Ⓐ

A minute vessel of the peritubular capillaries, running parallel to Henle's loop.

80. Ⓒ

Epithelial cells of Bowman's capsule.

81. Ⓐ

Atrial Natriuretic Factor.

82. Ⓐ

Impermeable to water but permeable to electrolytes.

83. Ⓐ

Unipolar.
As the embryo gets older, the unipolar neurons mature to bipolar or multipolar neorons.

84. Ⓑ

Corpora quadrigemina.

85. Ⓒ

Medulla.

86. Ⓓ

Motor end plate.

87. Ⓑ

Choroid.

88. Ⓒ

Only cones.
The region of most distinct and accurate vision.

89. Ⓑ

Ear ossicles

90. Ⓐ

Ear drum.

91. Ⓐ

Both A and R are true and R is the correct explanation of A.
The selective permeability of the ions help to maintain potential difference on either sides of the membrane.

92. Ⓑ

Both A and R are true but R is not the correct explanation of A

93. Ⓒ

A is true but R is false.
The amount of urine released per day is 1.5 litres. Selective reabsorption of water and hormones, like ADH, help to maintain the concentration of urine.

94. Ⓓ

A is false but R is true.
Marine fishes are ureotelic. Sea water is hypotonic for marine fishes. Thus excreting urea helps in osmoregulation.

95. Ⓑ

GFR decreases.

96. Ⓓ

Angiotensin II.

97. Ⓑ

X-Aldosterone; Y-DCT; Z-increased GFR.

98. Ⓐ

Na+

99. Ⓐ

3 Na+ outwards and 2 K+ into the cell

100. Ⓑ

Depolarised.
the rapid depolarization occurs as a result of opening of the voltage-gated sodium channels.