ANSWER KEY

NEET (FINAL TRACK)

PART TEST-04 (XI)

PHYSICS

					- 2 - 2				
Q.1 (1)	Q.2 (2)	Q.3 (4)	Q.4 (2)	Q.5 (2)	Q.6 (2)	Q.7 (2)	Q.8 (3)	Q.9 (2)	Q.10 (1)
Q.11 (4)	Q.12 (1)	Q.13 (2)	Q.14 (1)	Q.15 (3)	Q.16 (4)	Q.17 (3)	Q.18 (4)	Q.19(2)	Q.20 (4)
Q.21(4)	Q.22 (3)	Q.23 (4)	Q.24(4)	Q.25 (3)	Q.26 (1)	Q.27 (1)	Q.28 (1)	Q.29 (1)	Q.30(2)
Q.31 (3)	Q.32 (3)	Q.33 (3)	Q.34 (3)	Q.35 (3)	Q.36 (2)	Q.37 (4)	Q.38 (2)	Q.39(2)	Q.40 (2)
Q.41 (4)	Q.42 (1)	Q.43 (2)	Q.44 (1)	Q.45 (3)	Q.46 (3)	Q.47 (1)	Q.48 (3)	Q.49 (2)	$\mathbf{Q.50}(3)$
CHEMISTRY									
Q.51 (3)	Q.52(2)	Q.53 (1)	Q.54 (4)	Q.55 (1)	Q.56 (4)	Q.57 (1)	Q.58 (4)	Q.59(2)	Q.60 (2)
Q.61 (4)	Q.62 (4)	Q.63 (3)	Q.64(2)	Q.65(1)	Q.66 (1)	Q.67 (1)	Q.68 (1)	Q.69 (1)	$\mathbf{Q.70}(1)$
Q.71(1)	$\mathbf{Q.72}(3)$	Q.73(3)	Q.74(1)	Q.75 (4)	Q.76 (3)	Q.77 (4)	Q.78 (4)	Q.79 (4)	Q.80 (4)
Q.81(2)	Q.82(3)	Q.83(4)	Q.84(3)	Q.85(1)	Q.86 (4)	Q.87(1)	Q.88 (4)	Q.89 (3)	Q.90(3)
Q.91 (4)	Q.92 (1)	Q.93(4)	Q.94 (4)	Q.95(2)	Q.96 (1)	Q.97 (1)	Q.98(2)	Q.99(2)	Q.100(2)
BIOLOGY -I									
Q.101 (3)	Q.102 (3)	Q.103(2)	Q.104 (4)	Q.105 (3)	Q.106 (2)	Q.107 (3)	Q.108 (4)	Q.109(2)	Q.110 (4)
Q.111 (4)	Q.112(3)	Q.113 (3)	Q.114 (3)	Q.115(2)	Q.116 (3)	Q.117(2)	Q.118 (3)	Q.119(2)	Q.120(4)
Q.121 (3)	Q.122 (4)	Q.123 (4)	Q.124(3)	Q.125(2)	Q.126 (1)	Q.127 (1)	Q.128(2)	Q.129(2)	Q.130(3)
Q.131 (3)	Q.132(2)	Q.133 (3)	Q.134 (3)	Q.135(2)	Q.136 (3)	Q.137(2)	Q.138(2)	Q.139 (1)	Q.140 (3)
Q.141 (2)	Q.142 (1)	Q.143 (3)	Q.144 (2)	Q.145 (4)	Q.146 (1)	Q.147 (3)	Q.148 (1)	Q.149 (4)	Q.150 (3)
BIOLOGY-II									
Q.151 (3)	Q.152(2)	Q.153 (4)	Q.154(2)	Q.155 (1)	Q.156 (3)	Q.157 (4)	Q.158 (4)	Q.159 (1)	Q.160 (1)
Q.161 (3)	Q.162(3)	Q.163(3)	Q.164 (1)	Q.165 (1)	Q.166 (3)	Q.167(2)	Q.168 (1)	Q.169(2)	Q.170(2)
Q.171(1)	Q.172(3)	Q.173 (3)	Q.174(3)	Q.175 (4)	Q.176 (4)	Q.177 (3)	Q.178(1)	Q.179 (3)	Q.180 (1)
0.181(2)	0.182(2)	0.183(3)	0.184(1)	O.185 (3)	O.186 (3)	0.187(4)	O.188 (3)	0.189(4)	O.190 (1)

SOLUTIONS

Q.196(1)

Q.195 (3)

PHYSICS SECTION-A

Q.193(1)

Q.194(1)

Q.1 (1)

Q.191(1)

Elongation in copper wire

Q.192 (2)

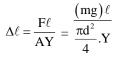
$$\Delta L = \frac{TL}{AY} = \frac{500 \times 4}{0.25 \times 10^{-4} \times 10^{11}}$$
$$= \frac{2000}{25 \times 10^{4}} = 0.8 \text{mm}$$

Elongation in steel wire

$$\Delta L = \frac{TL}{AY} = \frac{500 \times 2}{0.25 \times 10^{-4} \times 2 \times 10^{11}}$$
$$= \frac{100}{25 \times 2} \times 10^{-4} = 0.2 \text{ mm}$$

Total elongation = 0.8 + 0.2 = 1 mm Difference in elongation = 0.8 - 0.2 = 0.6mm

Q.2 (2)





$$=\frac{4\!\times\!8000\!\times\!10\!\times\!3.14}{\pi\!\left(0.25\right)^2\!\times\!2\!\times\!10^{11}}\!=\!0.026\,\text{mm}$$

Q.197 (1)

Q.3 (4)

$$DV = \frac{1}{2}.f.DL = \frac{1}{2}F.\frac{FL}{AY} = \frac{F^2L}{2AY}$$



Q.4 (2)

Due to surface tension shape of small liquid drop is spherical and pressure inside the drop is greater then outside.



Q.5 (2)

Ideal fluid is non-viscous.



Q.6 (2)

$$(R.D.)_{metal} = \frac{W_A}{W_A - W_W} = \frac{300}{300 - 270}$$



$$\boldsymbol{P}_{_{1}}+\frac{1}{2}\rho\boldsymbol{V}_{_{1}}^{^{2}}=\boldsymbol{P}_{_{2}}+\frac{1}{2}\rho\boldsymbol{V}_{_{2}}^{^{2}}$$



$$3.5 \times 10^5 + 0 = 3 \times 10^5 + \frac{1}{2} (10^3) \rho V_2^2$$

$$V_2 = 10 \text{ m/s}$$

Q.8 (3)





Av = constant

$$\pi R^2 V = n\pi r^2 v_1 \Longrightarrow v_1 = \frac{VR^2}{nr^2}$$



 \therefore Av = constant

$$P + \frac{1}{2}\rho v^2 = constant$$



$$v_1 > v_2 = P_1 > P_2$$



$$P_1 = P$$

$$\frac{F_1}{A_1} = \frac{F_2}{A_2} \Longrightarrow \frac{F_1}{r_1^2} = \frac{F_2}{r_2^2}$$

$$\Rightarrow F_1 = F_2 \frac{r_1^2}{r_2^2} = 1350 \times 9.8 \times \frac{5^2}{15^2}$$



Water droplets try to minimize their surface area due to surface tension.



So, the minimum surface is for sphere thats why they acquire spherical shape.

Q.12



When angle of contact is acute then liquid wets the solid.



Q.13

Work done = Surface tension \times (Surface area)

Total surface area of soap bubble

$$=40 \times 2 = 80 \text{ cm}^2$$

(Two surface)

Work done = $0.03 \times 80 \times 10^{-4} \,\mathrm{J}$ $=2.4\times10^{-4}$ J

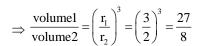


Q.14

$$P_{ex} = \frac{4T}{T}$$

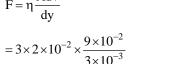
$$\frac{P_1}{P_2} = \frac{r_2}{r} = \frac{2}{3}$$





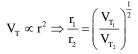
Q.15 (3)

$$F = \eta \frac{Adv}{dy}$$











$$V \propto r^3 \Rightarrow \frac{V_1}{V_2} = \left(\frac{r_1}{r_2}\right)^3 = \left(\frac{3}{2}\right)^3 = \frac{27}{8}$$

Q.17 (3)

When a copper ball is heated its size increases. As volume ∞(radius)³ and area ∝(radius)², so percentage increase will be largest in volume. Density will decrease with rise in temperature.



Q.18 (4)

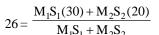
$$Q = mc_{ice}\Delta T + mL + mc_{w}\Delta t$$

= 10 × 0.5 × 10 + 10 × 80 + 10 × 1× 20
= 50 + 800 + 200 = 1050 cal



Q.19

$$T_{\rm mix} = \, \frac{M_1 S_1 T_1 + M_2 S_2 T_2}{M_1 S_1 + M_2 S_2} \label{eq:Tmix}$$



$$(26-20) M_2 S_2 = (30-26) M_1 S_1$$

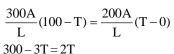
 $6M_2 S_2 = 4M_1 S_1$

$$\frac{S_1}{S_2} = \frac{6M_2}{4M_1} = \frac{6}{4} \times \frac{1}{2} = \frac{3}{4}$$

Q.20

$$\left(\frac{dQ}{dt}\right)_{t} = \left(\frac{dQ}{dt}\right)_{t}$$

 $T = 60^{\circ}C$





Q.21 $P \propto T^4 - T_0^4$ $\frac{60}{P_2} = \frac{(1000)^4 - (500)^4}{(1500)^4 - (500)^4}$ $P_{2} = 320 \text{ watt.}$



Q.22 $W = \frac{1}{2} \times (9 - 4) \times 10^{-3} \times (11 - 3) \times 10^{5}$ W = 2000 J



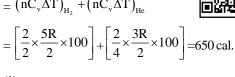
Q.23 (4) $AQ = 4 \times 10^3 \times 4.2 = 16800 J$ W = 4000 J $\Delta Q = \Delta U + W \Rightarrow \Delta U = 16800 - 4000$ $\Delta U = 12800 J = 12.8 kJ$



Q.24 $W = nRT \ \ell n \ \frac{V_t}{V_i}$ $W = nRT \ell n \frac{5}{2}$ $W' = nRT \, \ell n \, \frac{25}{10}$ $\frac{W}{W'} = \frac{\ell n 2.5}{\ell n 2.5}$ W' = W



Q.25 $H = H_2 + H_{Ha}$ $\equiv (nC_v\Delta T)_{H_2} + (nC_v\Delta T)_{He}$ $= \left[\frac{2}{2} \times \frac{5R}{2} \times 100 \right] + \left[\frac{2}{4} \times \frac{3R}{2} \times 100 \right] = 650 \text{ cal.}$

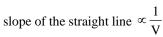


Q.26 In isochoric process V=constant and

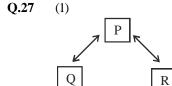


∴ P-T graph is a straight line passing through origin

But since $P = \left\lceil \frac{nR}{V} \right\rceil T$



 $\begin{array}{l} {(slope)}_{1,2} {<} {(slope)}_{3,4} \quad \therefore \quad V_2 {>} V_3 \\ Also \quad V_1 {=} V_2 \quad \text{and} \quad V_3 {=} V_4 \end{array}$



If P and Q are in thermal equilibrium and P and R also in thermal equilibrium. Then according to zeroth law Q and R will also be in thermal equilibrium. It leads to the concept of temperature.





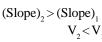
3

Q.29 $P = \frac{nRT}{V}$

$$P = \overline{V}$$

Slope = $\frac{nR}{V}$

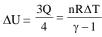






Q.30 $Q = \Delta U + W$

$$Q = \Delta U + \frac{Q}{4}$$





$$\frac{3Q}{4} = \frac{5}{2} nR\Delta T$$

$$n\Delta T = \frac{6Q}{20R}$$

Molar heat capacity, $C = \frac{Q}{n\Lambda T}$

$$C = \frac{Q}{6Q} \times 20R = \frac{10}{3}R$$

Q.31

$$V_{_{rms}} \propto \sqrt{T}$$

$$\frac{V_1}{V_2} = \sqrt{\frac{T_1}{T_2}}$$

$$\frac{V_1}{V_2} = \sqrt{\frac{400}{800}} = \frac{1}{\sqrt{2}}$$

$$\boldsymbol{V}_{_{2}}\mathbf{=\sqrt{2}}\boldsymbol{V}_{_{1}}$$



Q.32 (3)
$$K.E_{T} = 3 K.E_{127^{\circ}C}$$

$$\frac{3}{2}KT = 3\left(\frac{3}{2}K(400)\right)$$

$$T=1200\,\mathrm{K}$$

$$T(^{\circ}C) = 1200 - 273 = 927^{\circ}C$$



Q.33

Translational kinetic energy of n moles of monoatomic gas



$$= n \times \frac{3}{2}RT = \frac{3}{2}nRT.$$

Q.34

Internal energy of an ideal gas is a function of its temperature.



Q.35

$$Q = nC_{P} \Delta T$$

$$\Delta U = nC_{V} \Delta T$$

$$\frac{\Delta U}{Q} = \frac{nC_V \Delta T}{nC_V \Delta T} = \frac{C_V}{C_P}$$

$$\frac{\Delta U}{Q} = \frac{1}{\gamma} = \frac{5}{7}$$



SECTION-B

Q.36

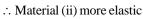
$$K = \frac{\Delta P}{\left(-\frac{\Delta V}{V}\right)} = \frac{h\rho g}{\left(-\frac{\Delta V}{V}\right)}$$



$$9.1 \times 10^8 = \frac{h \times 10^3 \times 10}{\left(\frac{0.1}{100}\right)} \Longrightarrow h = 91m$$



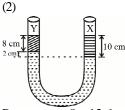
More linear limit = More elastic





⇒ If seperation between the ultimate tension strength and fracture point is less material will be more brittle. Material (ii) is more brittle than material (i)

Q.38





 $P_0 + \rho_v \times g \times 8 + 13.6 \times g \times 2$ $= P_0 + 3.36 \times g \times 10$ $\rho_{v} \times g \times 8 = (33.6 - 27.2)g$ $\rho_{v} = 0.8 \text{ g/cm}^{2}$



Let out side length is x then for floating w = Th

$$\begin{array}{c} V\delta_{_{B}}g = V_{_{in}}\delta_{_{2}}g \\ (L \times L \times L) \times \delta g = L \times L \times (L-x) \times 3\delta \times g \\ L = 3 \, (L-x) \end{array}$$



$$x = \frac{2L}{3}$$



Q.40

$$A_1V_1 = A_2V_2$$

$$(3A_2)V_1 = A_2V_2$$

$$V_2 = 3V_1 \Rightarrow V_2 = 3V$$

$$P + \rho g h \ + \frac{1}{2} \rho v^2 = const.$$



$$\Delta P = \frac{1}{2}\,\rho\,\left(V_2^2 - V_1^2\right)$$

$$\rho g \Delta h = \frac{1}{2} \rho \Big((3V)^2 - V^2 \Big)$$

$$\Delta h = \frac{\rho(8V^2)}{2\rho g}$$

$$\Delta h = \frac{4V^2}{g}$$

Q.41









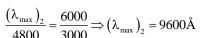


Latent heat of fusion is the quantity of heat required to convert unit mass of a substance from solid to liquid.



Q.43 (2)

$$\lambda_{max} \propto \frac{1}{T} \Rightarrow \frac{\left(\lambda_{max}\right)_2}{\left(\lambda_{max}\right)_1} = \frac{T_1}{T_2}$$



Q.44

In cyclic process $\Delta U = 0$

$$\begin{split} \Delta Q &= \Delta W \\ \Delta W &= W_{A \rightarrow B} + W_{B \rightarrow C} + W_{C \rightarrow A} \\ W_{B \rightarrow C} &= 0 \ (V = constant) \\ W_{A \rightarrow B} &= P(V_2 - V_1) \\ &= 10 \ (2 - 1) = 10 \ J \end{split}$$





$$3 = 10 + 0 + W_{C \to A}$$

$$W_{C \to A} = -7 J$$





Q.45

In isothermal process $\Delta T = 0 \implies \Delta U = 0$ $\Delta Q = \Delta U + \Delta W \Rightarrow \Delta Q = 0 + \Delta W$ $=\Delta W \Rightarrow A \rightarrow 3, 4$



In adiabatic process, $\Delta Q = 0 \Rightarrow B \rightarrow 2$

In isochoric process, $\Delta V = 0 \Rightarrow \Delta W = P\Delta V = 0$

$$\Rightarrow \Delta Q = \Delta W + \Delta U$$

$$\Rightarrow \Delta Q = 0 + \Delta U = \Delta U \Rightarrow C \rightarrow 1$$

In cyclic process,

$$=\Delta U = 0$$
, $\Delta Q = 0 + \Delta W = \Delta W \Rightarrow \Delta \rightarrow 3.4$

Q.46

$$\eta = \frac{1}{1 + \text{COP}} = \frac{1}{1 + 0.25} = \frac{100}{125} = \frac{4}{5}$$



$$\eta = \frac{W}{Q_h}$$

$$W = \eta Q_h$$

$$=\frac{4}{5}\times250=200J$$

Q.47



For an ideal gas in isobaric process

$$Q=nC_p\Delta T$$

$$W=P\Delta^{r}V$$

 $=nR\Delta T$

Required ratio =
$$\frac{W}{Q}$$

$$= \frac{nR\Delta T}{nC_p\Delta T}$$

$$\frac{R}{C_p} = \frac{R}{\frac{\gamma R}{(\gamma - 1)}} = \frac{2}{5}$$

[Since $\gamma = \frac{5}{3}$, for monatiomic gas]

Q.48



$$\gamma_{\text{Mono}} = \frac{5}{3}, \gamma_{\text{dia}} = \frac{7}{5}$$

 $\Rightarrow \gamma_{Mono} > \gamma_{dia}$ but degree of freedom is more for diatomic gas as compared to monoatomic gas.

PV = nRT

$$n_{O_2} = n_{H_2}$$

$$\frac{64}{32} = \frac{x}{2}$$

$$x = 4 gm$$



Internal energy of an moles of an ideal gas at temperature T is given by

$$U = \frac{f}{2} nRT[f = degrees of freedom]$$



$$U_1 = U_2$$

$$\begin{aligned} \mathbf{U}_{_{1}} &= \mathbf{U}_{_{2}} \\ \mathbf{f}_{_{1}} \mathbf{n}_{_{1}} \mathbf{T}_{_{1}} &= \mathbf{f}_{_{2}} \mathbf{n}_{_{2}} \mathbf{T}_{_{2}} \end{aligned}$$

$$\therefore \frac{n_1}{n_2} = \frac{f_2 T_2}{f_1 T_1} = \frac{3 \times 2T}{5 \times T} = \frac{6}{5}$$

Here, f_2 = degrees of freedom of He = 3 and $f_1 =$ degrees of freedom of $H_2 = 5$

CHEMISTRY SECTION-A

Q.51 (3)





4-ethyl -2-methyl cyclo Hexa-2, 5-diene carboxylic acid.

Q.52 (2)

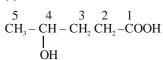


$$CH_3$$
 $C\equiv N$
 $C\equiv C$
 $C\equiv N$

2 sp² hybridisation carbon atom, 5π bonds.

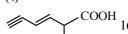
Q.53 (1)





4-hydroxy pentanoic acid

Q.54





and 4 π - bonds

Q.55



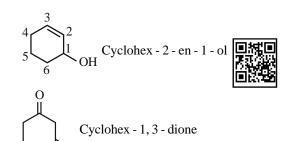


Q.56 (4)

5

$$\begin{array}{c}
5 \\
6 \\
1 \\
1
\end{array}$$
NO₂ 4 - ethyl - 1 - Fluoro - 2 - nitro benzene

Q.64



$$1 \xrightarrow{2} 4 \xrightarrow{6} 7 8$$
 6 - methyloctan - 3 - ol OH

Q.57 (1)



$$C_4H_6 \rightarrow \boxed{}$$
, \swarrow , \swarrow , \swarrow

Q.58 (4) The compound which having $\begin{array}{c}
c\\c\\d\end{array}$ where $\begin{bmatrix} a \neq b\\c \neq d \end{bmatrix}$ can show G.I



Q.59 (2) CH_{3}^{\oplus} and $C_{2}H_{5} - CH - C_{2}H_{5}$ is not chiral. CH_{3}^{\oplus}



Q.60 (2) $CH_3CH_2CH_2OH \text{ and } CH_3-CH-CH_3\\ | OH$



are position isomers of each other.

Q.61 (4) $CH_3OC_3H_7 \text{ and } C_2H_5 - O - C_2H_5 \text{ are}$ metamers of each other.



Q.62 (4)
Butanone is not isomeric with ether.
Both have different molecular formula.



Q.63 (3)
OH
OH
OH
OH

(2)

C-H

C-H

O

H

O

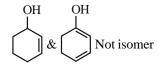
H

O

H



Q.65 (1) CH₃CH₂OH & CH₃ – O – CH₃ Functional isomers C₂H₅COOC₂H₅ & C₃H₇COOCH₄ metamers





Q.66 (1)



Carbanion does not show +H effect.

Q.67 (1)



Facts

Q.68 (1) Θ (Due to aromaticity)

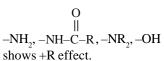


Q.69 (1)

Boiling point order → n-hexane > n-pentane > 2,2-dimethyl propane > propane



Q.70 (1)





Q.71 (1) Stability order $CH \equiv C^{\circ} > CH_2 = CH^{\circ} > (CH_3)_2 CH^{\circ} > (CH_3)_3 C$ **Q.72** (3)





C contains \rightarrow 3 σ bond + 1 lone pair So, sp³ hybridised.

Q.73 (3)
Nitro Benzene does not give friedel Crafts reaction.



Q.74 (1)

$$2CH_4 + O_2 \frac{Cu / 523K}{100 atm} \frac{2CH_3OH}{Methanol}$$



 $CH_{_{4}}+O_{_{2}}\,\frac{Mo_{_{2}}O_{_{3}}}{\Delta}\,\,\frac{HCHO}{Methanal}$

Q.75 (4)
Reactivity towards E.S.R. ∝ edensity in ring
Reactivity order → 4 > 1 > 3 > 2



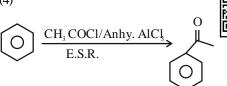
Q.76 (3)

Q.77 (4)



 $CH_{3}CH_{2}CH_{2}CI \xrightarrow{Anhy. \ AlCl_{3}} CH_{3}CH_{2}CH_{2}^{\oplus}$ $CH_{3}CH_{2}CH_{2}^{\oplus}$ $CH_{3}CH_{2}CH_{2}^{\oplus}$ $CH_{3}CH_{2}CH_{2}^{\oplus}$ $CH_{3}CH_{2}CH_{2}^{\oplus}$ $CH_{3}CH_{2}CH_{2}^{\oplus}$





Q.79 (4)



$$\begin{array}{c|cccc}
CH_2 - CH_2 & NaOH & CH = CH_2 \\
 & | & | & | & | & | \\
Br & Br & & | & | & | \\
 & & & (A) & CH \equiv CH
\end{array}$$

$$\begin{array}{c|cccc}
CH = CH_2 & & | & | & | & | \\
 & & | & | & | & | & | \\
 & & | & | & | & | & | \\
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Q.80 (4)



$$\begin{array}{c|c} & Cr_2O_3/Al_2O_3 \\ \hline \hline 773 \text{ K/10-20 atm} \end{array} \begin{array}{c} \hline \\ \\ \\ Benzene \end{array}$$

Q.81 (2)



$$CH_{3} \xrightarrow{CH_{3}-CH-CH_{2}} \xrightarrow{Zn \text{ dust}} CH_{3} \xrightarrow{CH_{3}-CH-CH=CH_{2}} \xrightarrow{A} CH_{3} \xrightarrow{CH_{3}-CH-CH=CH_{2}} (A)$$

$$CH_{3} \xrightarrow{CH_{3}} CH_{3} \xrightarrow{CH_{3}-C-CH_{2}CH_{3}} (A)$$

$$CH_{3} \xrightarrow{CH_{3}-C-CH_{2}CH_{3}} (A)$$

$$CH_{3} \xrightarrow{CH_{3}-C-CH_{2}CH_{3}} (A)$$

Q.82 (3)

$$CH_3$$
 CH_3
 CH_3

Q.83 (4)



$$CH_{3}CH_{2}COONa \xrightarrow{NaOH + CaO} CH_{3}-CH_{3}$$

$$\downarrow NaOH + CaO/\Delta$$

$$CH_{3}CH_{2} \xrightarrow{O} CH_{2} \xrightarrow{O} CH_{3}CH_{2} \xrightarrow{H_{2}O} CH_{3}-CH_{3}$$

Q.84 (3)



$$CH_{3} - C - CH + CH_{3} \xrightarrow{H^{\oplus}} CH_{3} - C = C < CH_{3}$$

$$CH_{3} OH \qquad (A)$$

$$CH_{3} - C - CH_{3} CH_{3} CH_{3}$$

$$CH_{3} OH \qquad (B)$$

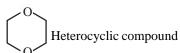
Q.85 (1

Cyclopentane does not give Baeyer's reagent test.



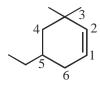
SECTION-B

Q.86 (4)





Q.87 (1)

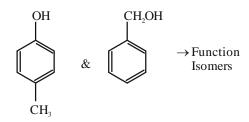




5-ethyl-3,3 dimethyl cyclohexene.

Q.88 (4)

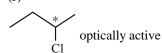




Q.89 (3)



Q.90 (3)





Q.91 (4)

a & b \rightarrow Chain isomers

b & c \rightarrow Chain isomers

c & a \rightarrow Position isomers





Facts

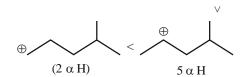
Q.93 (4)



C₆H₅-CH₃ shows hyper-conjugation.

Q.94 (4)





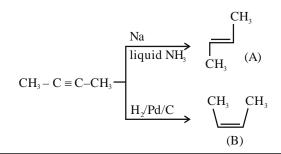
Q.95 (2)



-NH-CH₂, -Cl and -OH is ortho - para directing group.

Q.96 (1)





Q.97 (1)

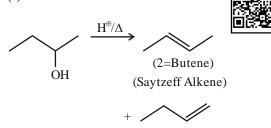
$$CH = CH \xrightarrow{\text{Red hot}} \underbrace{\begin{array}{c} \text{Red hot} \\ \text{Fe tube} \end{array}} \underbrace{\begin{array}{c} \text{Cl}_2(\text{excess}) \\ \text{UV} \\ \text{500 K} \end{array}}$$

Q.98 (2)



$$Me$$
 C=CH₂ BH_3/THR Me CH-CH₂OH

Q.99 (2)



(1-Butene) (Hofmann Alkene)

Q.100 (2)

$$Ph - C \equiv CH \xrightarrow{\text{dil.H}_2SO_4} Ph - C - CH_3$$

$$O$$
(A)

(Acetophenone)

BIOLOGY-I SECTION-A

Q.101 (3)

New NCERT Pg. No. 137

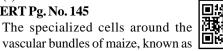


Chlorophyll a is the primary pigment involved in photosynthesis and appears bright or blue-green in color in chromatograms.

This pigment is crucial for the absorption of light, particularly in the blue and red regions of the spectrum, which drives the photosynthetic process.

Q.102 (3)

New NCERT Pg. No. 145



vascular bundles of maize, known as bundle sheath cells, have thick cell

walls and are packed with chloroplasts to perform C4

photosynthesis. However, these cell walls do not facilitate gaseous exchange; rather, they minimize it to concentrate CO₂ and reduce photorespiration, making statement (3) incorrect.

O.103 (2)

New NCERT Pg. No. 137



The absorption spectrum of Chlorophyll a closely matches the

action spectrum of photosynthesis, as it is the main pigment that converts light energy into chemical energy during photosynthesis. It absorbs light primarily in the blue and red regions, which are the most effective for driving photosynthesis.

Q.104 (4)

New NCERT Pg. No. 140



The photochemical phase of photosynthesis, also known as the light-dependent reactions,

involves light absorption, water splitting (photolysis), and oxygen release. The formation of ADP and NADP+ is not associated with this phase; rather, ATP and NADPH are produced.

Q.105 (3)

New NCERT Pg. No. 150



C4 plants are adapted to high light intensities and temperatures. At low temperatures, their rate of photosynthesis is generally lower compared to C3

plants because the enzymes involved in the C4 pathway are less active. Hence, the statement that C4 plants show a higher rate of photosynthesis at very low temperatures is incorrect.

Q.106 (2)

New NCERT Pg. No. 161



The F₀ component of ATP synthase is indeed an integral membrane protein complex,

but it forms a channel through which protons cross the inner membrane of mitochondria, not the outer membrane. This movement drives the synthesis of ATP from ADP and inorganic phosphate.

Q.107 (3)

New NCERT Pg. No. 137



Chlorophyll a absorbs light most efficiently in the red (around 680-700 nm) and blue-violet (around 430-450 nm) regions.

The peak absorption in the blue region coincides with the 400-500 nm range, which is why it is the correct answer.

0.108 (4)

New NCERT Pg. No. 146

In the C4 pathway, decarboxylation of malate occurs in the bundle sheath cells, releasing CO₂ for the Calvin cycle.



This mechanism is an adaptation to minimize photorespiration by concentrating CO, in these cells where the Calvin cycle takes place.

Q.109 (2)

New NCERT Pg. No. 143

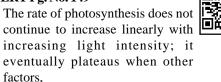
The regeneration of RuBP (Ribulose bisphosphate) is crucial for the uninterrupted continuation of the Calvin cycle.



Without RuBP, the cycle cannot proceed to fix more CO₂, which is essential for the synthesis of glucose.

Q.110 (4)

New NCERT Pg. No. 149





such as CO₂ concentration or temperature, become limiting. Therefore, the statement suggesting a linear relationship at higher light intensities is incorrect.

Q.111 (4)

New NCERT Pg. No. 147

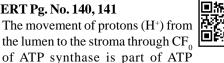
Assertion: Photorespiration occurs in C3 plants where CO₂ fixation occurs in mesophyll cells but is negligible in C4 plants.



Reason: C4 plants increase CO₂ concentration at the enzyme site, thereby minimizing photorespiration. Therefore, Assertion is false but the reason is true.

O.112 (3)

New NCERT Pg. No. 140, 141



synthesis and not the formation of the proton gradient.

The proton gradient is established by the other processes listed, so statement (3) is incorrect.

Q.113 (3)

New NCERT Pg. No. 142

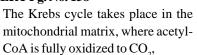
ATP synthesis in chloroplasts takes place on the stroma side of the thylakoid membrane as protons move from the thylakoid lumen back into the stroma.



driving the ATP synthase enzyme to produce ATP.

Q.114 (3)

New NCERT Pg. No. 158





and high-energy electron carriers NADH and FADH, are produced.

Q.115 (2)

New NCERT Pg. No. 159



In the Krebs cycle, the conversion of succinic acid to malic acid involves the oxidation of FAD to FADH₂, but it does not involve the synthesis of NADH.

Q.116 (3)

New NCERT Pg. No. 158



FAD⁺ is not directly required for

the activity of pyruvate dehydrogenase. This enzyme complex requires NAD+, Coenzyme A, and Mg+2 as cofactors to convert pyruvate into acetyl-CoA.

Q.117 (2)

New NCERT Pg. No. 164



Tripalmitin, a triglyceride,

undergoes complete oxidation to produce 102 molecules of CO₂. This number comes from the complete oxidation of each fatty acid chain and the glycerol backbone.

Q.118 (3)

New NCERT Pg. No. 158



During the conversion of

3-phosphoglyceraldehyde 1,3-bisphosphoglycerate (BPGA) in glycolysis, two redox equivalents (NAD+ to NADH) are removed. This step is crucial for maintaining the balance of NADH in

Q.119 (2)

New NCERT Pg. No. 161

the cell.



Complex V of the mitochondrial

electron transport system, also known as ATP synthase, is responsible for producing ATP from ADP and inorganic phosphate by utilizing the proton gradient established by the previous complexes.

Q.120 (4)

New NCERT Pg. No. 158



Hexokinase catalyzes the first

irreversible step in glycolysis, converting Glucose to Glucose-6-phosphate, which commits the glucose molecule to glycolysis.

Q.121 (3)

New NCERT Pg. No. 159

One turn of the Krebs cycle

generates 12 ATP equivalents, considering the production of NADH, FADH₂, and GTP. The complete oxidation of one glucose molecule through the Krebs cycle contributes to the overall energy yield of cellular respiration.

Q.122 (4)

New NCERT Pg. No. 163



The Respiratory Quotient (RQ) is calculated as the ratio of the volume of CO_2 evolved to the volume of O_2 consumed during respiration. This ratio provides insights into the type of substrate being metabolized.

Q.123 (4)

New NCERT Pg. No. 156



Glucose is phosphorylated to glucose

-6-phosphate by the enzyme hexokinase, not an isomerase. This phosphorylation is the first step of glycolysis and is essential for trapping glucose within the cell.

Q.124 (3)

New NCERT Pg. No. 160



In the electron transport system,

Complex I is NADH dehydrogenase, and Complex IV is cytochrome c oxidase. These complexes play critical roles in the transfer of electrons and the establishment of the proton gradient.

Q.125 (2)

New NCERT Pg. No. 162



During fermentation, NADH oxidation occurs slowly due to the low efficiency of ATP production. In contrast, during aerobic respiration, NADH oxidation is very vigorous, driving the efficient production of ATP.

Q.126 (1)

New NCERT Pg. No. 163



Assertion: When carbohydrates

are used as a respiratory substrate and completely oxidized, the RQ will be 1.

Reason: Complete oxidation of carbohydrates results in equal amounts of CO₂ evolved and O₂ consumed. Both assertion and reason are true, and the reason correctly explains the assertion.

Q.127 (1)

New NCERT Pg. No. 156



Assertion: ATP is used at two steps in glycolysis.

Reason: The first ATP is used in converting glucose into glucose-6-phosphate, and the second ATP is used

in converting fructose-6-phosphate into fructose-1,6-diphosphate.

Both statements are true, and the reason correctly explains the assertion.

Q.128 (2)

New NCERT Pg. No. 175, 176, 177



Auxin is present in root and shoot apices (iv).

Cytokinin promotes adventitious shoot formation (iii). Gibberellin increases the length of grape stalks (i). Abscisic acid induces dormancy (ii).

Q.129 (2)

New NCERT Pg. No. 171



Absolute growth rate refers to the total growth per unit time, providing a measure of the overall increase in size or biomass over a specific period.

Q.130 (3)

New NCERT Pg. No. 170



In the equation $W_1 = W_0 e^{rt}$, r is the

exponential growth rate constant and is referred to as the efficiency index. r is the relative growth rate and is also the measure of the ability of the plant to produce new plant material, referred to as efficiency index.

Q.131 (3)

New NCERT Pg. No. 175



Hint: Ethylene is a gaseous plant hormone.

Cousins discovered and confirmed that release of ethylene, a volatile substance, from ripened oranges hastened the ripening of unripe bananas kept nearby. Later on this volatile substance was identified as ethylene.

Q.132 (2)

New NCERT Pg. No. 177



Assertion: Ethylene breaks seed and

bud dormancy and initiates germination in peanut seeds.

Reason: Ethylene promotes rapid internode elongation/petiole elongation in deep-water rice plants.

While both statements are true, the reason does not directly explain the assertion.

O.133 (3)

New NCERT Pg. No. 177



Ethephon is a plant growth

regulator that releases ethylene and is used to promote female flower development in cucumbers, leading to increased yield. **Q.134** (3)

New NCERT Pg. No. 176, 177

Ethephon is a fruit ripener (iv).

2, 4-D is a herbicide (iii).

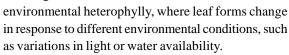
GA3 is a bolting agent (ii).

Abscisic acid is a stress hormone (i).

Q.135 (2)

New NCERT Pg. No. 173

The diagrams illustrate



SECTION-B

Q.136 (3)

New NCERT Pg. No. 145

In Kranz anatomy characteristic

of C4 plants, the bundle sheath cells have thick walls, no intercellular spaces, and are packed with chloroplasts to efficiently perform the Calvin cycle and reduce photorespiration.

Q.137 (2)

New NCERT Pg. No. 143, 144

The Calvin cycle occur in all

photosynthetic plants. The primary acceptor of CO₂ is 5 carbon compound RuBP which accepts CO₂ to form PGA. This step does not require ATP or NADPH₂.

Q.138 (2)

New NCERT Pg. No. 147

The oxygenation activity of

RuBisCO in photorespiration leads to the formation of one molecule of 3-phosphoglycerate (a 3-C compound) and one molecule of 2-phosphoglycolate (a 2-C compound).

Q.139 (1)

New NCERT Pg. No. 139

Water (H₂O) is the external electron

donor in non-cyclic photophosphorylation. It is split during photolysis, providing electrons to PS-II and releasing oxygen as a by-product.

Q.140 (3)

New NCERT Pg. No. 135

Cornelius van Niel was the first to

propose that in photosynthesis, hydrogen from a suitable oxidizable compound reduces CO, to carbohydrates. His work on green sulfur bacteria provided evidence for this mechanism.



New NCERT Pg. No. 160

Oxygen is the final hydrogen (and electron) acceptor in the mitochondrial electron transport chain, forming water as the end product.

Q.142

New NCERT Pg. No. 157

Assertion: There is no net

production of NADH+H+ during anaerobic respiration

in yeast cells.

Reason: During alcohol fermentation, acetaldehyde is reduced to ethanol by using NADH+H+, which was produced during glycolysis. Both statements are true, and the reason correctly explains the assertion.

Q.143 (3)

New NCERT Pg. No. 159

During the conversion of Succinyl

CoA to Succinic acid in the TCA cycle, GTP (which can be converted to ATP) is synthesized.

Q.144 (2)

New NCERT Pg. No. 154

Energy from the respiratory

substrates is not released in a single step but through a series of controlled, enzyme-catalyzed reactions. Statement (2) is incorrect.

Q.145 (4)

New NCERT Pg. No. 160

Complex V (ATP synthase) does

not pump protons; instead, it allows protons to flow back into the mitochondrial matrix to synthesize ATP. The other complexes (I, III, IV) act as proton pumps.

Q.146 (1)

New NCERT Pg. No. 175

Indole-3-acetic acid (IAA) is

used to prevent the abscission of young organs like leaves and fruits, thereby preventing their premature fall.

Q.147 (3)

New NCERT Pg. No. 175

Abscisic acid (ABA) is also known

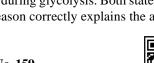
as Inhibitor-B, abscission II, and dormin, all of which refer to its role in inducing dormancy and abscission.

Q.148 (1)

New NCERT Pg. No. 177

Ethylene is associated with

climacteric respiration, a phase of increased respiration rate during the ripening of climactic fruits such as bananas and tomatoes.













O.149 (4)

New NCERT Pg. No. 175

Indole-3-acetic acid (IAA) and

Indole-3-butyric acid (IBA) are naturally occurring auxins, while Naphthaleneacetic acid (NAA) and 2,4-Dichlorophenoxyacetic acid (2,4-D) are synthetic auxins.

Q.150 (3)

New NCERT Pg. No. 176



2,4-D is a selective herbicide that

kills dicot weeds without harming monocot plants, making it useful for creating weed-free lawns.

BIOLOGY-II SECTION-A

Q.151 (3)

New NCERT Pg. No. 150



At low light intensities, both C₃

and C₄ plants show increase in the rates of photosynthesis.

The C_4 plants show saturation at about 360 μ lL⁻¹ while C₃ responds to increased CO₂ concentration and saturation is seen only beyond 450 µlL⁻¹.

Q.152 (2)

New NCERT Pg. No. 140



The chemiosmotic process for ATP synthesis requires a membrane, a proton gradient, and

a proton pump. An electron gradient is not directly required for ATP synthesis; instead, it is the proton gradient that drives the process. Therefore, (2) is incorrect.

Q.153 (4)

New NCERT Pg. No. 146



The first stable product of CO₂

fixation in the C4 pathway (as in maize) is oxaloacetic acid (OAA), a four-carbon compound, which is later converted into malate or aspartate before entering the Calvin cycle.

Q.154 (2)

New NCERT Pg. No. 138



The light reaction of

photosynthesis produces oxygen, ATP, and NADPH but not carbon dioxide. CO, is actually consumed during the Calvin cycle, which occurs after the light reaction.

Q.155 (1)

New NCERT Pg. No. 134



Jan Ingenhousz demonstrated that

sunlight is essential for the process of photosynthesis by showing that plants release oxygen in the presence of light. He used bell Jar experiments to prove this.

Q.156 (3)

New NCERT Pg. No. 140



Cyclic photophosphorylation takes place to balance the ATP/NADPH ratio needed for the Calvin cycle, and Stroma lamellae only have PS-I, lacking PS-II and NADP reductase. Therefore, statements A and D are correct.

Q.157 (4)

New NCERT Pg. No. 141



Assertion is incorrect because

in chemiosmotic hypothesis there is movement of electrons due to which there is transport of protons across the membrane.

Reason is correct as the primary acceptor of electron is located towards outer side of membrane.

Q.158 (4)

New NCERT Pg. No. 140, 144, 145



Cyclic photophosphorylation involves only PS-I (A).

Non-cyclic photophosphorylation involves both PS-I and PS-II (B).

C4 cycle involves the first CO₂ fixation by PEPcase

C3 cycle involves the first CO₂ fixation by RuBisCO

Therefore, the correct matching is A-B-D-C.

Q.159 (1)

New NCERT Pg. No. 144



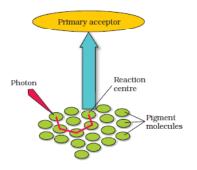
During the regeneration phase of the Calvin cycle, 6 ATP molecules are used to regenerate RuBP from glyceraldehyde-3-phosphate (G3P) for every glucose molecule synthesized.

Q.160 (1)

New NCERT Pg. No. 138



In a photosystem, A represents the reaction center, where the primary photochemical reaction occurs, and B represents the pigment molecules that capture light energy and transfer it to the reaction center.



O.161 (3)

New NCERT Pg. No. 142



The energy released during the

breakdown of the proton gradient causes a conformational change in the CF₁ component of ATP synthase, leading to the synthesis of ATP from ADP and inorganic phosphate.

Q.162 (3)

New NCERT Pg. No. 135



To form six molecules of glucose,

36 CO₂ molecules are required. This calculation comes from the fact that each molecule of glucose requires six CO, molecules.

Q.163 (3)

New NCERT Pg. No. 136



The membranous system of grana

in chloroplasts is responsible for trapping light energy and converting it into chemical energy in the form of ATP, which is then used in the Calvin cycle to synthesize sugars.

Q.164 (1)

New NCERT Pg. No. 157



Statement 1 is incorrect because

lactic acid formation occurs in anaerobic conditions when oxygen is insufficient, not when it is adequate. The other statements correctly describe aspects of anaerobic respiration and fermentation.

Q.165 (1)

New NCERT Pg. No. 155



Glycolysis is the process where

glucose undergoes partial oxidation to form two molecules of pyruvic acid. This process occurs in the cytoplasm and is the first step in both aerobic and anaerobic respiration.

Q.166 (3)

New NCERT Pg. No. 159



The first step of aerobic respiration (glycolysis) occurs in the cytosol, while the second step (Krebs cycle) occurs in the mitochondrial matrix. Therefore, statement (3) is incorrect.

Q.167 (2)

New NCERT Pg. No. 159



During the conversion of succinic

acid to malic acid in the Krebs cycle, FAD+ is reduced to FADH,, and this step does not involve the production of NADH.

Q.168 (1)

New NCERT Pg. No. 157



Fermentation takes place under anaerobic conditions in many prokaryotes and unicellular eukaryotes.

In animal cells also, like muscles during exercise, when oxygen is inadequate for cellular respiration pyruvic acid is reduced to lactic acid by lactate dehydrogenase.

0.169 (2)

New NCERT Pg. No. 162



The carbon skeletons produced during respiration are used as precursors for the biosynthesis of various biomolecules, including amino acids, nucleotides, and lipids.

Q.170 (2)

New NCERT Pg. No. 157



Assertion: The incomplete

oxidation of glucose is achieved under anaerobic conditions where pyruvic acid is converted to CO,

Reason: Enzymes like pyruvic acid decarboxylase and alcohol dehydrogenase catalyze the reactions in fermentation.

Both statements are true, but the reason do not explains the assertion.

O.171 (1)

New NCERT Pg. No. 156, 158, 159



Glycolysis occurs in the cytoplasm (D).

Pyruvate to Acetyl CoA occurs in the mitochondrial matrix (C).

Electron Transport System is located in the inner mitochondrial membrane (A).

ATP synthesis occurs at the F₁ headpiece of Complex V of ETS (B).

Q.172 (3)

New NCERT Pg. No. 163



Fatty acids are first broken down into Acetyl Co-A via beta-oxidation before entering the Krebs cycle for further oxidation to generate energy.

Q.173 (3)

New NCERT Pg. No. 157



In anaerobic respiration, the oxidation of NADH is not vigorous; it is limited due to the absence of an electron transport chain. Therefore, statement (3) is incorrect.

Q.174 (3)

New NCERT Pg. No. 160



Cytochrome c acts as a mobile

electron carrier, transferring electrons between Complex III and Complex IV in the electron transport chain during aerobic respiration.

Q.175 (4)

New NCERT Pg. No. 158



Before entering the TCA cycle,

pyruvate undergoes oxidative decarboxylation to form Acetyl CoA. This process involves the removal of a carboxyl group, releasing CO₂.

Q.176 (4)

New NCERT Page 160



Electrons from NADH produced in the mitochondrial matrix during the TCA cycle are oxidised by complex I, and electrons are then transferred to ubiquinone.

Q.177 (3)

New NCERT Pg. No. 168, 170



In geometric growth, both daughter cells continue to divide, leading to exponential growth. The statement that only one daughter cell divides

while the other differentiates is incorrect.

Q.178 (1)

New NCERT Pg. No. 177



Abscisic acid (ABA) helps

seeds withstand desiccation and other unfavorable environmental conditions by inducing dormancy. It is also known as stress hormone.

O.179 (3)

New NCERT Pg. No. 177



Ethylene influences the swelling of the axis, horizontal growth of seedlings, and the formation of an apical hook in dicot plants called Triple

Q.180 (1)

New NCERT Pg. No. 174

response.



The full form of IAA is Indole-3-acetic

acid, a naturally occurring auxin that plays a critical role in plant growth and development.

Q.181 (2)

New NCERT Pg. No. 173

Q.182 (2)

New NCERT Pg. No. 167



Assertion: Differentiation in plants

is open.

Reason: Meristems continuously divide and add new

cells to the plant body.

Both statements are true, and the reason correctly explains the assertion.

Q.183 (3)

New NCERT Pg. No. 177



Cytokinins (CK) promote nutrient mobilization, delay leaf senescence, and help overcome apical dominance by promoting lateral bud growth.

Q.184 (1)

New NCERT Pg. No. 175



The removal of shoot tips, known as decapicitation, promotes the growth of lateral buds and is widely applied in tea plantations and hedge making to encourage bushy growth.

Q.185 (3)

New NCERT Pg. No. 174, 175



• F.W. Went (ii) discovered the Avena (oat) coleoptile test for auxins.

- E. Kurosawa (iv) discovered the rice "bakanae" disease caused by gibberellins.
- Charles & Francis Darwin (i) studied the phototropic response in canary grass.
- F. Skoog (iii) worked with tobacco to study the effects of cytokinins.

SECTION-B

O.186 (3)

New NCERT Pg. No. 146



In the Hatch and Slack pathway (C4 cycle), RuBP is the primary CO₂ acceptor in the bundle sheath cells, where the Calvin cycle takes place after initial CO₂ fixation in the mesophyll cells.

Q.187 (4)

New NCERT Pg. No. 143



Statement I is correct: RuBisCO can

function as both a carboxylase and oxygenase, but not simultaneously.

Statement II is incorrect: the active site of RuBisCO can bind to either CO₂ or O₂, but not both at the same time.

Q.188 (3)

New NCERT Pg. No. 137



Paper chromatography is used to separate the different pigments present in the leaves of green plants based on their solubility and affinity to the solvent and paper.

Q.189 (4)

New NCERT Pg. No. 134



Jan Ingenhousz demonstrated that

the green parts of plants release oxygen in the presence of light, providing the first evidence that light is essential for the process of photosynthesis.

Q.190 (1)

New NCERT Pg. No. 147



Photorespiration consumes oxygen, releases CO₂, and does not produce ATP or NADPH. It occurs in the chloroplasts, peroxisomes, and mitochondria of C3 plants, not in all photosynthetic plants.

Q.191 (1)

New NCERT Pg. No. 162



Statement I: The respiratory

pathway is amphibolic, meaning it involves both catabolic and anabolic processes.

Statement II: Respiratory intermediates like acetyl CoA serve as links between catabolic and anabolic pathways. Both statements are correct.

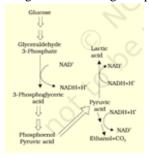
O.192 (2)

New NCERT Pg. No. 158



NADH + H⁺ is involved in the

reduction of pyruvate to lactic acid during fermentation. PEP is involved in glycolysis, and NAD⁺ is regenerated during this process.



Q.193 (1)

New NCERT Pg. No. 156



During glycolysis, NADH + H⁺ is

formed when 3-phosphoglyceraldehyde (PGAL) is oxidized to 1,3-bisphosphoglycerate (BPGA).

Q.194 (1)

New NCERT Pg. No. 155



Statement I: All living organisms

have the enzymatic machinery to oxidize glucose without oxygen.

Statement II: Glycolysis is a common pathway for both aerobic and anaerobic respiration. Both statements are correct.

Q.195 (3)

New NCERT Pg. No. 159



One turn of the Krebs cycle results in the production of 2 CO₂, 3 NADH, 3 H⁺, 1 FADH₂, and 1 ATP (or GTP).

Q.196 (1)

New NCERT Pg. No. 170



Arithmetic growth is represented by a straight-line graph, indicating a constant rate of growth over time, with equal increments of growth during each time period.

Q.197 (1)

New NCERT Pg. No. 168



Maize root tip (i) is measured by the number of cells.

Watermelon (ii) is measured by the size of cells.

Pollen tube (iii) is measured by length.

Dorsiventral leaf (iv) is measured by surface area.

Q.198 (4)

New NCERT Pg. No. 176



Zeatin is a naturally occurring cytokinin found in plants, while kinetin is a synthetic cytokinin, first isolated from herring sperm DNA.

Q.199 (2)

New NCERT Pg. No. 176



Gibberellins (GA) are involved in the elongation and improvement of the shape of apple fruit, promoting cell elongation and division.

Q.200 (4)

New NCERT Pg. No. 168



Cell type is not a basis for the measurement of growth. Growth is typically measured in terms of dry weight, cell number, volume, or other quantitative parameters.