

ANSWER KEY
NEET (FINAL TRACK)
PART TEST-10 (XII)

PHYSICS

Q.1 (1)	Q.2 (2)	Q.3 (4)	Q.4 (2)	Q.5 (2)	Q.6 (3)	Q.7 (2)	Q.8 (3)	Q.9 (2)	Q.10 (3)
Q.11 (2)	Q.12 (1)	Q.13 (4)	Q.14 (2)	Q.15 (1)	Q.16 (3)	Q.17 (2)	Q.18 (1)	Q.19 (2)	Q.20 (2)
Q.21 (3)	Q.22 (2)	Q.23 (3)	Q.24 (2)	Q.25 (2)	Q.26 (4)	Q.27 (4)	Q.28 (3)	Q.29 (1)	Q.30 (4)
Q.31 (1)	Q.32 (3)	Q.33 (3)	Q.34 (3)	Q.35 (3)	Q.36 (1)	Q.37 (2)	Q.38 (2)	Q.39 (4)	Q.40 (2)
Q.41 (1)	Q.42 (3)	Q.43 (3)	Q.44 (2)	Q.45 (4)	Q.46 (1)	Q.47 (2)	Q.48 (3)	Q.49 (4)	Q.50 (4)

CHEMISTRY

Q.51 (3)	Q.52 (1)	Q.53 (3)	Q.54 (3)	Q.55 (2)	Q.56 (4)	Q.57 (2)	Q.58 (3)	Q.59 (1)	Q.60 (1)
Q.61 (2)	Q.62 (3)	Q.63 (4)	Q.64 (3)	Q.65 (1)	Q.66 (1)	Q.67 (4)	Q.68 (3)	Q.69 (2)	Q.70 (4)
Q.71 (3)	Q.72 (3)	Q.73 (1)	Q.74 (2)	Q.75 (3)	Q.76 (3)	Q.77 (4)	Q.78 (4)	Q.79 (2)	Q.80 (1)
Q.81 (1)	Q.82 (1)	Q.83 (3)	Q.84 (4)	Q.85 (3)	Q.86 (4)	Q.87 (2)	Q.88 (2)	Q.89 (1)	Q.90 (1)
Q.91 (2)	Q.92 (2)	Q.93 (3)	Q.94 (2)	Q.95 (3)	Q.96 (4)	Q.97 (1)	Q.98 (2)	Q.99 (2)	Q.100 (3)

BIOLOGY-I

Q.101 (1)	Q.102 (3)	Q.103 (3)	Q.104 (2)	Q.105 (3)	Q.106 (2)	Q.107 (3)	Q.108 (4)	Q.109 (3)	Q.110 (2)
Q.111 (4)	Q.112 (2)	Q.113 (3)	Q.114 (4)	Q.115 (2)	Q.116 (2)	Q.135 (2)	Q.118 (1)	Q.119 (3)	Q.120 (1)
Q.121 (4)	Q.122 (2)	Q.123 (1)	Q.124 (2)	Q.125 (2)	Q.126 (3)	Q.127 (1)	Q.128 (3)	Q.129 (4)	Q.130 (4)
Q.131 (3)	Q.132 (4)	Q.133 (1)	Q.134 (1)	Q.135 (3)	Q.136 (4)	Q.137 (2)	Q.138 (3)	Q.139 (2)	Q.140 (1)
Q.141 (2)	Q.142 (3)	Q.143 (2)	Q.144 (4)	Q.145 (1)	Q.146 (2)	Q.147 (2)	Q.148 (3)	Q.149 (2)	Q.150 (3)

BIOLOGY-II

Q.151 (2)	Q.152 (4)	Q.153 (3)	Q.154 (2)	Q.155 (2)	Q.156 (2)	Q.157 (2)	Q.158 (1)	Q.159 (3)	Q.160 (4)
Q.161 (2)	Q.162 (4)	Q.163 (4)	Q.164 (4)	Q.165 (1)	Q.166 (1)	Q.167 (4)	Q.168 (1)	Q.169 (3)	Q.170 (4)
Q.171 (4)	Q.172 (3)	Q.173 (2)	Q.174 (3)	Q.175 (1)	Q.176 (4)	Q.177 (3)	Q.178 (1)	Q.179 (2)	Q.180 (2)
Q.181 (1)	Q.182 (3)	Q.183 (1)	Q.184 (1)	Q.185 (1)	Q.186 (3)	Q.187 (2)	Q.188 (4)	Q.189 (2)	Q.190 (3)
Q.191 (2)	Q.192 (4)	Q.193 (1)	Q.194 (1)	Q.195 (1)	Q.196 (2)	Q.197 (4)	Q.198 (3)	Q.199 (3)	Q.200 (1)

PHYSICS
SECTION-A

Q.1 (1)

Work function is the minimum energy required by electron to be ejected out when no collision takes place. When electron collides with other electrons, then energy required to eject electron is more than work function. Each collision involves some loss of kinetic energy of electrons.



Q.2 (2)

$$\phi = \frac{hv}{e} = \frac{6.6 \times 10^{-34} \times 3 \times 10^{14}}{1.6 \times 10^{-19}} \text{ eV}$$

$$\phi = 1.24 \text{ eV}$$



Q.3 (4)

$$E = \phi_0 + K_{\text{max}}$$

$$E = \frac{12400}{\lambda(\text{Å})} \text{ eV}$$



$$E = \frac{12400}{4000} = 3.1 \text{ eV}$$

$$\phi_0 = 2.5 \text{ eV}$$

$$K_{\text{max}} = E - \phi_0 = 0.6 \text{ eV}$$

Q.4 (2)

$$F_R = mg$$

$$P/C = mg$$

$$P = mgC$$

$$= 10 \times 10^{-3} \times 10 \times 3 \times 10^8$$

$$= 3 \times 10^7 \text{ W}$$



Q.5 (2)

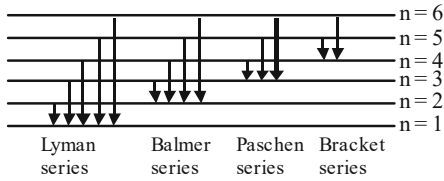
$$eV_s = \frac{hc}{\lambda} - \phi_0 \text{ or } V_s = \frac{hc}{e\lambda} - \frac{\phi_0}{e}$$

$$V_s = \frac{6.62 \times 10^{-34} \times 3 \times 10^8}{1.6 \times 10^{-19} \times 2000 \times 10^{-10}} - 4.21$$

$$\text{or } V_s = 6.21 - 4.21 = 2 \text{ V}$$



Q.6 (3)



Q.7 (2)

$$\Delta E = E_3 - E_2$$

$$= -13.6 \left(\frac{1}{9} - \frac{1}{4} \right) = -13.6 \left(\frac{-5}{9 \times 4} \right) = 1.89 \text{ eV}$$



Q.8 (3)

$$\text{Velocity, } v \propto \frac{z}{n} \Rightarrow \frac{V_1}{V_2} = \frac{n_2}{n_1} = \frac{1}{4}$$



$$\Rightarrow \frac{n_1}{n_2} = \frac{4}{1}$$

Q.9 (2)

$$\text{Energy of photon absorbed (E)} = E_2 - E_1$$

$$= -\frac{13.6}{(3)^2} + \frac{13.6}{(1)^2}$$

$$= -1.51 + 13.6 = 12.09 \text{ eV}$$

$$\lambda = \frac{hc}{E_2 - E_1} = \frac{12400}{12.09} \text{ \AA}$$

$$\lambda = 1026 \text{ \AA}$$



Q.10 (3)

$$E_1 = -13.6 \text{ eV}$$

$$E_2 = -\frac{13.6}{4} = -3.4 \text{ eV}$$

\Rightarrow Energy required for E_2 to ∞ is 3.4 eV



Q.11 (2)

$$E_1 = -13.6 \text{ eV}$$

$$E_2 = -3.4 \text{ eV}$$

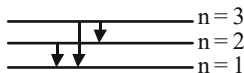
$$E_3 = -1.5 \text{ eV}$$

$$\text{Energy of electron} = (-13.6 + 12.1) \text{ eV}$$

$$= -1.5 \text{ eV}$$

\Rightarrow electron is excited to $n=3$

\Rightarrow No. of spectral lines = ${}^n C_2 = {}^3 C_2 = 3$

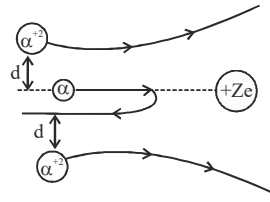


Q.12 (1)

For maximum wavelength, the energy gap should be minimum, which is possible in transition from $n=4$ to $n=3$, i.e. line 6.



Q.13 (4)



d is impact parameter



Q.14 (2)

$$\text{Radius of orbit, } R_n \propto \frac{n^2}{z}$$



$$\Rightarrow \frac{R_1}{R_3} = \left(\frac{n_1}{n_3} \right)^2 = \left(\frac{1}{3} \right)^2 = \frac{1}{9}$$

$$\Rightarrow R_3 = 9R_1 = 9 \times 5.29 \times 10^{-11} \text{ m} = 47.61 \times 10^{-11} \text{ m}$$

Q.15 (1)

Due to high temperature, nuclei got sufficient thermal kinetic energy to overcome electrostatic repulsion and they are able to come closer and fuse.



Q.16 (3)

Radius of nucleus, $R = R_0 A^{\frac{1}{3}}$
 where $R_0 = \text{constant}$
 $A = \text{mass number}$



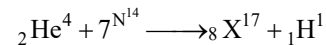
$$\Rightarrow \frac{R_1}{R_2} = \left(\frac{A_1}{A_2} \right)^{\frac{1}{3}} \Rightarrow \frac{2R}{R} = \left(\frac{A_1}{9} \right)^{\frac{1}{3}}$$

$$\Rightarrow (2)^3 = \frac{A_1}{9}$$

$$\Rightarrow A_1 = 72$$

Q.17 (2)

Balancing nuclear reaction results,



$$2 + 7 = A + 1 \Rightarrow A = 8$$

$$4 + 14 = z + 1 \Rightarrow z = 17$$



Q.18 (1)

Practical mass of nuclei is always less than theoretical mass of nuclei. This difference in mass is called mass defect. Nuclear fusion takes place at very high temperature, due to this nuclei absorbs high amount of thermal energy. Nuclear fission is breakdown of heavy nucleus into lighter ones.



Q.19 (2)

A fusion reaction is initiated by high temperature. Fusion reactions require high temperatures so that the nuclei move rapidly, increasing their kinetic energy. This allows the nuclei to overcome their repulsion and come together.



Q.20 (2)

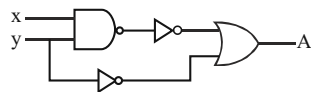
Rated voltage across diode = 0.5 V
 Rated power of diode = 100 mw
 $\therefore P = V \times I$
 $100 \times 10^{-3} = 0.5 \times I$



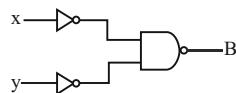
$$I = \frac{10^{-1}}{0.5} = 0.2 \text{ Amp}$$

$$\therefore R = \frac{\Delta V}{I} = \frac{1.5 - 0.5}{0.2} = \frac{1}{0.2} = 5 \Omega$$

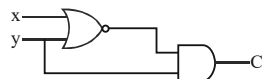
Q.21 (3)



$A = xy + \bar{y}$ if $x = 1$ & $y = 1$ then $A = 1$



$B = \overline{\bar{x} \bar{y}} = x + y$ if $x = 0$ & $y = 1 \Rightarrow B = 1$



$$C = (\overline{x + y}) \cdot y = (\bar{x} \cdot \bar{y}) y = 0$$

Q.22 (2)

$$\sigma = N_i e [\mu_e + \mu_h]$$

$$\sigma = 1.56 \times 10^{16} \times 1.6 \times 10^{-19} \times [0.135 + 0.065]$$

$$\sigma = 1.56 \times 1.6 \times 10^{-3} \times 0.2$$

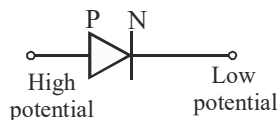
$$= 0.5 \times 10^{-3}$$



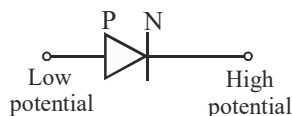
$$\rho = \frac{1}{\sigma} = \frac{1}{0.5 \times 10^{-3}} = 2000$$

Q.23 (3)

Forward bias



Reverse bias



Q.24 (2)

$$R_F = \frac{\Delta V}{\Delta I} = \frac{0.1}{400 \times 10^{-3}} = 0.25 \Omega$$



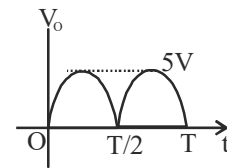
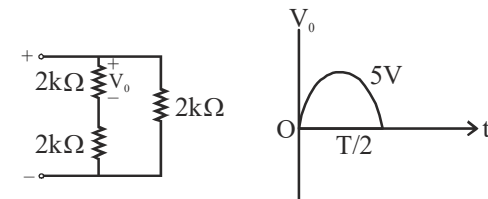
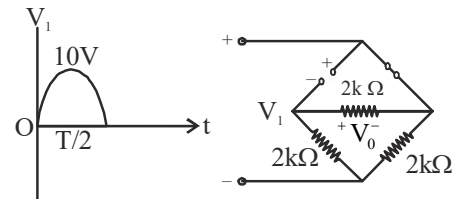
Q.25 (2)

For the position half cycle of input the resulting network is shown in figure (b). Diode D_1 is in "off" state and D_2 is in "on" state. Circuit has been redrawn in figure (c). It is clear that



$$V_0 = \frac{1}{2} V_1$$

$$\text{or } V_{0\text{max}} = \frac{1}{2} V_{1\text{max}} = \frac{1}{2} (10V) = 5V$$

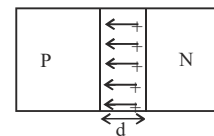


During negative half cycle the roles of diodes D_1 and D_2 will be interchanged and V_0 will appear as shown in figure (d)

For full-wave rectification

Q.26 (4)

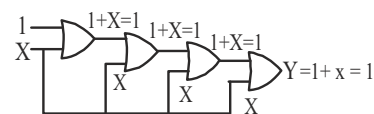
$$qEd = \frac{1}{2} mv^2$$



$$\Rightarrow d = \frac{kE}{qE} \Rightarrow d = \frac{3.2 \times 10^{-20}}{1.6 \times 10^{-19} \times 5 \times 10^5}$$

$$\Rightarrow d = \frac{2}{5} \times 10^{-6} = 40 \times 10^{-6} \text{ cm} = 4 \times 10^{-5} \text{ cm}$$

Q.27 (4)



CHEMISTRY
SECTION-A

- Q.51** (3)
Due to chelation stability of complex compound increases.
- Q.52** (1)
Facts
- Q.53** (3)
Thiocyanato (SCN^-) is monodentate ligand.
- Q.54** (3)
 $[\text{Fe}(\text{CN})_6]^{4-}$
 $\text{Fe}^{+2} \rightarrow 3d^6, \text{CN}^- \rightarrow \text{S.F.L}$
 $t_{2g}^6 e_g^0$
- Q.55** (2)
 $\text{Mn}^{+3} \rightarrow$ violet
 $\text{V}^{+3} \rightarrow$ green
 $\text{Mn}^{+2} \rightarrow$ Pink
 $\text{Cr}^{+2} \rightarrow$ Blue
- Q.56** (4)
 $[\text{CoCl}_3(\text{NH}_3)_3]$ it form zero No. of ions, so has minimum molar electrical conductivity
- Q.57** (2)
 $[\text{Co}(\text{en})_2\text{Cl}_2]\text{Cl}$
 $\text{Co}^{+3}, \text{C.N.} = 6$
- Q.58** (3)
 $[\text{Pt}(\text{NH}_3)_4\text{Cl}_2]\text{Br}_2$ can show Ionisation Isomers.
- Q.59** (1)
 $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$
Primary valency = 3
Secondary valency = 6
- Q.60** (1)
In $[\text{Fe}(\text{OX})_3]^{3-}$ & $[\text{FeF}_6]^{3-}$,
 $[\text{Fe}(\text{OX})_3]^{3-}$ is optically active.
- Q.61** (2)
 $\text{K}_3[\text{Fe}(\text{C}_2\text{O}_4)_3]$ contains same type of ligands.
- Q.62** (3)
Strength of ligand \rightarrow
 $\text{NH}_3 > \text{H}_2\text{O} > \text{F}^- > \text{I}^-$

- Q.63** (4)
Metallic Radii order \rightarrow
 $\text{Sc} > \text{Zn} > \text{Cu} > \text{Fe}$
- Q.64** (3)
Acidic character increases from V_2O_3 to Mn_2O_7 .
 V_2O_4 dissolves in acids to give VO^{2+} salts.
- Q.65** (1)
 $\text{V}_2\text{O}_5 \rightarrow$ In manufacture of H_2SO_4
 $\text{TiCl}_4 + \text{Al}(\text{CH}_3)_3 \rightarrow$ Polymerisation of complexes ethylene
 $\text{PdCl}_2 \rightarrow$ The oxidation of ethyne to ethanal
Nickel complex \rightarrow Polymerisation of Alkynes
- Q.66** (1)
 $\text{Fe}^{+2} \rightarrow \text{Fe}^{+3}$
 $\text{Cr}_2\text{O}_7^{2-} \rightarrow 2\text{Cr}^{+3}$
(Blue coloured)
Chromium appears violet But other mixed complexes of Cr (III) ions appears green.
- Q.67** (4)
 Mn^{+2} have maximum size among the following compound.
- Q.68** (3)
 $\text{Ni}^{+2} \rightarrow 3d^8, 2$ unpaired e^-
 $M = \sqrt{2(2+2)} = \sqrt{8}$ B.M.
- Q.69** (2)
Pu shows oxidation states up to + 7.
- Q.70** (4)
 Ce^{+4} behave as strong oxidising agent.
- Q.71** (3)
enthalpy of atomisation $\rightarrow \text{V} > \text{Ti} > \text{Co} > \text{Fe}$
- Q.72** (3)
 $\text{Cu}^+ \rightarrow 3d^{10} \rightarrow 0$ unpaired e^-
 $\text{Cr}^{+2} \rightarrow 3d^4 \rightarrow 4$ unpaired e^-
 $\text{Mn}^{+2} \rightarrow 3d^5 \rightarrow 5$ unpaired e^-
 $\text{Co}^{+2} \rightarrow 3d^7 \rightarrow 3$ unpaired e^-
- Q.73** (1)
 $\text{Cr}_2\text{O}_3 \rightarrow$ Amphoteric
 $\text{V}_2\text{O}_5 \rightarrow$ Amphoteric
 $\text{Mn}_2\text{O}_7 \rightarrow$ Acidic
 $\text{CrO} \rightarrow$ Basic

Q.74 (2)
Oxidising power →
 $MnO_4^- > Cr_2O_7^{2-} > VO_2^+$

Q.75 (3)
Common oxidation state of copper is +2 and Titanium is +4

Q.76 (3)
 $Sc^{+3} \rightarrow 3d^0 4s^0$
In $Sc^{+3} \rightarrow 0$ unpaired electrons.

Q.77 (4)
On moving left to right ionic radii decreases.

Q.78 (4)
 $XeO_3 \rightarrow$ Trigonal pyramidal

Q.79 (2)
Bond dissociation enthalpy
 $Cl_2 > Br_2 > F_2 > I_2$

Q.80 (1)
In this reaction H_2O_2 act an oxidising agent & Iodide ion act as reducing agent. And starch Solⁿ react with I_2 (which liberate during reaction) to form blue colour complex. So function of starch solⁿ is as indicator. The time it take for blue colour to appear is measured to determine the rate of reaction

Q.81 (1)

Q.82 (1)
 $\overset{\ominus}{H}CO_3 + dil H_2SO_4 \rightarrow H_2O + CO_2 \uparrow + HSO_4^-$

Q.83 (3)
 $[Ni(CO)_4] \rightarrow$ Tetrahedral

Q.84 (4)
Fact

Q.85 (3)
Fact Based

SECTION-B

Q.86 (4)
Facts

Q.87 (2)
Facts

Q.88 (2)
 $\Delta_t = \frac{4}{9} \Delta_o$

$$\Delta_o = \frac{9}{4} \Delta_t$$

Q.89 (1)
Chlorophyll → Mg
Carboxypeptide → Zn
Vitamin B₁₂ → Co
Haemoglobin → Fe

Q.90 (1)
 $[CoCl_2(en)_2]Cl$
dichlorido bis (ethane-1,2 - diamine)
cobalt (III) chloride.

Q.91 (2)
 $[Co(en)_3]^{3-}$ and cis $[Co(en)_2Cl_2]^+$
is optically active.

Q.92 (2)
In $[Mn(CN)_6]^{3-}$
 $Mn^{+3} \rightarrow 3d^4$
CN⁻ is S. F.L. $t_{2g}^4 e_g^0$
 d^2sp^3 Hyb. octahedral geometry

Q.93 (3)
Density order
 $Ni > Zn > Cr > V$

Q.94 (2)
a → 3
b → 4
c → 1
d → 2

Q.95 (3)
 $XeO_3 \rightarrow sp^3$
 $XeO_2F_2 \rightarrow sp^3d$
 $XeF_4 \rightarrow sp^3d^2$
 $XeF_2 \rightarrow sp^3d$

Q.96 (4)
Bond length order →
 $I_2 > Br_2 > Cl_2 > F_2$

Q.97 (1) Nitrogen has no vacant d-orbitals, so it can not expand its valency upto 5.

Q.98 (2)

$$\text{XeF}_6 \xrightarrow{-\text{H}_2\text{O}} \text{XeOF}_4 \xrightarrow{+\text{H}_2\text{O}} \text{XeO}_2\text{F}_2 \xrightarrow[\text{(C)}]{\text{(B)} + \text{H}_2\text{O}} \text{XeO}_3$$

B is XeO_2F_2

Q.99 (2) Potash alum (phitkari) white in colour.

Q.100 (3) Iodoform used as an antiseptic to treat minor skin conditions.

**BIOLOGY-I
SECTION-A**

Q.101 (1) **New NCERT Pg. No. 200**

- Statement-I: The female mosquito feeds on human blood for its reproduction but is not classified as a parasite. This statement is true.
- Statement-II: Due to this specialization, life cycles of endoparasites are far more complex than those of ectoparasites. This statement is true.

Q.102 (3) **New NCERT Pg. No. 197**

Amensalism is a type of species interaction where one species is harmed while the other remains unaffected. In this case, Species A is negatively affected (-), and Species B remains neutral (0).

Q.103 (3) **New NCERT Pg. No. 193**

The processes responsible for the increase in population size are natality and immigration.

- Natality refers to the number of births within a population during a given period, directly contributing to the population's growth.
- Immigration involves individuals entering a population from another region, which also increases the population size.
- Mortality (deaths) and emigration (movement of individuals out of a population) would decrease the population size.

Q.104 (2) **New NCERT Pg. No. 195**

Logistic growth describes population growth that eventually levels off as the population size approaches the environment's carrying capacity (K). The population reaches an asymptote when N (population size) = K , meaning the population has grown to the maximum number that the environment can support. The resources become limited, and growth slows down or stops at this point.

Q.105 (3) **New NCERT Pg. No. 200**

- Parasites are organisms that live in or on a host and rely on the host for survival. To ensure their persistence in an ecosystem, parasites often show high reproductive capacity.
- Other adaptations in parasites include the loss of unnecessary sense organs (like eyes in internal parasites), the development of adhesive organs to attach to the host, and the loss of the digestive system in parasites that absorb nutrients directly from their host.

Q.106 (2) **New NCERT Pg. No. 194**

This equation represents the exponential growth model, where:

- N_t is the population size at time t ,
- N_0 is the initial population size,
- r is the intrinsic rate of natural increase, and
- e is the base of the natural logarithm.

This equation shows how populations grow rapidly when there are no limiting factors, leading to a J-shaped growth curve.

Q.107 (3) **New NCERT Pg. No. 201**

Commensalism is an interaction where one species benefits, and the other is neither helped nor harmed. In this case, the clownfish benefits from living among the stinging tentacles of the sea anemone, which provides protection from predators. The sea anemone is neither harmed nor benefited by the clown fish's presence.

Q.108 (4) **New NCERT Pg. No. 197**

Mutualism is an interaction where both species benefit. In this scenario, both species A and species B have positive effects on each other, which is characteristic of mutualism. For example, in the case of pollinators and flowering plants, both organisms benefit—plants get pollinated, and pollinators receive nectar.

Q.109 (3) **New NCERT Pg. No. 201**

The interaction between fig trees and fig wasps is a classic example of mutualism. The wasps lay their eggs inside the fig

fruits, providing a place for their larvae to develop, while at the same time pollinating the fig flowers. Both the fig tree and the wasp benefit from this interaction-figs are pollinated, and wasps reproduce.

Q.110 (2)

New NCERT Pg. No. 198

• Statement-I: If a predator is too efficient in hunting and depleting its prey population, the prey species could become extinct. Once the prey is extinct, the predator may also go extinct due to the lack of food. Therefore, predators must balance their efficiency, which is why they are often described as "prudent" in nature.
 • Statement-II: Predators help maintain species diversity by preventing any single prey species from becoming too dominant therefore decreasing the competition. This is incorrect.



Q.111 (4)

New NCERT Pg. No. 207

Decomposition is the process by which organic material is broken down into simpler substances. It involves several steps:
 • Fragmentation: Large pieces of dead matter are broken into smaller particles.
 • Leaching: Water carries soluble nutrients away from the decomposing matter.
 • Catabolism: Microorganisms break down complex organic molecules into simpler ones.
 • Humification: The formation of humus, a dark, organic substance that enriches the soil.
 • Mineralization: The final breakdown of organic material into inorganic substances that plants can absorb. These processes are essential for nutrient cycling in ecosystems.



Q.112 (2)

New NCERT Pg. No. 213

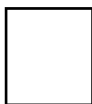
Aquatic ecosystems often have inverted biomass pyramids. This is because primary producers, such as phytoplankton, have a much lower biomass than the zooplankton that feed on them, even though phytoplankton reproduce rapidly and sustain the ecosystem. Consequently, the biomass of consumers in aquatic ecosystems can exceed that of the producers, resulting in an inverted pyramid.



Q.113 (3)

New NCERT Pg. No. 209

Photosynthetically Active Radiation (PAR) refers to the light wavelengths that plants can use for photosynthesis, primarily in the range of 400-700 nanometers. Of the total solar energy plants capture between 2% and 10% of PAR.



Q.114 (4)

New NCERT Pg. No. 211

The standing crop refers to the total biomass of living organisms at a particular trophic level or within an ecosystem at a specific point in time.



Q.115 (2)

New NCERT Pg. No. 208

The rate of decomposition is influenced by several factors, including the quality of the detritus (dead organic material) and environmental conditions. Decomposition occurs more rapidly when detritus is rich in nitrogen and sugars. Warm and moist environments also favor decomposition because they provide ideal conditions for microbial activity. In contrast, lignin and chitin are more resistant to decomposition, and low temperatures or anaerobic conditions can slow the process significantly.



Q.116 (2)

New NCERT Pg. No. 206

A pond is a shallow water body in which the abiotic component is the water with all the dissolved inorganic and organic substances and the rich soil deposit at the bottom of the pond not the top.



Q.135 (2)

New NCERT Pg. No.207, 208

Humification leads to accumulation of a dark coloured amorphous substance called **humus** that is highly resistant to microbial action and undergoes decomposition at an extremely slow rate.



Q.118 (1)

New NCERT Pg. No. 209

The flow of energy in an ecosystem is unidirectional-from producers to consumers and then to decomposers. Once energy is captured by producers (plants) through photosynthesis, it flows through the food chain as organisms consume one another. At each trophic level, some energy is lost as heat through respiration and metabolic processes.



Q.119 (3)

New NCERT Pg. No. 207

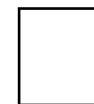
Secondary productivity refers to the rate at which consumers (herbivores, carnivores, etc.) produce new organic matter, either in the form of biomass or through reproduction. It measures the amount of energy that is converted into consumer biomass from the food they ingest.



Q.120 (1)

New NCERT Pg. No. 207

Gross Primary Productivity (GPP) represents the total amount of organic matter produced by plants during photosynthesis in an ecosystem. Some of this energy is used by the plants

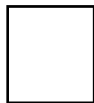


for respiration. The remaining energy, after respiration losses, is called Net Primary Productivity (NPP), which is available to herbivores and decomposers. Both statements are correct in defining GPP and NPP, highlighting their roles in the energy flow within an ecosystem.

Q.121 (4)

New NCERT Pg. No. 206, 210, 211, 209

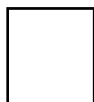
Deep-sea hydrothermal ecosystems do not rely on sunlight as their primary energy source. Instead, these ecosystems are powered by chemosynthesis, where microorganisms derive energy from the oxidation of inorganic compounds.



Q.122 (2)

New NCERT Pg. No. 210

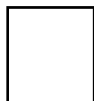
- Fourth Trophic Level (a) - Vulture (ii): Vultures are scavengers, often feeding at the top of the food chain.
- Second Trophic Level (b) - Rabbit (iii): Rabbits are herbivores, feeding on plants and representing the second trophic level.
- First Trophic Level (c) - Grass (iv): Grass is a producer and occupies the first trophic level.
- Third Trophic Level (d) - Crow (i): Crows are omnivores and can feed at various levels, often representing the third trophic level as secondary consumers.



Q.123 (1)

New NCERT Pg. No. 222

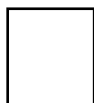
Biodiversity enhances ecosystem resilience, allowing ecosystems to better withstand environmental stresses such as drought. Loss of biodiversity can reduce an ecosystem's ability to recover from disturbances, making it more vulnerable to environmental changes.



Q.124 (2)

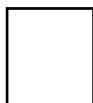
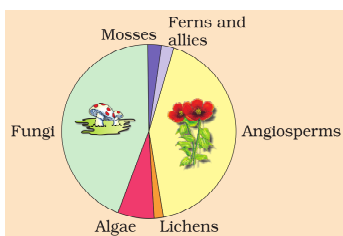
New NCERT Pg. No. 217, 219, 221, 223

Paul Ehrlich's "Rivet Popper" hypothesis compares species in an ecosystem to rivets in an airplane's wing. Just as the removal of too many rivets can cause the wing to fail, the loss of too many species can lead to the collapse of an ecosystem. The hypothesis emphasizes the importance of each species in maintaining the overall stability and function of ecosystems.



Q.125 (2)

New NCERT Pg. No. 218



Q.126 (3)

New NCERT Pg. No. 224

Biodiversity hotspots are regions with exceptionally high species diversity and a high degree of endemism (species found nowhere else). The Western Ghats, Sri Lanka, Indo-Burma, and the Himalayas are recognized as biodiversity hotspots, while agricultural fields are typically areas of low biodiversity due to human cultivation practices.



Q.127 (1)

New NCERT Pg. No. 222, 223

Co-extinction occurs when one species goes extinct due to the loss of another species with which it has an obligate relationship. The introduction of Nile perch led to extinction of cichlid fish. Additionally, the Amazon rainforest is being cleared for agricultural purposes, such as soybean cultivation and cattle ranching, contributing to habitat loss and the decline of biodiversity. Therefore statement I is incorrect but Statement II is correct.



Q.128 (3)

New NCERT Pg. No. 222

Habitat loss and fragmentation are the primary reasons of species extinction. As natural habitats are destroyed or divided into smaller, isolated patches, species lose access to resources, breeding grounds, and migration routes. This can lead to population declines and, ultimately, extinction.



Q.129 (4)

New NCERT Pg. No. 221

According to the IUCN Red List (2004), 784 species have become extinct in the last 500 years.



Q.130 (4)

New NCERT Pg. No. 221

Paul Ehrlich's "Rivet Popper" hypothesis illustrates how the loss of biodiversity can weaken ecosystem stability. Just as removing too many rivets can cause an airplane wing to fail, the loss of too many species can lead to ecosystem collapse. Each species plays a role in maintaining ecosystem function, and the loss of biodiversity can have cascading effects on the entire system.



Q.131 (3)

New NCERT Pg. No. 219

According to Robert May's global estimates, only 22 per cent of the total species have been recorded so far. This is correct statement.



Q.132 (4)
New NCERT Pg. No. 223, 225
 The World Summit on Sustainable Development in 2002 was held in Johannesburg, South Africa, not South America. This summit focused on global sustainable development goals and addressed issues such as poverty, environmental protection, and social equity.

Q.133 (1)
New NCERT Pg. No. 218, 219
 Both statements are correct. Fungi represent a highly diverse group, with more species than the combined total of fish, amphibians, reptiles, and mammals. Additionally, tropical forests like those in Ecuador have much higher species diversity than temperate forests, such as those in the Midwest USA.

Q.134 (1)
New NCERT Pg. No. 220
 The incorrect statement is that the relation between species richness (not evenness) and area for a wide variety of taxa (angiosperm plants, birds, bats, freshwater fishes) turns out to be a rectangular hyperbola

Q.135 (3)
New NCERT Pg. No. 224
 Biodiversity hotspots are characterized by high species richness and a high degree of endemism (species found nowhere else). They are also regions experiencing accelerated habitat loss. The statements about low levels of species richness and low interspecific competition are incorrect, as biodiversity hotspots are known for their richness and the intense competition among species.

SECTION-B

Q.136 (4)
New NCERT Pg. No. 192
 In a declining population, the number of pre-reproductive individuals is fewer than the number of reproductive individuals. This means that fewer young individuals are being added to the population, indicating that the population is aging and shrinking, leading to a potential decrease in the overall population size in the future.

Q.137 (2)
New NCERT Pg. No. 193
 • Statement-I: Natality refers to the birth rate in a population, which contributes to population growth. It is the addition of new individuals through reproduction. This is correct.
 • Statement-II: Emigration involves the movement of individuals out of a population. Both natality and emigration affect the population density. This is incorrect.

Q.138 (3)
New NCERT Pg. No. 194
 • The equation $dN/dt = rN$ describes exponential growth, where r is the intrinsic rate of increase, and the population grows rapidly over time without any limiting factors. This type of growth is represented by a J-shaped curve, where the population size increases exponentially as time progresses.

Q.139 (2)
New NCERT Pg. No. 200
 Cuscuta is a parasitic plant that lacks chlorophyll and grows on hedge plants. It obtains nutrients and water by attaching itself to the host plant. This is an example of parasitism, where the parasite benefits at the expense of the host.

Q.140 (1)
New NCERT Pg. No. 197
 • Statement-I: The prickly pear cactus was introduced to Australia and became an invasive species, spreading over millions of hectares of rangeland and causing ecological damage.
 • Statement-II: Exotic species often become invasive because the new environment lacks natural predators or competitors that would normally control their population. This allows them to spread unchecked, as seen with the prickly pear cactus in Australia.

Q.141 (2)
New NCERT Pg. No. 207
 The total annual net primary productivity of the Earth's biosphere is estimated to be around 170 billion tons of organic matter.

Q.142 (3)
New NCERT Pg. No. 210
 Secondary consumers are organisms that feed on primary consumers (herbivores). Primary carnivores fall into this category as they consume herbivores.

Q.143 (2)
New NCERT Pg. No. 207
 A detritivore is an organism that feeds on dead and decaying organic matter. Detritivores play a crucial role in the decomposition process, breaking down organic materials and recycling nutrients back into the ecosystem.

Q.144 (4)
New NCERT Pg. No. 210
 In a grazing food chain, the secondary consumer and primary carnivore occupy the same trophic level because both refer to organisms that consume primary consumers

(herbivores). Primary carnivores are animals that eat herbivores, such as a frog that eats insects. In food chains, both secondary consumers and primary carnivores are part of the second trophic level, just above the herbivores they prey upon.

Q.145 (1)

New NCERT Pg. No. 205

Ecosystems function as a unit where biotic components (living organisms) interact with abiotic factors (such as temperature, water, and nutrients). These interactions include energy flow, nutrient cycling, and decomposition. Ecosystems can vary greatly in size, from small ones like ponds to large ecosystems like forests or oceans. Both statements are correct.

Q.146 (2)

New NCERT Pg. No. 221

David Tilman, an ecologist, conducted experiments showing that ecosystems with higher species diversity exhibit greater stability and less variation in biomass production over time. Tilman found that plots with more species showed that increased diversity contributed to higher productivity.

Q.147 (2)

New NCERT Pg. No. 218

Among invertebrate groups, insects have the highest species diversity, followed by mollusks and crustaceans which have minimum species diversity.

Q.148 (3)

New NCERT Pg. No. 225

Chanda and Bastar are not located in Maharashtra; they are in the state of MP. This incorrect pairing makes the statement incorrect. The Khasi and Jaintia hills are in Meghalaya, and the Aravalli hills are in Rajasthan, both of which are correctly matched.

Q.149 (2)

New NCERT Pg. No. 220

Tropical regions have higher biodiversity primarily because they are less seasonal and have relatively stable, predictable climates. These conditions allow for the specialization of species and promote high rates of speciation. Tropical regions have not experienced significant glaciation in the past, and they receive abundant sunlight, which contributes to their high biodiversity. Therefore, statement (i) is the correct reason for tropical biodiversity.

Q.150 (3)

New NCERT Pg. No. 223, 225

Ex-situ conservation refers to the conservation of species outside their natural habitats, such as in zoos, botanical gardens, or

seed banks. National parks, wildlife sanctuaries, and biosphere reserves are examples of in-situ conservation, where species are protected in their natural environments. Statement-II about bioprospecting, which involves exploring biodiversity for products of economic value, is correct.

**BIOLOGY-II
SECTION-A**

Q.151 (2)

New NCERT Pg. No. 202

- The Mediterranean orchid *Ophrys* employs 'sexual deceit' to get pollination done by a species of bee.
- One petal (not all) of its flower bears an uncanny resemblance to the female of the bee in size, colour and markings.
- The male bee is attracted to what it perceives as a female, 'pseudocopulates' with the flower, and during that process is dusted with pollen from the flower.
- When this same bee 'pseudocopulates' with another flower, it transfers pollen to it and thus, pollinates the flower.

Q.152 (4)

New NCERT Pg. No. 196

In population growth models, r represents the intrinsic rate of natural increase, which is the rate at which a population increases in size under ideal conditions, with no environmental resistance. It is a key factor in determining the growth rate of a population.

Q.153 (3)

New NCERT Pg. No. 199

MacArthur showed that five species of warblers could coexist in the same tree because they had behavioral differences in their foraging activities. Each species foraged in different parts of the tree or at different times, reducing direct competition for resources. This is an example of resource partitioning, where species coexist by using resources in different ways.

Q.154 (2)

New NCERT Pg. No. 200

- Statement-I: Over time, the eggs of the Cuckoo (koel) have evolved to resemble the eggs of the crow in both size and color. This adaptation helps the koel avoid detection by the crow, which raises the koel's chicks.
- Statement-II: In brood parasitism, the parasitic bird lays its eggs in the host bird's nest, leaving the host bird to incubate and raise the parasitic chicks. This behavior benefits the parasitic bird, while the host bird is tricked into expending resources on the parasite's offspring. This is incorrect.

Q.155 (2)
New NCERT Pg. No. 198
 Competition is an interaction where both species are negatively affected as they compete for the same limited resources. In South American lakes, flamingos and resident fish compete for food, leading to a reduction in available resources for both species. This is a classic example of interspecific competition, where species from different taxa compete for the same resources.

Q.156 (2)
New NCERT Pg. No. 198, 199, 201
 The correct match is:
 I. Predation - C. Sparrow eating seed (predator-prey relationship),
 II. Competition - D. Barnacle Balanus and Barnacle Chathmalus (species competing for space),
 III. Commensalism - A. Sea anemone and the clownfish (one benefits, the other is unaffected),
 IV. Mutualism - B. Mycorrhiza (both species benefit).

Q.157 (2)
New NCERT Pg. No. 199
 Gause's principle of competitive exclusion states that when two species compete for the same resources, one will inevitably outcompete the other, leading to the exclusion of the less competitive species. This principle suggests that two species with identical ecological niches cannot coexist over the long term in the same habitat.

Q.158 (1)
New NCERT Pg. No. 199
 In ecological communities, when two species compete for the same resources, they often adopt different feeding times or behaviors to avoid direct competition. This strategy is called "resource partitioning."

Q.159 (3)
New NCERT Pg. No. 193
 Natality refers to the birth rate, adding individuals to a population, while mortality refers to death, reducing the population. Emigration is the movement of individuals out of a population, decreasing its size, and immigration is the arrival of new individuals from other areas, increasing population size. In the statement provided, the terms are reversed, making the statement incorrect.

Q.160 (4)
New NCERT Pg. No. 198
 The assertion states that competition typically occurs between closely related species when resources are limiting. But this fact is not always true. The reason provided, referencing the extinction of the Abingdon tortoise following the introduction of goats in the Galapagos Islands, is an example of interspecific competition. This is true.

Q.161 (2)
New NCERT Pg. No. 207
 Net Primary Productivity (NPP) represents the amount of energy or biomass that remains after plants use some of the energy they generate during photosynthesis for their own metabolic processes (respiration).
 • The correct formula is: $NPP = GPP - \text{Respiration losses}$
 • This means that NPP is the energy available to herbivores and decomposers in an ecosystem.

Q.162 (4)
New NCERT Pg. No. 213
 Sparrows are omnivorous birds, meaning they can feed on both plant material (such as seeds and grains, which places them at the primary consumer level) and small insects (which places them at the secondary consumer level). This allows sparrows to occupy multiple trophic levels depending on their food source.

Q.163 (4)
New NCERT Pg. No. 210
 In this food chain, the peacock is a tertiary consumer because it preys on snakes, which are secondary consumers. Snakes, in turn, eat insects (primary consumers), which feed on plants (primary producers). The peacock, being at the top of this chain, occupies the tertiary consumer level.

Q.164 (4)
New NCERT Pg. No. 207
 Primary productivity refers to the rate at which plants produce organic matter (biomass) through photosynthesis. It depends on factors like plant species, environmental conditions, and photosynthetic efficiency, but it is not directly influenced by how biomass is utilized.

Q.165 (1)
New NCERT Pg. No. 212
 In aquatic ecosystems, biomass pyramids are often inverted. This happens because the primary producers (phytoplankton) have a very small biomass compared to the consumers (zooplankton), despite their rapid turnover rate. Zooplankton have a larger biomass, but phytoplankton reproduce quickly enough to sustain them. As a result, the biomass pyramid appears inverted.

Q.166 (1)
New NCERT Pg. No.206
 In aquatic ecosystems, phytoplankton are the primary producers. They convert solar energy into chemical energy through photosynthesis, forming the base of the aquatic food web.

Q.167 (4)

New NCERT Pg. No. 214

Saprophytes, such as fungi and bacteria, break down dead organic matter and recycle nutrients in ecosystems. However, they are not typically represented in ecological pyramids, which focus on the transfer of energy through living organisms (producers, consumers, and decomposers). Saprophytes play a vital role in nutrient cycling, but their activity is often not depicted in traditional trophic levels of ecological pyramids.

Q.168 (1)

New NCERT Pg. No. 212

In an ecological pyramid, the base always represents the producers (plants and other autotrophs), which capture energy from the sun and convert it into biomass. The apex of the pyramid represents the top-level consumers (typically carnivores or omnivores), which are at the highest trophic level and have no natural predators. This structure illustrates the flow of energy from primary producers to top-level consumers in an ecosystem.

Q.169 (3)

New NCERT Pg. No.210

The Detritus Food Chain (DFC) begins with dead organic matter and includes organisms such as decomposers (bacteria and fungi) that break down this material. While the DFC plays an essential role in nutrient recycling, it is not the primary pathway for energy flow in aquatic ecosystems. In aquatic environments, the Grazing Food Chain (GFC), which begins with phytoplankton as primary producers, is the major conduit for energy flow. Therefore, the statement is incorrect.

Q.170 (4)

New NCERT Pg. No. 207

The processes in decomposition are as follows:

- Fragmentation (D): The breakdown of detritus into smaller particles.
- Humification (C): The accumulation of dark-colored organic material (humus).
- Leaching (A): The release and precipitation of soluble inorganic nutrients into the soil.
- Catabolism (B): The enzymatic breakdown of detritus into inorganic substances. This sequence correctly represents the decomposition process.

Q.171 (4)

New NCERT Pg. No. 206

Ecosystems function as a unit by integrating processes like productivity (the generation of biomass by producers), decomposition (the breakdown of organic matter), energy flow (the movement of energy through trophic levels), and nutrient cycling (the recycling of essential

elements like carbon and nitrogen). All these processes are interconnected and vital for maintaining the balance and sustainability of ecosystems.

Q.172 (3)

New NCERT Pg. No. 214

Ecological pyramids typically represent simple food chains, where each species belongs to a distinct trophic level. However, ecological pyramids do not take into account species which can occupy multiple trophic levels (e.g., omnivores). The assertion is true, the reason is false.

Q.173 (2)

New NCERT Pg. No. 217, 219

The Western Ghats, not the Eastern Ghats, have greater amphibian species diversity due to their unique climatic conditions and rich biodiversity. Statement-II is also incorrect because species diversity generally decreases as one moves away from the equator towards the poles, where environmental conditions become harsher and less stable for sustaining diverse species.

Q.174 (3)

New NCERT Pg. No. 220

The species-area relationship is described by the equation:

$$\log S = \log C + Z \log A$$

where S is the number of species, A is the area, C is a constant, and Z is the slope of the line. This logarithmic relationship shows that as the area increases, the number of species also increases, though at a diminishing rate.

Q.175 (1)

New NCERT Pg. No. 217

The assertion and reason are both true. Species inventories are more complete in temperate regions because these areas have been more thoroughly studied than tropical regions. Tropical regions harbor a greater number of species, but the vast biodiversity in these areas is often under-sampled, leading to incomplete species inventories.

Q.176 (4)

New NCERT Pg. No. 222, 223

The African catfish *Clarias gariepinus* is an invasive species, not an example of co-extinction. Co-extinction refers to the extinction of one species due to the extinction of another species with which it has an interdependent relationship. The African catfish, however, threatens native species through competition, not co-extinction.

Q.177 (3)

New NCERT Pg. No. 222, 223

The introduction of the Nile perch into Lake Victoria led to the extinction of over 200 species of cichlid fish. The Nile perch is a

voracious predator that outcompeted and consumed many native fish species, leading to a significant loss of biodiversity in the lake. This example highlights the impact of invasive species on native ecosystems.

Q.178 (1)
New NCERT Pg. No. 225

The World Summit on Sustainable Development was held in 2002 in Johannesburg, South Africa. This summit focused on addressing global issues related to sustainable development, environmental protection, and social equity.

Q.179 (2)
New NCERT Pg. No. 220

Alexander von Humboldt observed that species richness increases with increasing area but only up to a certain limit. This observation led to the development of the species-area relationship, a foundational concept in ecology and biogeography. The relationship shows that larger areas tend to support more species, though the rate of increase slows as the area expands.

Q.180 (2)
New NCERT Pg. No. 219

The latitudinal range between 23.5° N and 23.5° S, known as the tropics, harbors the greatest species diversity on Earth. Tropical regions are characterized by stable, warm climates and abundant rainfall, which provide ideal conditions for the proliferation of diverse species.

Q.181 (1)
New NCERT Pg. No. 218

Fishes represent the largest group in terms of species diversity, followed by birds, reptiles, and amphibians.

Q.182 (3)
New NCERT Pg. No. 221

According to the IUCN Red List (2004), invertebrates (359) have experienced the most extinctions over the last 500 years.

Q.183 (1)
New NCERT Pg. No. 223

Bioprospecting refers to the exploration of biological resources, such as plants, animals, and microorganisms, for products of economic importance, such as medicines, enzymes, or agricultural chemicals. It involves identifying and developing natural substances that can be used in various industries, including pharmaceuticals and biotechnology.

Q.184 (1)
New NCERT Pg. No. 223

Eicchornia (water hyacinth), Nile perch and *Clarias gariepinus* (African catfish) are invasive aquatic species that pose a threat to native species.

Q.185 (1)
New NCERT Pg. No. 221, 225

The correct order based on the number in India is:
 • Biodiversity hotspots (B): 3 recognized biodiversity hotspots.
 • Biosphere reserves (A): 14 biosphere reserves.
 • National parks (C): There are 90 national parks.
 • Wildlife sanctuaries (D): India has 448 wildlife sanctuaries.

SECTION-B

Q.186 (3)
New NCERT Pg. No. 191

Age pyramids represent the age distribution within a population. The incorrect statement here is that males and females are shown in separate diagrams. In reality, age pyramids typically display both genders within a single diagram.

Q.187 (2)
New NCERT Pg. No. 198

When Darwin spoke of the struggle for existence and survival of the fittest in nature, he was convinced that interspecific competition is a potent force in organic evolution.

Q.188 (4)
New NCERT Pg. No. 198, 199

Competition in ecosystems can occur between closely related species (intraspecific competition) or between species that are not closely related (interspecific competition). The incorrect statement is that only closely related species can compete. In reality, unrelated species can also compete for the same resources, such as food, space, or shelter.

Q.189 (2)
New NCERT Pg. No. 198

Certain butterflies, like the monarch butterfly, become distasteful to predators due to the toxins they accumulate from their food sources during their caterpillar stage.

Q.190 (3)
New NCERT Pg. No. 192

In tiger reserves, censuses are conducted using non-invasive methods, such as counting pug marks (footprints) and

analyzing faecal pellets. These methods allow researchers to estimate the population size of tigers without disturbing them directly.

Q.191 (2)

New NCERT Pg. No. 205, 206

In forest ecosystems, trees occupy the top layers, not the bottom. The canopy formed by tall trees plays a dominant role in determining the structure and function of forest ecosystems. Therefore, the statement that trees occupy the bottom layers is incorrect.

Q.192 (4)

New NCERT Pg. No. 206

Stratification refers to the vertical layering of different species within an ecosystem, particularly in forest ecosystems, where different plants grow at various heights. While stratification is a structural aspect of an ecosystem, it is not considered a functional process like energy flow, decomposition, or productivity.

Q.193 (1)

New NCERT Pg. No. 211

The number of trophic levels in a grazing food chain is limited because only about 10% of the energy is transferred from one trophic level to the next. As energy is lost at each level, there is not enough energy to support many levels beyond a certain point. This explains why ecosystems rarely have more than four or five trophic levels, making the reason a correct explanation of the assertion.

Q.194 (1)

New NCERT Pg. No. 207, 210

- Productivity is measured in terms of biomass produced per unit area over time, such as grams per square meter per year or kilocalories per square meter per year. This allows for the comparison of productivity across different ecosystems.
- Organisms occupy positions in ecosystems based on their trophic relationships, which determine their feeding interactions with other organisms.
- Both statements are therefore correct.

Q.195 (1)

New NCERT Pg. No. 210

In detritus food chains, the breakdown of dead organic matter by decomposers like bacteria and fungi is the starting. These organisms meet their energy and nutrient needs by degrading organic material, recycling nutrients back into the ecosystem. This contrasts with grazing food chains, which start with primary producers (plants) and involve herbivores and higher-level consumers.

Q.196 (2)

New NCERT Pg. No. 217

Reserpine is a drug derived from the plant *Rauwolfia serpentina*.

It has been used in traditional medicine to treat high blood pressure and mental disorders.

Q.197 (4)

New NCERT Pg. No. 223, 224

The ethical argument for conserving biodiversity relates to what we owe to millions of plant, animal and microbe species with whom we share this planet.

Q.198 (3)

New NCERT Pg. No. 223

Pollination is considered an ecosystem service, but it is not narrowly utilitarian.

Narrowly utilitarian services include resources like firewood, medicines, and construction materials that are directly used by humans.

Q.199 (3)

New NCERT Pg. No. 219

Tropical regions are known for their stable environmental conditions, which allow species to specialize in specific niches. This constant environment promotes the evolution of a wide variety of species, contributing to the high biodiversity observed in the tropics. These regions have not experienced significant glaciation, and the availability of more solar energy supports higher primary productivity.

Q.200 (1)

New NCERT Pg. No. 217, 218

Statement (A) is correct because Robert May's estimate of global species diversity is around 7 million. Statement (B) is incorrect because India has more than 50,000 genetically different strains of rice, and 1,000 varieties of mango. (C) insects make up 70% proportion of Earth's animal species and (D) is incorrect, although India has only 2.4 per cent of the world's land area, its share of the global species diversity is an impressive 8.1 per cent.