SOLUTIONS

Mentors Eduserv

All India Test Series 2018

Unit Test-6

NEET PATTERN

Test Date: 28-10-2017

Mentors Eduserv: Plot No.-136/137, Parus Lok Complex, Boring Road Crossing,
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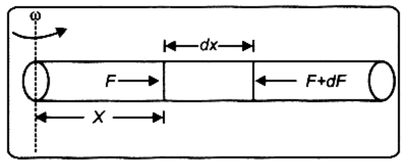
PHYSICS

1. (1)

Let the length of a small element of tube be dx. Mass of this element

$$dm = \frac{M}{L}dx$$



Where M is mass of filled liquid and L is the length of tube.

Force on this element

$$dF = (dm)\omega^2 x = \left(\frac{M}{L}\right)dx.\omega^2 x$$

Integrating

$$\int_0^F dF = \frac{M}{L}\omega^2 \int_0^L x\,dx$$

or $F = \frac{M}{L}\omega^2\left[\frac{L^2}{2}\right] = \frac{ML\omega^2}{2}$ or $F = \frac{1}{2}ML\omega^2$

2. (3)

Working from gramophone frame, a coin place at distance r remains at rest till

F_s (maxi) $\geq F_{centrefugal\ force}$

$F_{frictional} \geq F_{centripetal}$

$\mu mg \geq m\omega^2 r \qquad \Rightarrow \frac{\mu g}{r} \geq \omega^2$

3. (3)

We know banking angle is related with velocity and radius of the curve as

$\tan\theta = \frac{v^2}{rg} \qquad \Rightarrow \upsilon = \sqrt{900 \times 10 \times \tan 45^\circ} = 30 m/sec$

4. (1)

Here, Mass of a stone, m = 2kg

Length of a string, r = 0.5m

Breaking tension, T = 900N

As $T = mr\omega^2$ or $\omega^2 = \frac{T}{mr} = \frac{900}{2\times 0.5} = 900$

$\omega = 30 \text{ rad s}^{-1}$

5. (3)

$$\mu = \frac{V^2}{rg} = \frac{4.9\times 4.9}{4\times 9.8} = 0.61$$

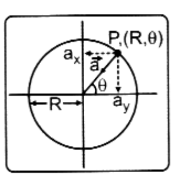
6. (4)

$$\theta = \tan^{-1}\left(\frac{v^2}{rg}\right) = \tan^{-1}\left[\frac{\left(14\sqrt{3}\right)^2}{20\sqrt{3}\times 9.8}\right] = \tan^{-1}\left[\sqrt{3}\right] = 60°$$

7. (2)

$$\frac{v^2}{Rg} = \left(\frac{\mu_s + \tan\theta}{1-\mu_s \tan\theta}\right) \Rightarrow v = \sqrt{Rg\left[\frac{\mu_s + \tan\theta}{1-\mu_s\tan\theta}\right]}$$

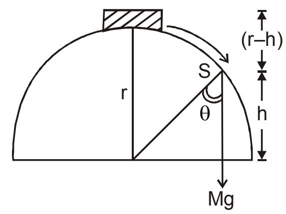
8. (4)



$$\vec{a} = -\frac{v^2}{R}\cos\theta\,\hat{i} - \frac{v^2}{R}\sin\theta\,\hat{j}$$

9. (2)

The block will lose contact with the surface of hemisphere when the centripetal acceleration becomes equal to the component of acceleration due to gravity along the radius. Suppose it happens at the point S as shown in the adjoining figure. The velocity at the point S is given by : v= $[2g (r – h)]^{1/2}$



The centripetal acceleration should be equal to the component of g along SO.

i.e., $\frac{v^2}{r} = g \cos\theta$

or $\frac{2g(r-h)}{r} = g \times \frac{h}{r}$ or $2(r-h) = h \therefore h = \frac{2r}{3}$

10. (1)

The minimum velocity which the bucket should have to complete the full circle is, $\upsilon \geq \sqrt{5gR}$

But, $\upsilon = r\omega = R\frac{2\pi}{T}$ or $T = \frac{2\pi R}{\upsilon}$

But, $\upsilon \geq \sqrt{5gR}$

i.e., $T \leq \frac{2\pi R}{\sqrt{5gR}}$ or $T \leq 2\pi\sqrt{\frac{R}{5g}}$

Given : R = 2 m, g = 10 m/s^2

$\therefore$ $T_{max} = 2\pi\sqrt{\frac{2}{5\times10}} = \frac{2\pi}{5} = \frac{2\times3.14}{5} = 1.2$ sec.

i.e., T = 1 sec

11. (3)

Suppose θ be the angular amplitude of oscillation. When the body moves from B to A :

Decrease in gravitational potential energy = Mg (CA)

Increase in kinetic energy = $\frac{1}{2}MV^2$

According to law of conservation of energy,

$\frac{1}{2}MV^2 = Mg(CA)$

$\therefore$ $V^2 = 2g\,(CA)$

But, CA = OA –OC = l –l cos θ

= l (1– cos θ)

$\therefore$ $V^2 = 2gl\,(1-\cos\theta)$

At the lowest point A :

$$T = Mg = \frac{MV^2}{l} = 2Mg(1-\cos\theta)$$

At A, $T = T_{max.} = 2Mg$

$\therefore$ 2Mg – Mg = 2Mg (1– $\cos\theta$)

or $\frac{1}{2} = 1-\cos\theta$

or $\cos\theta = \frac{1}{2}$ or $\theta = 60°$

12. (4)

Velocity at the bottom = $\sqrt{2gh}$

For completing the loop

$$\sqrt{2gh} = \sqrt{5gR}$$

$\therefore$ $R = \frac{2h}{5} = 2\times\frac{5}{5} = 2$ cm.

13. (4)

Because the particle crosses the topmost point C, with critical speed, hence $V_C = \sqrt{gR}$,

where R is the radius of circular path in vertical plane.

Now, $V_A^2 = V_C^2 + 2g(2R) = gR + 4gR = 5gR$

$\therefore \quad V_A = \sqrt{5gR}$

Similarly, $V_B^2 = V_C^2 + 2g(R) = gR + 2gR = 3gR$

$\therefore \quad V_B = \sqrt{3gR}$

$\therefore \quad V_A : V_B : V_C = \sqrt{5} : \sqrt{3} : \sqrt{1}.$

14. (3)

Radius of circular path in the horizontal plane

$r = l \sin\theta$

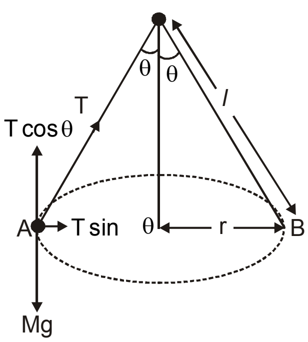
Forces acting on the bob are :

(i) T = tension in the string

(ii) Mg = weight of the bob Resolving T along the vertical and horizontal directions, we get;

$T\cos\theta = Mg$ .....(i)

$T\sin\theta = Mr\omega^2 = M(l\sin\theta)\,\omega^2$



or $\quad T = Ml\omega^2$ ...(ii)

Dividing eqn. (ii) by eqn. (i), we get ;

$$\frac{1}{\cos\theta} = \frac{l\omega^2}{g} \text{ or } \omega^2 = \frac{g}{l\cos\theta}$$

$\therefore$ Time period $\quad t = \frac{2\pi}{\omega} = 2\pi\sqrt{\frac{l\cos\theta}{g}}$.

15. (4)

16. (2)

Rate of change of speed,

$$\frac{dv}{dt} = \text{tangential acceleration} = \frac{\text{tangential force}}{\text{mass}} = \frac{mg\sin 30^\circ}{m}$$

$$= g\sin 30^\circ = 10 \times 1/2 = 5\ m/s^2.$$

17. (4)

Total reaction = weight of the car + centripetal force

$$= mg + \frac{mv^2}{r} = 700\left(9.8 + \frac{10\times 10}{100}\right)$$

= 700 x 10.8 = 7560 N.

18. (4)

To cross the bridge without leaving the ground, at the highest point of the bridge,

$$\frac{Mv^2}{R} = Mg \quad \text{or} \quad v = \sqrt{Rg}.$$

19. (3)

20. (1)

Horizontal component $B_H = B\cos\phi$

Total intensity of each magnetic field B = $\frac{B_H}{\cos\phi}$

$$= \frac{1.8\times 10^5}{\cos 30^\circ} = \frac{1.8\times 10^{-5}}{\sqrt{3}/2} = 2.08\times 10^{-5}\ Wb/m^2$$

21. (2)

$$B = \frac{\mu_0 M}{4\pi r^2}, B \alpha \frac{M}{r^2}$$

22. (4)

In series current remains same

$$i_1 = i_2 \Rightarrow K_1 \tan 60^\circ = K_2 \tan 45^\circ \Rightarrow \frac{K_1}{K_2} = \frac{1}{\sqrt{3}}$$

where $K = \frac{2RB_H}{\mu_0 n}$, for same radius

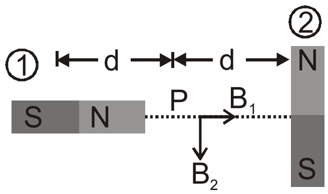
$$\frac{K_1}{K_2} = \frac{n_2}{n_1} \qquad \therefore \frac{n_1}{n_2} = \frac{\sqrt{3}}{1}$$

23. (4)

at point P net magnetic field $B_{net} = \sqrt{B_1^{\ 2} + B_2^2}$

where $B_1 = \frac{\mu_0}{4\pi}.\frac{2M}{d^3}$ and $B_2 = \frac{\mu_0}{4\pi}.\frac{M}{d^3}$

$\Rightarrow\ B_{net} = \frac{\mu_0}{4\pi}.\frac{\sqrt{5}M}{d^3}$



24. (4)

25. (4)

For paramagnetic sample (Curie's law) $I \propto B / T$

where, I_1 = 0.8A/m and B_1 = 0.8T

T_1 = 5K $\Rightarrow B_2$ = 0.4T

T_2 = 20 K, I_2 = ? $\qquad \frac{I_1}{I_2} = \frac{B_2 / T_1}{B_2 / T_2} \Rightarrow \frac{I_1}{I_2} = \frac{B_1 \times T_2}{B_2 \times T_1}$

$$\Rightarrow \quad \frac{0.8}{I_2} = \frac{0.8 \times 20}{0.4 \times 5}$$

$$\Rightarrow \quad I_2 = \frac{0.4 \times 5}{20} = 0.1\ \text{Am}^{-1}$$

26. (4)

Curie-Weiss law is obeyed by iron above Curie temperature.

27. (1)

The reversed magnetic field needed to demagnetise the specimen is known as coercivity of the material.

$$B = \mu_0 H \Rightarrow \mu_0 ni = \mu_0 H$$

$$\Rightarrow \frac{Ni}{L} = H \qquad \left(\because n = \frac{N}{L}\right)$$

$$\text{or} \quad i = \frac{HL}{N} \qquad \text{....(I)}$$

Given, H = 4 x 10^4 Am^{-1}, L = 12 cm = 12 x 10^{-2} m and N = 60 turns

Substituting the values in Eq. (I), we get

$$i = \frac{4 \times 10^3 \times 12 \times 10^{-2}}{60} = 8A$$

28. (1)

The given, $\chi_m = 229$

$\mu_0 = 4\pi \times 10^{-7} H/m, \mu = ?$

We know that $\mu = \mu_0(1+\chi_m)$

$\mu = 4\pi \text{ x } 10^{-7} (1 + 299)$

$$\Rightarrow \; = 4 \times \frac{22}{7} \times 10^{-7} \times 300$$

$$\frac{26400}{7} \times 10^{-7} = 3771.4 \times 10^{-7} \text{ H/m}$$

or $\simeq 3771 \text{ x } 10^{-7} \text{ Hm}^{-1}$

29. (2)

As, $\mu = \mu_0(1+\chi)$ or $\mu = 4\pi \times 10^{-7}(1+599)$

or $\mu = 7.536 \times 10^{-4} \text{ TmA}^{-1}$

$B = \mu H = 7.536 \times 10^{-4} \times 1200 T$

$f = BA = 7.536 \times 10^{-4} \times 1200 \times 0.2 \times 10^{-4} \text{ Wb}$

$= 1.81 \text{ x } 10^{-5} \text{ Wb}$

30. (4)

In the sum and difference method of vibration magnetometer

$$\frac{M_1}{M_2} = \frac{T_2^2 + T_1^2}{T_2^2 - T_1^2}$$

Here $T_1 = \frac{1}{n_1} = \frac{60}{12} = 5 \text{ sec.}$

$$T_2 = \frac{1}{n_2} = \frac{60}{4} = 15 \text{ sec.}$$

$$\therefore \quad \frac{M_1}{M_2} = \frac{15^2 + 5^2}{15^2 - 5^2} = \frac{225+25}{225-25} = \frac{5}{4}$$

31. (2)

Time period of suspended magnet $T = 2\pi\sqrt{\dfrac{I}{MB\cos\delta}}$

$\therefore$ Frequency $\nu = \dfrac{1}{2\pi}\sqrt{\dfrac{MB\cos\delta}{I}}$

$\Rightarrow \quad \nu = \sqrt{B\cos\delta}$ or $B \propto \dfrac{\nu^2}{\cos\delta}$

$\Rightarrow \quad \dfrac{B_1}{B_2} = \dfrac{400}{\cos 30^\circ} \times \dfrac{\cos 60^\circ}{225}$

$\Rightarrow \quad \dfrac{B_1}{B_2} = \dfrac{16\times 2}{9\times\sqrt{3}} \times \dfrac{1}{2} = 16.9\sqrt{3}$

32. (2)

When magnet is divided into two equal parts, the magnetic dipole moment

M' = pole strength $\times \dfrac{l}{2} = \dfrac{M}{2}$

(pole strength remains same)

Also, the mass of magnet becomes half, i.e.

$$m' = \frac{m}{2}$$

Moment of intertia of magnet

$$I = \frac{ml^2}{12}$$

New moment of intertia

$$I' = \frac{1}{12}\left(\frac{m}{2}\right)\left(\frac{l}{2}\right)^2 = \frac{ml^2}{12\times 8} \Rightarrow I' = \frac{I}{8}$$

Now, $T = 2\pi\sqrt{\left(\dfrac{I}{MB}\right)}$

$$T = 2\pi\sqrt{\left(\frac{I'}{M'B}\right)} = 2\pi\sqrt{\left(\frac{I/8}{MB/2}\right)}$$

$\therefore \quad T' = \dfrac{T}{2} \Rightarrow \dfrac{T'}{T} = \dfrac{1}{2}$

33. (4)

$$\tan\delta' = \frac{\tan\delta}{\cos\theta} = \frac{\tan 45°}{\cos 30°}$$

$$\tan\delta' = \frac{1}{\sqrt{3}/2} = \frac{2}{\sqrt{3}}\delta' = \tan^{-1}\left(\frac{2}{\sqrt{3}}\right)$$

34. (3)

In this question, $\cos\alpha < 1$

i.e. $\frac{1}{\cos\alpha} > 1$ or $\frac{\tan\theta'}{\tan\theta} > 1 \Rightarrow \tan\theta' = \tan\theta$

$\therefore$ $\theta' > \theta$

i.e. angle of apparent dip is more angle of actual dip θ.

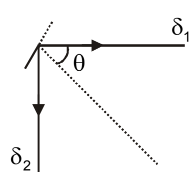
35. (3)

Here, $\tan\delta_1 = \frac{V}{H\cos\theta}$

where,

V = vertical component of earth's magnetic field

H = Horizontal magnetic field of earth



$$\tan\delta_2 = \frac{V}{H\cos(90° - \theta)} = \frac{V}{H\sin\theta}$$

$$\Rightarrow \frac{\tan\delta'}{\tan\delta_2} \frac{\sin\theta}{\cos\theta} = \tan\theta \text{ or } \theta = \tan^{-1}\left(\frac{\tan\delta_1}{\tan\delta_2}\right)$$

36. (1)

If α is the angular acceleration produced, then

$I\alpha = MB_H \sin\theta$

If θ is small, then $\sin\theta \approx \theta$ and hence the angular acceleration is given by $\alpha = \frac{MB_H\theta}{I}$

37. (4)

As potential energy is given as

U = – MB (1 – cos θ) $\Rightarrow$ U = – MB

Hence, **M** and **B** parallel to each other for minimum potential energy.

38. (2)

Given, work done = W and $\theta = 60^\circ$

We know that

$$W = MB(1-\cos\theta) \Rightarrow = MB(1-\cos 60^\circ) = \frac{MB}{2}$$

Hence, torque $|T| = MB\sin 60^\circ = \sqrt{3}W$

39. (1)

Let a wire of length L is bend in a circular form of radius r.

Then, $2\pi r = L \Rightarrow r = \frac{L}{2\pi}$ ...(i)

The magnetic dipole moment of a circular ringh M = IA (A is area of the ring) or M = $I\pi r^2$ ...(ii)

On putting the value of r from Eq. (i) in Eq. (ii), we get

$$M = I\pi\left(\frac{L}{2\pi}\right)^2 \Rightarrow M = I\pi \times \frac{L^2}{4\pi^2} \Rightarrow M = \frac{IL^2}{4\pi}$$

40. (4)

When magnet is cut axially, new magnetic moment of each part

$$M_1 = \left(\frac{m}{2}\right)l = \frac{M}{2}$$

On placing both the parts perpendicularly,

$$M_2 = \sqrt{(M)^2 + (M)^2} = \frac{M}{\sqrt{2}} \Rightarrow \frac{M_1}{M_2} = \sqrt{2}$$

41. (1)

Pole strength doesn't depend upon the length.

42. (4)

$$B_1 = \frac{2M}{x^3} \text{ and } B_2 = \frac{M}{y^3}$$

As $B_1 = B_2$

Hence $\frac{2M}{x^3} = \frac{M}{y^3}$ or $\frac{x^3}{y^3} = 2$ or $\frac{x}{y} = 2^{1/3}$

43. (4)

Force experienced by either of the pole

F = mB or $6 \times 10^{-4} = m \times 2 \times 10^{-5}$

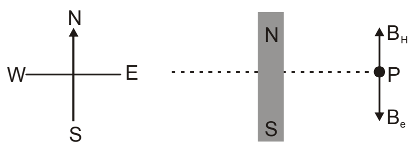
or m = 30 A – M

Further magnetic moment M = mL

or 3 = 30L $\Rightarrow$ L = 0.1m

44. (4)

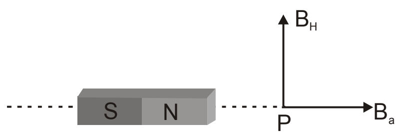
Initially,



Neutral point obtained on equatorial line and at neutral point $|B_H| = |B_e|$

where B_H = Horizontal component of earth's magnetic field, B_e = Magnetic field due to bar magnet on it's equatorial line.

Finally,



Point P comes on axial line of the magnet and at P,

net magnetic field B = $\sqrt{B_a^2 + B_H^2}$

= $\sqrt{(2B_e)^2 + (B_H)^2} = \sqrt{(2B_H)^2 + B_H^2} = \sqrt{5}B_H$

45. (2)

In tangent galvanometer, $I \propto \tan\theta$

$$\frac{i_1}{i_2} = \frac{\tan\theta_1}{\tan\theta_2}$$

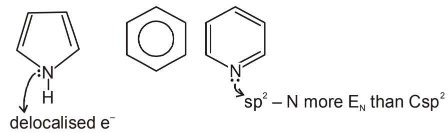
As given

$$\frac{\sqrt{3}}{3} = \frac{\tan 30^\circ}{\tan\theta_2} \Rightarrow \theta = 45^\circ$$

CHEMISTRY

46. (3)

Electron density in ring is the main cause for electrophilic attack in ring



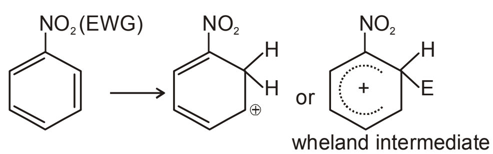
47. (3)

(same as above-question)

–O-Me group forms stronger $\pi-$bond than $-\ddot{S}-$Me group in the wheland intermediate generated by the attack of electrophile

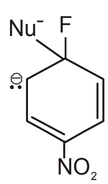
48. (3)

In 3, +ve remain away from NO_2 There fore stability of 3 is more than 1 and 2

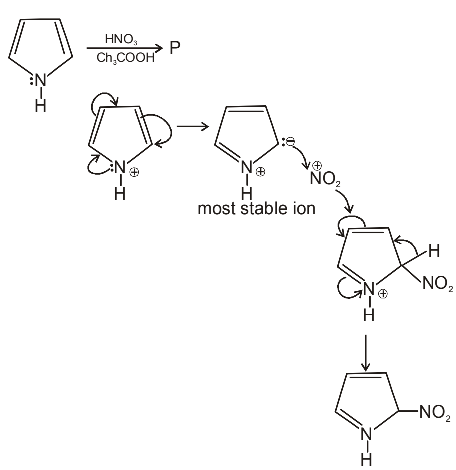


49. (1)

during Ar SN_2, +ve charge on ipso carbon is the main reason



50. (2)



51. (1)

since SN_1 involves 2 step in which first step is slow and rds

52. (2)

Factual question

53. (1)

Factual question

54. (1)

55. (4)

56. (3)

It is SN_2

57. (3)

Factual question

58. (2)

E-2 mechanism

59. (4)

60. (1)

Since H_2O is weak base/Nu^- there fore it favours SN_1 and E_1

61. (3)

$K_p = K_c\ RT^{\Delta n}$, $\Delta n = 2 - 4 = -2$, $K_p = K_c[RT]^{-2}$

62. (4)

$K_1 = \dfrac{[SO_3]}{[SO_2]\ [O_2]^{1/2}}$ $K_2 = \dfrac{[O_2]\ [SO_2]^2}{[SO_3]^2}$ $K_2 = \dfrac{1}{K_1^2}$

63. (3) 64. (2) 65. (4)

66. (2)

In the equation of $K_P = \dfrac{x^2p}{1-x}$ neglecting x in the denomination $K_P = x^2p$ or $x \propto \dfrac{1}{\sqrt{p}}$

67. (3)

The K_C for the reaction

$PCl_3(g) + Cl_2(g) \rightleftharpoons PCl_5(g)$

is the reciprocal of K_C of the reaction.

68. (4)

For 100g of mixture of N_2 and H_2, the NH_3 producted is 20g. For 340 g of mixture of N_2 and H_2, the NH_3 produced is :

69. (1)

N_2	$+\ 3H_2$	$\rightleftharpoons$	$2NH_3$	
2	0.6		–	Initial mole
$0.2-x$	$0.6-3x$		2x	Equilibrium mole.

$\therefore$ x = 0.08 mole of N_2 = 0.12; mole of H_2 = 0.36

mole of NH_3 = 0.16

Mole ratio considered as volume ratio because P and T are constant.

Initial mole = 0.8

Equilibrium mole = 0.12 + 0.36 + 0.16 = 0.64

$$\text{Ratio} = \frac{0.64}{0.8} = \frac{4}{5}$$

70. (1)

$PCl_5 \rightleftharpoons$	$PCl_3 +$	Cl_2	
0.5	2	2	Initial mole

Reaction quotient, $Q = \frac{2\times 2}{0.5\times 2} = 4$

So, it is in equilibrium. $[PCl_5] = \frac{0.5}{2} = 0.25M$

71. (2)

$CH_3COCH_3 \rightarrow$	CH_3-CH_3	$+\ CO$
100	–	–
$100-x$	x	x

$$\frac{x}{100+x} = \frac{1}{3} \text{ or } 3x = 100 + x \text{ or } x = 50$$

$\therefore \quad K_p = 50.$

72. (1)

73. (2)

$NH_2COOCH_4(s) \rightleftharpoons$	$2NH_3(g)+$	$CO_2(g)$	
–	2P	P	equi P

$K_p = 4p^3$ $\qquad K_p = (3P)^2 x$ or $x = \frac{4P}{9}$

Total pressure now $= 3P + \frac{4P}{9} = \frac{31P}{9}$

$\therefore \quad \text{Ratio} = \frac{31}{27}$

74. (2)

$A(s) \rightleftharpoons B + D \quad K_{P_1} = 400\ atm^2$

$C(s) \rightleftharpoons E + D \quad K_{P_2} = 1600\ atm^2$

$K_{P_1} = a(a+b) \qquad K_{P_2} = b(a+b)$

Total pressure =2(a+b)=89.4 atm.

75. (2)

$A + B \rightarrow C$

$a \quad 0.1 \quad - \quad$ initial

$a - x \quad 0.1 - x \quad x \quad$ equilibrium

$$K_C = \frac{C}{A \times B}$$

$$0.9 = \frac{0.06}{0.04(a - 0.06)} \Rightarrow a = 1.73M$$

76. (1) 77. (4) 78. (2) 79. (2) 80. (2) 81. (1) 82. (3)

83. (3)

Zn is extracted from its sulphide ore by roasting followed by carbon reduction Hg, Pb and Cu are extracted by self reduction from their sulphide ores.

84. (1) 85. (1) 86. (3) 87. (3) 88. (4) 89. (4) 90. (1)

BOTANY

91. (2)

92. (4)

Englemann used prism, cladophora and aerobic bacteria which proved action spectrum of photosynthesis.

93. (2)

94. (2)

95. (4)

In light reacton only ATP, $NADPH_2$ and O_2 are released.

96. (3)

97. (4)

In light reaction sugrar is not produced.

98. (3) 99. (4)

100. (3)

Calvin cycle operates in stroma.

101. (3) 102. (4)

103. (1)

PGA is the first stable product when CO_2 is added to RuPB.

104. (4)

105. (2)

Calvin cycle is common to C_3 and C_4-plants.

106. (2) 107. (1)

108. (4)

At higher light Intensity other factors becomes limiting.

109. (3)

110. (1)

OAA is the first stable product in C_4-cycle.

111. (3)

112. (4)

$6CO_2$, 12 $NADPH_2$ and 18 ATP are needed to operate 6-turns of calvin cycle.

113. (2)

114. (2)

Photosynthetic bacteria use H_2S So do not evolve O_2.

115. (1) 116. (1) 117. (1)

118. (1)

Maize is a C_4-plants.

119. (1) 120. (3) 121. (3) 122. (3) 123. (4) 124. (2)

125. (2) 126. (3) 127. (3) 128. (3) 129. (4) 130. (2)

131. (3) 132. (3) 133. (2) 134. (2) 135. (4)

ZOOLOGY

136. (4)

The axons transmit nerve impulses **away from** the cell body while the dendrites transmit impulses **towards** the cell bdoy.

137. (3)

In resting stage, the axonal membrane is comparatively more permeable to **potassium** ions and nearly impermeable to **sodium** ions.

138. (2)

139. (1)

140. (2)

141. (4) Piamater $\rightarrow$ Arachnoid $\rightarrow$ Duramater .

142. (2)

It is cerebellum. It is a part of hindbrain. It has very convoluted surface, in order to provided the additional space for more neurons.

143. (2)

The cerebrum wraps around a structre called thalamus, which is a major coordinating centre for sensory and motor signalling.

144. (2)

The inner parts of cerebral hemisphers and a group of associated deep structres like amygdala, hippocampus, etc. form a complex strucre called the limbic lobe or limbic system along with hypothalamus. It is involved in the regulation of sexual behaviour expression of emotional reactions (excitement, pleasure, rage and fear) and motivation.

145. (4)

The hypothalamus contains a number of centres which control body temperature, urge for eating and drinking. It also contains several groups of neurosecretory cells, which secretes hormones called hypothalamic hormones.

146. (4)

A locus of nerve tissue in the ventro-medial nucleus of the hypothalamus is known as satiety center and it controls the appetite.

147. (4)

148. (3)

It is a very narrow cavity in the brain. It is of the mid brain, also known as cerebral aqueduct.

149. (3)

A–afferent neurons; B–efferent neurons; C–CNS; D–effector.

150. (3)

The entire process of response to a peripheral nervous stimulation, that occurs involuntarily, without conscious efforts or through and requires involvement of a part of the central nervous system is caled a reflex action.

151. (4)	**152. (1)**	**153. (4)**	**154. (4)**	**155. (3)**	**156. (3)**	**157. (2)**
158. (2)	**159. (4)**	**160. (3)**	**161. (3)**	**162. (1)**	**163. (1)**	**164. (4)**
165. (1)	**166. (4)**	**167. (2)**				

168. (4)

Electrical signals–Nerve impulse

Bundles of nerve fibres–Nerves

Packing cells–Neuroglia

Ion Channel–Faciliated diffusion

169. (1)

170. (2)

Nervous tissue forms the nervous system in animals. It is ectodermal in origin.

171. (4)

A nerve consists of several bundles of nerve fibres commonly called **fasciculi.** each fasciculus is covered by a layer of connective tissue called **perineurim.** Inside fasciculus, each nerve fibre is covered by a layer of connective tissue called **endoneurium.** Similarly, each nerve is surrounded by a dense layer of connective tissue called **epinerium.**

172. (1)

I–ture, II–true, III–false, Iv–false. *Refer to Ans. No.96.*

173. (4)

Ependymal cells, are ciliated cells found in the central nervous system in the form of epithelium that lines the **cavities of CNS.**

174. (2)

These are 31 pairs of spinal nerves in human. These are classified into five goups :- cervical-8 pairs, thoracic-12 pairs, lumbar-5pairs, sacral-5 pairs, coccygeal-1 pair.

175. (3)

176. (2)

Pneumotaxic centre which can moderate the functions of the respiratory rhythm centre is present in pons region of the brain. Neural signal from this centre can reduce the duration of inspiration and there by alter the respiratory rate.

177. (1)

178. (3)

Bowman's glands, present in the lining of nasal epithelium, secretes mucous. All odoriferous materials gives off chemical particles, which are carried into the nose with the inhaled air and stimulates the nerve cells of the olfactory region when dissolved in this mucous.

179. (2)

180. (4)

The autonomous nervous system regulates the secretion of glands, whereas the glands do not regulate the nervous system.