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NEET UG 2026 Prediction Paper Set 1 — Must-Know Edition (200 MCQs with Answers)

NEET 2026 • RESULTS IN

How did this prediction paper actually do? **65 of 180 questions predicted.**

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NEET UG 2026 Prediction Paper

Set 1 — “Must-Know” Edition | Full 200-Question Paper

Physics • Chemistry • Botany • Zoology

Prediction Based on 2021–2025 Pattern Analysis

How This Paper Was Created — Methodology

This prediction paper is built on a rigorous analysis of NEET UG papers from 2021 to 2025. Here is exactly how each question was selected:

- **Topic Frequency Mapping:** Every question from 5 years of NEET papers (2021–2025, all shifts) was tagged to its NCERT chapter and sub-topic. Topics appearing in 4 or 5 of those years are classified as “evergreen” and form the core of this paper.
- **Weightage Analysis:** Physics chapters like Laws of Motion, Electrostatics, and Modern Physics consistently contribute 3–5 questions each year. These receive proportional coverage here.
- **Question-Type Patterns:** Statement I/Statement II questions have appeared in every NEET since 2021. Match List format became standard in 2022. Both formats are included in each subject.
- **Difficulty Calibration:** Questions are benchmarked to NEET difficulty: ~30% easy (direct NCERT fact), ~50% medium (application of concept), ~20% hard (multi-step/analysis).
- **NCERT Alignment:** Every question is traceable to a specific NCERT Class 11 or Class 12 chapter — the only source NEET officially tests.

- **Originality:** All questions are original compositions inspired by topic patterns, not copied from any published paper or question bank.

General Instructions

- Total Questions: 200 | Maximum Marks: 720 | Duration: 3 Hours 20 Minutes
- Each subject has **Section A** (35 questions, all compulsory) and **Section B** (15 questions, attempt any 10).
- Marking Scheme: +4 for correct answer, -1 for incorrect answer, 0 for unattempted.
- All questions are MCQs with one correct answer from four options.
- Use the Answer Key at the bottom to self-evaluate.

PHYSICS | Questions 1–50

Section A — Questions 1 to 35 (All Compulsory)

Q1. A block of mass 5 kg is placed on a rough horizontal surface. A horizontal force of 20 N is applied on the block. If the coefficient of static friction is 0.5 and kinetic friction is 0.4, the acceleration of the block is: ($g = 10 \text{ m/s}^2$)

- (1) 0 m/s^2 (2) 0.4 m/s^2
(3) 2 m/s^2 (4) 4 m/s^2

Q2. A car of mass 1500 kg moving at 20 m/s applies brakes and stops in 10 seconds. The retarding force acting on the car is:

- (1) 750 N (2) 1500 N
(3) 3000 N (4) 30000 N

Q3. A projectile is fired with velocity u at angle θ with horizontal. The ratio of maximum height to the range of the projectile is:

- (1) $\tan \theta / 2$ (2) $\tan \theta / 4$

- (3) $2 \tan \theta$ (4) $\tan \theta$

Q4. A uniform rod of length L and mass M is pivoted at one end. The moment of inertia about the pivot is:

- (1) $ML^2/3$ (2) $ML^2/12$
(3) $ML^2/2$ (4) $ML^2/4$

Q5. A satellite of mass m is orbiting Earth at radius r . If the radius is doubled keeping mass of satellite constant, the orbital speed becomes:

- (1) $v/2$ (2) $v/\sqrt{2}$
(3) $2v$ (4) $\sqrt{2} v$

Q6. A body of mass 2 kg is moving in a circle of radius 0.5 m with angular velocity 4 rad/s . The centripetal force acting on the body is:

- (1) 4 N (2) 8 N
(3) 16 N (4) 32 N

Q7. A disc of mass M and radius R rolls without slipping on a horizontal surface. If the velocity of the centre of mass is v , the total kinetic energy of the disc is:

- (1) $Mv^2/2$ (2) Mv^2
(3) $(3/4)Mv^2$ (4) $(2/3)Mv^2$

Q8. The escape velocity from Earth's surface is approximately 11.2 km/s . The escape velocity from a planet with twice the mass and twice the radius of Earth would be:

- (1) 11.2 km/s (2) 15.8 km/s
(3) 22.4 km/s (4) 7.9 km/s

Q9. Statement I: Newton's third law of motion holds for both contact and non-contact forces.
Statement II: Action and reaction forces act on the same body and are equal and opposite.

- (1) Statement I is True, Statement II is True, Statement II is the correct explanation of Statement I
(2) Statement I is True, Statement II is False
(3) Statement I is False, Statement II is True

(4) Statement I is False, Statement II is False

Q10. A spring of spring constant $k = 200 \text{ N/m}$ is compressed by 0.1 m . A block of mass 0.5 kg is placed against it and released. The speed of the block when it leaves the spring is:

- (1) 1 m/s (2) 2 m/s
(3) 4 m/s (4) 10 m/s

Q11. Two charges $+4 \mu\text{C}$ and $-4 \mu\text{C}$ are separated by a distance of 0.4 m in vacuum. The electric field at the midpoint of the line joining them is: ($k = 9 \times 10^9 \text{ Nm}^2/\text{C}^2$)

- (1) $9 \times 10^5 \text{ N/C}$ directed towards $-4 \mu\text{C}$ (2) $9 \times 10^5 \text{ N/C}$ directed towards $+4 \mu\text{C}$
(3) $18 \times 10^5 \text{ N/C}$ directed towards $-4 \mu\text{C}$ (4) Zero

Q12. A parallel plate capacitor of capacitance C is charged to potential V . If a dielectric slab of dielectric constant K is inserted fully between the plates (battery disconnected), the new potential across the capacitor is:

- (1) KV (2) V/K
(3) V (4) $V\sqrt{K}$

Q13. In a Wheatstone bridge, resistances $P = 10 \Omega$, $Q = 10 \Omega$, $R = 20 \Omega$ are connected. The bridge is balanced. The value of S is:

- (1) 10Ω (2) 15Ω
(3) 20Ω (4) 40Ω

Q14. Match List-I (Electrical quantities) with List-II (SI Units):

List-I: (A) Electric potential (B) Electric field intensity (C) Electric flux (D) Capacitance

List-II: (I) N/C (II) Volt (III) $\text{N}\cdot\text{m}^2/\text{C}$ (IV) Farad

	A	B	C	D
(1)	II	I	III	IV
(2)	I	II	IV	III
(3)	II	III	I	IV
(4)	IV	I	III	II

Q15. A long straight wire carries a current of 5 A. The magnetic field at a distance of 10 cm from the wire is: ($\mu_0 = 4\pi \times 10^{-7} \text{ T}\cdot\text{m/A}$)

- (1) $1 \times 10^{-5} \text{ T}$ (2) $2 \times 10^{-5} \text{ T}$
 (3) $1 \times 10^{-6} \text{ T}$ (4) $\pi \times 10^{-5} \text{ T}$

Q16. A solenoid of length 0.5 m has 1000 turns. If a current of 2 A flows through it, the magnetic field inside the solenoid is: ($\mu_0 = 4\pi \times 10^{-7} \text{ T}\cdot\text{m/A}$)

- (1) $1.6\pi \times 10^{-3} \text{ T}$ (2) $8\pi \times 10^{-4} \text{ T}$
 (3) $4\pi \times 10^{-3} \text{ T}$ (4) $2\pi \times 10^{-3} \text{ T}$

Q17. Faraday's law of electromagnetic induction states that the induced EMF in a circuit is equal to the negative rate of change of:

- (1) Electric flux (2) Magnetic flux
 (3) Electric field (4) Current

Q18. A convex lens of focal length 20 cm forms an image of an object placed 30 cm from it. The image is:

- (1) Virtual, erect, at 60 cm from lens (2) Real, inverted, at 60 cm from lens
 (3) Real, erect, at 60 cm from lens (4) Virtual, inverted, at 60 cm from lens

Q19. In Young's double slit experiment, the fringe width is β . If the distance between the slits is doubled and the distance to the screen is halved, the new fringe width is:

- (1) $\beta/4$ (2) $\beta/2$
 (3) β (4) 2β

Q20. A glass prism of apex angle 60° has refractive index $\sqrt{2}$. The angle of minimum deviation is:

- (1) 30° (2) 45°
(3) 60° (4) 90°

Q21. The photoelectric effect demonstrates that light has:

- (1) Wave nature (2) Particle (quantum) nature
(3) Both wave and particle nature (4) Neither wave nor particle nature

Q22. The de Broglie wavelength of an electron accelerated through a potential difference of 100 V is approximately: ($m_e = 9.1 \times 10^{-31}$ kg, $e = 1.6 \times 10^{-19}$ C, $h = 6.626 \times 10^{-34}$ J·s)

- (1) 1.23 Å (2) 2.46 Å
(3) 0.61 Å (4) 3.0 Å

Q23. Which of the following nuclear reactions represents alpha decay?

- (1) ${}_{92}^{238}\text{U} \rightarrow {}_{90}^{234}\text{Th} + {}_2^4\text{He}$ (2) ${}_{6}^{14}\text{C} \rightarrow {}_{7}^{14}\text{N} + {}_{-1}^0\text{e} + \bar{\nu}$
(3) ${}_{92}^{235}\text{U} + {}_0^1\text{n} \rightarrow {}_{56}^{141}\text{Ba} + {}_{36}^{92}\text{Kr} + 3{}_0^1\text{n}$ (4) ${}^1_1\text{H} + {}^1_1\text{H} \rightarrow {}^2_1\text{H} + \text{e}^+ + \nu$

Q24. The binding energy per nucleon is maximum for:

- (1) ${}^2_1\text{H}$ (2) ${}^{56}_{26}\text{Fe}$
(3) ${}^{235}_{92}\text{U}$ (4) ${}^4_2\text{He}$

Q25. An ideal gas undergoes an adiabatic process. Which of the following is conserved?

- (1) Temperature (2) Internal energy
(3) Total energy (internal + work done) (4) Pressure $\times$ Volume

Q26. For an ideal gas at constant pressure, the work done by the gas when temperature changes from T_1 to T_2 is:

- (1) $nR(T_2 - T_1)$ (2) $nC_V(T_2 - T_1)$
(3) $nC_P(T_2 - T_1)/2$ (4) $(nR/\gamma)(T_2 - T_1)$

Q27. A simple pendulum of length L is executing SHM. If the length is increased to $4L$, the new time period becomes:

- (1) $T/2$ (2) T
(3) $2T$ (4) $4T$

Q28. In a p-n junction diode, the width of the depletion region:

- (1) Increases with forward bias (2) Decreases with forward bias
(3) Remains constant regardless of bias (4) Increases with both forward and reverse bias

Q29. Statement I: Photons are deflected by a gravitational field.

Statement II: Photons have zero rest mass but finite momentum $h\nu/c$.

- (1) Both Statement I and Statement II are True, and Statement II correctly explains Statement I
(2) Both Statement I and Statement II are True, but Statement II does NOT explain Statement I
(3) Statement I is True, Statement II is False
(4) Statement I is False, Statement II is True

Q30. The dimensional formula for coefficient of viscosity (η) is:

- (1) $[ML^{-1}T^{-1}]$ (2) $[MLT^{-2}]$
(3) $[M^0LT^{-1}]$ (4) $[ML^2T^{-2}]$

Q31. Water flows through a horizontal pipe with a constriction. According to Bernoulli's principle, at the constriction:

- (1) Velocity decreases, pressure increases (2) Velocity increases, pressure increases
(3) Velocity increases, pressure decreases (4) Velocity decreases, pressure decreases

Q32. A transformer has 200 turns in primary and 1000 turns in secondary. If the primary is connected to 220 V AC, the secondary voltage and the type of transformer are:

- (1) 1100 V, Step-up (2) 44 V, Step-down
(3) 1100 V, Step-down (4) 44 V, Step-up

Q33. Match List-I (Physical phenomenon) with List-II (Principle/Law used):

List-I: (A) Working of optical fibre (B) Formation of rainbow (C) Blue colour of sky (D) Mirage

List-II: (I) Total Internal Reflection (II) Dispersion and TIR (III) Scattering of light (IV) Refraction due to density gradient

	A	B	C	D
(1)	I	II	III	IV
(2)	II	I	IV	III
(3)	I	III	II	IV
(4)	IV	II	III	I

Q34. The output of an AND gate is 1 only when:

- (1) At least one input is 1 (2) Both inputs are 0
(3) Both inputs are 1 (4) Inputs are different

Q35. Electromagnetic waves are transverse in nature. The electric and magnetic fields in an EM wave are:

- (1) Parallel to each other and parallel to direction of propagation
(2) Perpendicular to each other but parallel to direction of propagation
(3) Perpendicular to each other and perpendicular to direction of propagation
(4) Parallel to each other and perpendicular to direction of propagation

Section B — Questions 36 to 50 (Attempt any 10)

Instructions: Section B contains 15 questions (Q36–Q50). Attempt any 10. If more than 10 are attempted, first 10 will be evaluated.

Q36. A body is thrown vertically upward with velocity 49 m/s. The maximum height reached and total time in air are: ($g = 9.8 \text{ m/s}^2$)

- (1) 122.5 m, 10 s (2) 245 m, 10 s
(3) 122.5 m, 5 s (4) 100 m, 10 s

Q37. Two balls, one of mass m and another of mass $2m$, undergo a perfectly elastic head-on collision. The lighter ball was initially at rest. After collision, the velocity of the lighter ball (initial velocity of heavier ball = u) is:

- (1) $4u/3$ (2) $2u/3$
(3) $u/3$ (4) $2u$

Q38. The gravitational potential energy of a satellite of mass m at height h above Earth's surface (Earth radius R , mass M) is:

- (1) $-GMm/(R+h)$ (2) mgh
(3) $-GMm/R$ (4) $GMm/(R+h)$

Q39. A copper wire has resistance $10\ \Omega$ at 20°C . If temperature coefficient of resistance of copper is $4 \times 10^{-3}/^\circ\text{C}$, the resistance at 120°C is:

- (1) $12\ \Omega$ (2) $14\ \Omega$
(3) $16\ \Omega$ (4) $18\ \Omega$

Q40. An AC circuit has $R = 30\ \Omega$, $X_L = 40\ \Omega$ in series. The impedance and power factor of the circuit are:

- (1) $50\ \Omega$, 0.6 (2) $70\ \Omega$, 0.6
(3) $50\ \Omega$, 0.8 (4) $70\ \Omega$, 0.8

Q41. Brewster's angle for a glass surface ($n = 1.732$) is:

- (1) 45° (2) 60°
(3) 30° (4) 53°

Q42. In Bohr's model of hydrogen atom, the radius of the n th orbit is proportional to:

- (1) n (2) n^2
(3) n^3 (4) $1/n^2$

Q43. The half-life of a radioactive substance is 20 minutes. The fraction remaining after 1 hour is:

- (1) $1/4$ (2) $1/8$

(3) $1/16$ (4) $1/3$

Q44. Which of the following logic gate combinations is equivalent to NAND gate?

- (1) AND followed by NOT (2) OR followed by NOT
(3) AND followed by AND (4) NOT followed by OR

Q45. A standing wave is formed on a string of length L fixed at both ends. The wavelength of the fundamental frequency is:

- (1) $L/2$ (2) L
(3) $2L$ (4) $4L$

Q46. Statement I: The rms speed of gas molecules is greater than the average speed.

Statement II: Root mean square of unequal positive numbers is always greater than their arithmetic mean.

- (1) Both statements are True; Statement II correctly explains Statement I
(2) Both statements are True; Statement II does NOT explain Statement I
(3) Statement I is True, Statement II is False
(4) Statement I is False, Statement II is True

Q47. A charged particle enters a uniform magnetic field perpendicular to its velocity. The particle moves in:

- (1) A straight line (2) A parabolic path
(3) A circular path (4) A helical path

Q48. The ratio C_p/C_v for a diatomic ideal gas at moderate temperatures is:

- (1) $5/3$ (2) $7/5$
(3) $4/3$ (4) $3/2$

Q49. The work done by the electric field when a charge of 2 C is moved from a point at potential 10 V to a point at potential 20 V is:

- (1) $+20\text{ J}$ (2) -20 J
(3) $+10\text{ J}$ (4) -10 J

Q50. Which type of electromagnetic radiation is used in RADAR systems?

- (1) Infrared waves (2) Microwaves
(3) Radio waves (AM) (4) X-rays

CHEMISTRY | Questions 51–100

Section A — Questions 51 to 85 (All Compulsory)

Q51. The IUPAC name of $\text{CH}_3\text{—CH(Cl)—CH}_2\text{—CH}_3$ is:

- (1) 2-chlorobutane (2) 3-chlorobutane
(3) 1-chloro-2-methylpropane (4) 2-chloro-1-methylpropane

Q52. In the Grignard reagent, the general formula is RMgX . When phenyl magnesium bromide ($\text{C}_6\text{H}_5\text{MgBr}$) reacts with formaldehyde (HCHO) followed by hydrolysis, the product is:

- (1) Benzyl alcohol (2) Phenol
(3) Benzaldehyde (4) Benzoic acid

Q53. Friedel-Crafts alkylation uses which catalyst?

- (1) Nickel (2) Anhydrous AlCl_3
(3) Palladium on carbon (4) H_2SO_4

Q54. Aldol condensation occurs between two molecules of acetaldehyde (CH_3CHO). The product after condensation (before dehydration) is:

- (1) 3-hydroxybutanal (2) But-2-enal
(3) 2-hydroxypropanal (4) 4-hydroxybutanal

Q55. Cannizzaro reaction is given by aldehydes that:

- (1) Have an alpha-hydrogen and react in base (2) Have no alpha-hydrogen and undergo disproportionation in base
(3) Have no alpha-hydrogen and react with Tollens' reagent (4) React with Lucas reagent

Q56. The number of sigma (σ) and pi (π) bonds in but-1-yne ($\text{HC}\equiv\text{C}-\text{CH}_2-\text{CH}_3$) is:

- (1) $8\sigma, 2\pi$ (2) $7\sigma, 2\pi$
(3) $9\sigma, 2\pi$ (4) $9\sigma, 1\pi$

Q57. In $\text{S}_\text{N}1$ reaction, the rate of reaction depends on:

- (1) Concentration of both substrate and nucleophile (2) Concentration of nucleophile only
(3) Concentration of substrate only (4) Temperature only

Q58. Nylon-6,6 is a polyamide formed by the condensation of:

- (1) Hexamethylenediamine + Adipic acid (2) Caprolactam alone
(3) Ethylene glycol + Terephthalic acid (4) Lactic acid alone

Q59. Which of the following amino acids is essential (cannot be synthesized by the human body)?

- (1) Alanine (2) Glycine
(3) Lysine (4) Serine

Q60. Match List-I (Named Reactions) with List-II (Reagents/Conditions used):

List-I: (A) Sandmeyer reaction (B) Reimer-Tiemann reaction (C) Kolbe's reaction (D) Clemmensen reduction

List-II: (I) $\text{CHCl}_3/\text{NaOH}$ on phenol (II) CuCN on diazonium salt (III) CO_2/NaOH under pressure on sodium phenoxide (IV) $\text{Zn-Hg}/\text{HCl}$ on carbonyl compound

	A	B	C	D
(1)	II	I	III	IV
(2)	I	II	IV	III
(3)	III	I	II	IV
(4)	II	III	I	IV

Q61. The coordination compound $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}$ exhibits which type of isomerism?

- (1) Linkage isomerism (2) Ionisation isomerism

(3) Geometric isomerism (4) Optical isomerism

Q62. According to Crystal Field Theory, the splitting energy Δ_o (octahedral) and Δ_t (tetrahedral) are related as:

- (1) $\Delta_t = \Delta_o$ (2) $\Delta_t = (4/9)\Delta_o$
(3) $\Delta_t = (9/4)\Delta_o$ (4) $\Delta_t = 2\Delta_o$

Q63. In Group 15 elements (pnictogens), the stability of +5 oxidation state decreases down the group due to:

- (1) Lanthanide contraction (2) Inert pair effect
(3) Diagonal relationship (4) Increasing electronegativity

Q64. The magnetic moment of a coordination complex is 3.87 BM. The number of unpaired electrons in the central metal ion is:

- (1) 2 (2) 3
(3) 4 (4) 1

Q65. Among the halogens, which one is the strongest oxidizing agent?

- (1) Cl_2 (2) Br_2
(3) I_2 (4) F_2

Q66. The hybridization of sulfur in SF_6 is:

- (1) sp^3 (2) sp^3d
(3) sp^3d^2 (4) dsp^2

Q67. Statement I: The first ionization enthalpy of oxygen is less than that of nitrogen.

Statement II: Nitrogen has a half-filled 2p subshell which imparts extra stability.

- (1) Statement I is True, Statement II is True; Statement II correctly explains Statement I
(2) Statement I is True, Statement II is True; Statement II does NOT explain Statement I
(3) Statement I is False, Statement II is True
(4) Statement I is True, Statement II is False

Q68. In the extraction of aluminium (Hall-Heroult process), the electrolyte used is:

- (1) Pure Al_2O_3 (molten) (2) Al_2O_3 dissolved in molten cryolite (Na_3AlF_6)
(3) AlCl_3 solution (4) $\text{Al}_2(\text{SO}_4)_3$ solution

Q69. The rate constant of a first-order reaction is $2.303 \times 10^{-3} \text{ s}^{-1}$. The time required to reduce the concentration to 10% of its initial value is:

- (1) 1000 s (2) 2000 s
(3) 500 s (4) 3000 s

Q70. The Arrhenius equation relates rate constant to temperature as $k = Ae^{(-E_a/RT)}$. The term 'A' represents:

- (1) Activation energy (2) Gas constant
(3) Pre-exponential (frequency) factor (4) Order of reaction

Q71. For the reaction: $\text{PCl}_5(\text{g}) \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$, the relationship between K_p and K_c is:

- (1) $K_p = K_c$ (2) $K_p = K_c(RT)^{-1}$
(3) $K_p = K_c(RT)$ (4) $K_p = K_c(RT)^2$

Q72. The standard enthalpy of formation of $\text{CO}_2(\text{g})$ is -393.5 kJ/mol . This means:

- (1) 393.5 kJ is required to decompose 1 mol CO_2 (2) 393.5 kJ is released when 1 mol CO_2 forms from its elements in standard states
(3) CO_2 has 393.5 kJ of kinetic energy (4) 393.5 kJ of entropy is produced

Q73. For a spontaneous process at constant temperature and pressure, the Gibbs free energy change (ΔG) must be:

- (1) $\Delta G > 0$ (2) $\Delta G = 0$
(3) $\Delta G < 0$ (4) $\Delta G = \Delta H$

Q74. The Nernst equation for an electrochemical cell is $E = E^\circ - (RT/nF) \ln Q$. At 25°C , for a 2-electron process, the equation simplifies to:

- (1) $E = E^\circ - 0.0592/2 \times \log Q$ (2) $E = E^\circ - 0.0592 \times \log Q$

(3) $E = E^\circ + 0.0592/2 \times \log Q$ (4) $E = E^\circ + 0.0592 \times \log Q$

Q75. The van't Hoff factor 'i' for BaCl_2 (assuming complete dissociation) is:

- (1) 1 (2) 2
(3) 3 (4) 4

Q76. The quantum numbers for the outermost electron of sodium (Na , $Z=11$) are:

- (1) $n=3, l=0, m=0, s=+\frac{1}{2}$ (2) $n=3, l=1, m=0, s=+\frac{1}{2}$
(3) $n=2, l=1, m=0, s=+\frac{1}{2}$ (4) $n=3, l=0, m=1, s=+\frac{1}{2}$

Q77. 5.85 g of NaCl (molar mass = 58.5 g/mol) is dissolved in water to make 1 litre of solution. The molarity of the solution is:

- (1) 0.01 M (2) 0.1 M
(3) 1 M (4) 10 M

Q78. Match List-I (Type of isomerism) with List-II (Example):

List-I: (A) Geometrical isomerism (B) Optical isomerism (C) Conformational isomerism (D) Positional isomerism

List-II: (I) Lactic acid (II) 2-butene (cis/trans) (III) o-, m-, p-cresol (IV) Staggered and eclipsed ethane

	A	B	C	D
(1)	II	I	IV	III
(2)	I	II	III	IV
(3)	II	IV	I	III
(4)	III	I	IV	II

Q79. The VSEPR shape of XeF_4 is:

- (1) Tetrahedral (2) Square pyramidal
(3) Square planar (4) Trigonal bipyramidal

Q80. Which of the following represents the correct decreasing order of acidic strength?

- (1) $\text{HClO}_4 > \text{HClO}_3 > \text{HClO}_2 > \text{HClO}$ (2) $\text{HClO} > \text{HClO}_2 > \text{HClO}_3 > \text{HClO}_4$
(3) $\text{HClO}_3 > \text{HClO}_4 > \text{HClO}_2 > \text{HClO}$ (4) $\text{HClO}_2 > \text{HClO}_3 > \text{HClO} > \text{HClO}_4$

Q81. Lanthanide contraction is caused by:

- (1) Effective nuclear charge decreasing across the lanthanide series (2) Poor shielding of 4f electrons by other 4f electrons, causing ionic radii to decrease
(3) 4f electrons completely shielding nuclear charge (4) Large increase in atomic mass across the series

Q82. The process of zone refining is used to purify:

- (1) Copper (2) Aluminium
(3) Semiconductors (Germanium, Silicon) (4) Iron

Q83. Statement I: Adding an inert gas at constant volume to an equilibrium system does not shift the equilibrium.

Statement II: Adding an inert gas at constant volume does not change the partial pressures of reactants or products.

- (1) Both statements are True; Statement II correctly explains Statement I
(2) Both statements are True; Statement II does NOT explain Statement I
(3) Statement I is True, Statement II is False
(4) Statement I is False, Statement II is True

Q84. The osmotic pressure of a 0.1 M solution of glucose at 27°C is: ($R = 0.0821 \text{ L}\cdot\text{atm}/\text{mol}\cdot\text{K}$)

- (1) 0.821 atm (2) 2.463 atm
(3) 1.23 atm (4) 4.92 atm

Q85. A functional group test: a compound gives red/orange precipitate with 2,4-dinitrophenylhydrazine (DNP) but does NOT give silver mirror with Tollens' reagent. The functional group present is:

- (1) Aldehyde (2) Ketone
(3) Carboxylic acid (4) Alcohol

Section B — Questions 86 to 100 (Attempt any 10)

Instructions: Section B contains 15 questions (Q86–Q100). Attempt any 10. If more than 10 are attempted, first 10 will be evaluated.

Q86. The number of structural isomers possible for C_4H_9Br is:

- (1) 2 (2) 3
(3) 4 (4) 5

Q87. Which of the following will undergo E2 elimination most readily?

- (1) n-propyl chloride (2) Isopropyl chloride
(3) tert-butyl chloride (4) Methyl chloride

Q88. The standard electrode potential (E°) of Zn^{2+}/Zn is -0.76 V and of Cu^{2+}/Cu is $+0.34$ V. The EMF of the Daniel cell ($Zn|Zn^{2+}||Cu^{2+}|Cu$) is:

- (1) 0.42 V (2) 1.10 V
(3) 0.76 V (4) 0.34 V

Q89. Glucose and fructose are examples of:

- (1) Disaccharides (2) Epimers
(3) Anomers (4) Functional group isomers (ketose vs. aldose)

Q90. For a reaction with activation energy $E_a = 50$ kJ/mol, increasing temperature from 300 K to 310 K approximately increases the rate constant by a factor of ($R = 8.314$ J/mol·K; use $\ln k_2/k_1 = E_a/R \times (T_2 - T_1)/(T_1 T_2)$):

- (1) 1.5 (2) 1.9
(3) 2.4 (4) 3.2

Q91. The IUPAC name of the coordination compound $K_3[Fe(CN)_6]$ is:

- (1) Potassium hexacyanoferrate(II) (2) Potassium hexacyanoferrate(III)
(3) Tripotassium hexacyanide iron(III) (4) Potassium ferricyanate

Q92. The number of moles of electrons transferred when 9650 C of charge is passed through an electrolytic cell is: ($F = 96500$ C/mol)

- (1) 0.001 mol (2) 0.01 mol
(3) 0.1 mol (4) 1.0 mol

Q93. Which of the following gases is obtained when copper is treated with dilute nitric acid (HNO_3)?

- (1) NO_2 (2) NO
(3) N_2O (4) NH_3

Q94. The boiling point of a 1 molal aqueous glucose solution is: (K_b for water = $0.52 \text{ K}\cdot\text{kg/mol}$)

- (1) 100.26°C (2) 100.52°C
(3) 101.04°C (4) 99.48°C

Q95. Among LiCl , NaCl , KCl , RbCl , which has the highest lattice enthalpy (most negative)?

- (1) RbCl (2) KCl
(3) NaCl (4) LiCl

Q96. The reaction of aniline with acetic anhydride is called acetylation. The product is:

- (1) N-phenylacetamide (acetanilide) (2) Phenyl acetate
(3) p-aminoacetophenone (4) Benzamide

Q97. Statement I: H_2O has a higher boiling point than H_2S .

Statement II: Water molecules form extensive hydrogen bonds due to high electronegativity and small size of oxygen.

- (1) Both statements are True; Statement II correctly explains Statement I
(2) Both statements are True; Statement II does NOT explain Statement I
(3) Statement I is False, Statement II is True
(4) Statement I is True, Statement II is False

Q98. Bakelite is a thermosetting polymer formed by the condensation of:

- (1) Styrene and acrylonitrile (2) Phenol and formaldehyde
(3) Urea and formaldehyde (4) Melamine and formaldehyde

Q99. The Heisenberg uncertainty principle states that it is impossible to simultaneously determine, with precision, the:

- (1) Mass and velocity of an electron (2) Position and momentum of an electron
(3) Charge and mass of an electron (4) Spin and orbital angular momentum

Q100. The solubility product (K_{sp}) of AgCl is 1.8×10^{-10} . The molar solubility of AgCl in pure water is:

- (1) 1.34×10^{-5} M (2) 1.8×10^{-10} M
(3) 9×10^{-11} M (4) 3.6×10^{-10} M

BOTANY | Questions 101–150

Section A — Questions 101 to 135 (All Compulsory)

Q101. According to Mendel's Law of Independent Assortment, a dihybrid cross ($AaBb \times AaBb$) produces a phenotypic ratio of:

- (1) 3:1 (2) 1:2:1
(3) 9:3:3:1 (4) 1:1:1:1

Q102. The process of DNA replication is called semi-conservative because:

- (1) Only one strand of the original DNA is used as template (2) Each daughter DNA has one original and one newly synthesized strand
(3) The entire original DNA is conserved (4) Replication begins at multiple origins simultaneously

Q103. In the genetic code, a codon consists of:

- (1) One nucleotide (2) Two nucleotides
(3) Three nucleotides (4) Four nucleotides

Q104. The enzyme that joins Okazaki fragments during DNA replication is:

- (1) DNA polymerase I (2) DNA ligase
(3) Primase (4) Helicase

Q105. During translation, the start codon AUG codes for which amino acid?

- (1) Phenylalanine (2) Leucine
- (3) Methionine (4) Valine

Q106. A point mutation where one nitrogenous base is replaced by another of the same type (purine by purine or pyrimidine by pyrimidine) is called:

- (1) Transition (2) Transversion
- (3) Frameshift (4) Translocation

Q107. The biodiversity hotspot concept was introduced by:

- (1) E.O. Wilson (2) Norman Myers
- (3) Robert May (4) David Tilman

Q108. The relationship between clownfish and sea anemone is an example of:

- (1) Commensalism (2) Mutualism
- (3) Parasitism (4) Amensalism

Q109. In a population growth model, the logistic growth equation is $dN/dt = rN(K-N)/K$. 'K' represents:

- (1) Intrinsic rate of natural increase (2) Carrying capacity of the environment
- (3) Population size at time t (4) Rate of birth

Q110. The concept of ecological succession was described comprehensively by:

- (1) Frederic Clements (2) Charles Darwin
- (3) Ernst Haeckel (4) Gregor Mendel

Q111. In C_4 plants, CO_2 is first fixed in the mesophyll cells to form a 4-carbon compound. This compound is:

- (1) Phosphoglycerate (3-PGA) (2) Ribulose biphosphate (RuBP)
- (3) Oxaloacetate (OAA) (4) Pyruvate

Q112. The Calvin cycle (C₃ cycle) fixes CO₂ using the enzyme:

- (1) PEP carboxylase (2) RuBisCO (Ribulose-1,5-bisphosphate carboxylase/oxygenase)
- (3) ATP synthase (4) Phosphofructokinase

Q113. The site of dark reactions (Calvin cycle) in the chloroplast is:

- (1) Thylakoid membrane (2) Thylakoid lumen
- (3) Stroma (4) Outer chloroplast membrane

Q114. Ethylene (C₂H₄) as a plant hormone is associated with:

- (1) Cell elongation and apical dominance (2) Root development and cytokinesis
- (3) Fruit ripening and leaf abscission (4) Stomatal opening and seed dormancy

Q115. The pressure flow hypothesis explains phloem transport. The driving force is:

- (1) Active transport of sugar at the source (2) Turgor pressure gradient from source (high) to sink (low)
- (3) Transpiration pull from the leaves (4) Root pressure

Q116. Dicot stem anatomy differs from monocot stem anatomy in that in dicot stems:

- (1) Vascular bundles are scattered throughout the ground tissue (2) Vascular bundles are arranged in a ring and have cambium (open bundles)
- (3) No pith is present (4) Epidermis has multiple layers

Q117. The function of the casparian strip in the endodermis of the root is to:

- (1) Absorb water from soil (2) Prevent apoplastic movement of water and solutes into the stele
- (3) Facilitate symplastic pathway (4) Store starch reserves

Q118. Which of the following flower types has only stamens?

- (1) Pistillate (2) Staminate
- (3) Bisexual (4) Monoecious

Q119. During meiosis I, homologous chromosomes separate. This is called:

- (1) Equational division (2) Reductional division
- (3) Amitosis (4) Cytokinesis

Q120. The organelle responsible for protein secretion in eukaryotic cells (packaging and transport) is:

- (1) Rough endoplasmic reticulum (2) Golgi apparatus
- (3) Lysosome (4) Mitochondria

Q121. In recombinant DNA technology, restriction endonucleases cut DNA at specific sequences called:

- (1) Palindromic sequences (2) Promoter sequences
- (3) Operator sequences (4) Intron sequences

Q122. The vector pBR322 contains genes for resistance to which two antibiotics?

- (1) Ampicillin and Tetracycline (2) Kanamycin and Chloramphenicol
- (3) Penicillin and Streptomycin (4) Neomycin and Erythromycin

Q123. Bt toxin (from *Bacillus thuringiensis*) kills insects by:

- (1) Blocking nerve impulses (2) Forming pores in the midgut epithelium causing lysis
- (3) Inhibiting ATP synthesis (4) Disrupting DNA replication

Q124. The polymerase chain reaction (PCR) uses an enzyme that remains active at high temperatures. This enzyme is:

- (1) *E. coli* DNA polymerase III (2) Taq polymerase (from *Thermus aquaticus*)
- (3) RNA polymerase (4) Reverse transcriptase

Q125. Match List-I (Algal group) with List-II (Characteristic feature):

List-I: (A) Chlorophyta (B) Rhodophyta (C) Phaeophyta (D) Chrysophyta

List-II: (I) Brown algae; algin in cell wall (II) Green algae; chlorophyll a and b (III) Golden-brown algae; diatoms (IV) Red algae; phycoerythrin pigment

	A	B	C	D
(1)	II	IV	I	III
(2)	I	II	III	IV
(3)	IV	II	I	III
(4)	II	III	IV	I

Q126. Lichen is a symbiotic association between:

- (1) Algae and bryophytes (2) Fungi and cyanobacteria/algae
 (3) Algae and pteridophytes (4) Bacteria and fungi

Q127. The enzyme pepsin functions optimally at:

- (1) pH 7.0–7.4 (neutral) (2) pH 1.5–2.5 (highly acidic)
 (3) pH 8.0–9.0 (alkaline) (4) pH 5.5–6.0 (weakly acidic)

Q128. Which vitamin is synthesized by the human gut bacteria and is essential for blood clotting?

- (1) Vitamin C (2) Vitamin D
 (3) Vitamin K (4) Vitamin B₁₂

Q129. Statement I: Bryophytes are called the amphibians of the plant kingdom.

Statement II: Bryophytes require water for sexual reproduction (fertilization), but can live on land.

- (1) Both statements are True; Statement II correctly explains Statement I
 (2) Both statements are True; Statement II does NOT explain Statement I
 (3) Statement I is True, Statement II is False
 (4) Statement I is False, Statement II is True

Q130. The process by which recombination occurs between non-sister chromatids of homologous chromosomes during meiosis prophase I is:

- (1) Synapsis (2) Crossing over
 (3) Disjunction (4) Centromere splitting

Q131. The first step in aerobic respiration, glycolysis, occurs in the:

- (1) Mitochondrial matrix (2) Inner mitochondrial membrane
(3) Cytoplasm (cytosol) (4) Endoplasmic reticulum

Q132. The net gain of ATP molecules in one complete cycle of the Krebs cycle (per acetyl-CoA) from substrate level phosphorylation is:

- (1) 1 ATP (2) 2 ATP
(3) 3 ATP (4) 38 ATP

Q133. Gene therapy involves:

- (1) Replacing defective genes with functional ones to treat genetic disorders (2) Using antibiotics to treat bacterial infections at the genetic level
(3) Cloning animals for organ transplant (4) Hybridization of crop plants

Q134. The 'species-area relationship' proposed by Alexander von Humboldt states that:

- (1) Larger areas have fewer species (2) Species richness increases with explored area, following the equation $\log S = \log C + Z \log A$
(3) Island species richness is unrelated to island size (4) Species richness decreases with increasing temperature

Q135. Which of the following correctly describes the primary ecological succession on a bare rock?

- (1) Grasses → Lichens → Mosses → Shrubs → Trees (2) Lichens → Mosses → Grasses → Shrubs → Trees
(3) Mosses → Lichens → Grasses → Trees → Shrubs (4) Trees → Shrubs → Grasses → Mosses → Lichens

Section B — Questions 136 to 150 (Attempt any 10)

Instructions: Section B contains 15 questions (Q136–Q150). Attempt any 10. If more than 10 are attempted, first 10 will be evaluated.

Q136. In incomplete dominance, a cross between red (RR) and white (rr) flowers gives pink (Rr) offspring. When two pink flowers are crossed, the ratio of phenotypes in F_2 is:

- (1) 3:1 (red:white) (2) 1:2:1 (red:pink:white)
(3) 1:3 (red:pink) (4) All pink

Q137. The trophic efficiency (energy transfer between trophic levels in an ecosystem) is approximately:

- (1) 100% (2) 50%
(3) 10% (4) 1%

Q138. Absciscic acid (ABA) is called the stress hormone because it:

- (1) Promotes cell elongation under low water conditions (2) Promotes stomatal closure during water stress (drought)
(3) Promotes flowering under long nights (4) Inhibits seed germination permanently

Q139. In Chara (a green alga), the sex organs are:

- (1) Archegonia (female) and Antheridia (male) (2) Oogonia (female) and Globules/Antheridia (male)
(3) Ascogonia (female) and Spermatia (male) (4) Carpogonia (female) and Spermatangia (male)

Q140. Which of the following is NOT a recombinant DNA technique tool?

- (1) Restriction endonuclease (2) DNA ligase
(3) Gel electrophoresis (4) Light microscopy

Q141. The formula for calculating species diversity index (Shannon index H') is:

- (1) $H' = \sum(p_i \ln p_i)$ (2) $H' = -\sum(p_i \ln p_i)$
(3) $H' = N(N-1)/\sum n_i(n_i-1)$ (4) $H' = \sum n_i/N^2$

Q142. The net primary productivity (NPP) of an ecosystem is:

- (1) Total photosynthesis (2) Gross primary productivity minus respiration losses of producers
(3) Energy available to decomposers only (4) Total biomass of all organisms

Q143. The nitrogenous base that is found in RNA but NOT in DNA is:

- (1) Adenine (2) Guanine
(3) Thymine (4) Uracil

Q144. Statement I: In C_4 plants, photorespiration is negligible compared to C_3 plants.

Statement II: Bundle sheath cells in C_4 plants have high CO_2 concentration, suppressing oxygenase activity of RuBisCO.

- (1) Both statements are True; Statement II correctly explains Statement I
(2) Both statements are True; Statement II does NOT explain Statement I
(3) Statement I is False, Statement II is True
(4) Statement I is True, Statement II is False

Q145. The number of ATP molecules produced by complete oxidation of one molecule of glucose (aerobic respiration) in eukaryotes is approximately:

- (1) 2 (2) 8
(3) 36–38 (4) 100

Q146. The study of the distribution of organisms and ecosystems in geographic space and geological time is called:

- (1) Taxonomy (2) Biogeography
(3) Phytogeography (4) Palaeontology

Q147. Totipotency of plant cells means that:

- (1) Each cell can divide indefinitely (2) Any somatic cell has the potential to develop into a complete organism
(3) Cells can photosynthesize independently (4) Each cell can produce its own hormones

Q148. In pneumatophores (breathing roots) of mangroves, the specialized tissue that allows gas exchange is:

- (1) Endodermis (2) Aerenchyma
(3) Sclerenchyma (4) Phloem

Q149. The pollen tube in angiosperms enters the ovule usually through:

- (1) Chalaza (2) Funicle
(3) Micropyle (4) Integuments

Q150. HIV (Human Immunodeficiency Virus) primarily infects which immune cells?

- (1) B lymphocytes (2) Natural killer cells
(3) T helper (CD4⁺) cells (4) Plasma cells

ZOOLOGY | Questions 151–200

Section A — Questions 151 to 185 (All Compulsory)

Q151. The enzyme responsible for the digestion of proteins in the small intestine (secreted by the pancreas as a zymogen) is:

- (1) Pepsin (2) Amylase
(3) Trypsin (4) Lipase

Q152. The hepatic portal vein carries blood from the:

- (1) Liver to the heart (2) Intestines to the liver
(3) Heart to the liver (4) Liver to the intestines

Q153. In the cardiac cycle, the 'lubb' sound is produced by:

- (1) Closure of semilunar valves (2) Closure of atrioventricular (bicuspid and tricuspid) valves
(3) Opening of the aortic valve (4) Contraction of the atria

Q154. The normal resting heart rate (beats per minute) in a healthy adult is:

- (1) 40–50 bpm (2) 72–75 bpm
(3) 100–110 bpm (4) 120 bpm

Q155. The tidal volume of air in normal breathing (volume of air inhaled/exhaled per breath) in a healthy adult is approximately:

- (1) 500 mL (2) 1500 mL
(3) 3500 mL (4) 6000 mL

Q156. The structural and functional unit of the kidney is the:

- (1) Bowman's capsule (2) Glomerulus
(3) Nephron (4) Loop of Henle

Q157. The process by which excess amino acids are converted to urea in the liver is called:

- (1) Glycolysis (2) Deamination followed by the urea cycle
(3) Beta-oxidation (4) Gluconeogenesis

Q158. The resting membrane potential of a neuron is maintained primarily by:

- (1) High intracellular Na^+ concentration (2) Na^+/K^+ ATPase pump maintaining high intracellular K^+ and high extracellular Na^+
(3) High extracellular K^+ concentration (4) Calcium ion channels

Q159. Which hormone is secreted by the posterior pituitary gland (neurohypophysis)?

- (1) Growth hormone (GH) (2) Thyroid Stimulating Hormone (TSH)
(3) Antidiuretic Hormone (ADH/Vasopressin) (4) Follicle Stimulating Hormone (FSH)

Q160. Match List-I (Endocrine gland) with List-II (Hormone secreted):

List-I: (A) Adrenal cortex (B) Islets of Langerhans (β cells) (C) Thyroid gland (D) Corpus luteum

List-II: (I) Progesterone (II) Cortisol (III) Thyroxine (T_4) (IV) Insulin

	A	B	C	D
(1)	II	IV	III	I
(2)	IV	II	I	III
(3)	I	III	IV	II
(4)	III	I	II	IV

Q161. The sliding filament theory of muscle contraction states that:

- (1) Both actin and myosin filaments shorten during contraction (2) Actin filaments slide over myosin filaments, shortening the sarcomere
- (3) Myosin filaments slide over actin filaments, lengthening the I-band (4) Only the H-zone increases during contraction

Q162. Spermatogenesis in humans begins at puberty and occurs in the:

- (1) Epididymis (2) Seminiferous tubules of the testes
- (3) Vas deferens (4) Prostate gland

Q163. The luteal phase of the menstrual cycle is characterized by high levels of:

- (1) FSH and LH (2) Estrogen and Progesterone (from corpus luteum)
- (3) Only estrogen (4) Prolactin and oxytocin

Q164. Oral contraceptive pills (OCPs) prevent pregnancy primarily by:

- (1) Killing sperm in the vagina (2) Preventing fertilization physically
- (3) Suppressing ovulation through synthetic hormones (estrogen + progestin) (4) Preventing implantation only

Q165. The ectoderm of the embryo gives rise to:

- (1) Kidneys and gonads (2) Liver and pancreas
- (3) Skin and nervous system (4) Heart and blood vessels

Q166. Which phylum is characterised by a water vascular system?

- (1) Annelida (2) Mollusca
- (3) Echinodermata (4) Arthropoda

Q167. The body plan of Porifera (sponges) is based on:

- (1) Radial symmetry with organ level of organization (2) Cellular level of organization with no true tissues
- (3) Bilateral symmetry with coelom (4) Tissue level of organization

Q168. Which of the following is the correct matching of phylum and its distinguishing feature?

- (1) Platyhelminthes — pseudocoelom, bilateral symmetry (2) Nematoda — true coelom, body cavity lined by mesoderm
(3) Annelida — metamerism (true segmentation), closed circulatory system (4) Arthropoda — soft body, mantle, radula

Q169. DNA fingerprinting uses which technique to identify individuals based on variations in repetitive DNA sequences?

- (1) PCR only (2) VNTR (Variable Number Tandem Repeats) analysis using Southern blotting
(3) Gel electrophoresis of total genomic DNA (4) Restriction mapping of coding sequences

Q170. Sickle cell anaemia is caused by a point mutation in the beta-globin gene. This mutation changes:

- (1) Glutamic acid to Valine at position 6 (2) Valine to Glutamic acid at position 6
(3) Lysine to Valine at position 6 (4) Alanine to Glutamic acid at position 6

Q171. In sex determination of humans (XX-XY system), the sex of the offspring is determined by:

- (1) The type of egg (X or Y) (2) The type of sperm (X or Y)
(3) Environmental temperature (4) Maternal chromosomal constitution

Q172. The Hardy-Weinberg equilibrium states that allele frequencies in a population remain constant in the absence of:

- (1) Any of: mutation, gene flow, genetic drift, non-random mating, natural selection (2) Only mutation
(3) Only natural selection (4) Only genetic drift

Q173. Statement I: Industrial melanism in *Biston betularia* moths is an example of natural selection.
Statement II: Dark moths survived better in polluted industrial areas because they were camouflaged against soot-darkened tree bark.

- (1) Both statements are True; Statement II correctly explains Statement I
(2) Both statements are True; Statement II does NOT explain Statement I
(3) Statement I is False, Statement II is True
(4) Statement I is True, Statement II is False

Q174. The primary immune response is characterized by:

- (1) Rapid and high antibody production on first exposure
- (2) Slow and low antibody production on first exposure, but creates memory cells
- (3) Only T-cell activation
- (4) Production of IgM only, no memory cells

Q175. Typhoid fever is caused by:

- (1) Plasmodium vivax
- (2) Salmonella typhi
- (3) Mycobacterium tuberculosis
- (4) Wuchereria bancrofti

Q176. The biogas produced from animal dung in biogas plants contains primarily:

- (1) Carbon dioxide and hydrogen
- (2) Methane (CH_4) and carbon dioxide (CO_2)
- (3) Hydrogen sulfide and ammonia
- (4) Ethanol and carbon dioxide

Q177. In animal husbandry, 'multiple ovulation embryo transfer technology' (MOET) is used to:

- (1) Increase the milk production of cows
- (2) Produce multiple high-quality offspring from superior female cattle
- (3) Treat diseases of livestock
- (4) Improve feed efficiency in poultry

Q178. Binary fission, budding, and fragmentation are all types of:

- (1) Sexual reproduction
- (2) Asexual reproduction
- (3) Vegetative propagation only in plants
- (4) Parthenogenesis

Q179. The blastocyst implants in the uterine wall approximately how many days after fertilization?

- (1) 1–2 days
- (2) 5–7 days
- (3) 14 days
- (4) 28 days

Q180. Gastrulation involves the formation of the three primary germ layers. The correct sequence of germ layers from outside to inside is:

- (1) Mesoderm → Endoderm → Ectoderm
- (2) Ectoderm → Mesoderm → Endoderm
- (3) Endoderm → Mesoderm → Ectoderm
- (4) Ectoderm → Endoderm → Mesoderm

Q181. The greenhouse effect is primarily caused by an increase in atmospheric concentration of:

- (1) Nitrogen (N_2) (2) Oxygen (O_2)
(3) Carbon dioxide (CO_2) and methane (CH_4) (4) Argon (Ar)

Q182. Eutrophication of water bodies is caused by excessive:

- (1) Sedimentation of silt (2) Nutrient enrichment (especially nitrogen and phosphorus), causing algal bloom
(3) Heavy metal contamination (4) Thermal pollution only

Q183. Match List-I (Disease) with List-II (Causative agent / Vector):

List-I: (A) Malaria (B) Filariasis (C) Ascariasis (D) Amoebiasis

List-II: (I) Wuchereria bancrofti, Culex mosquito (II) Entamoeba histolytica (III) Plasmodium, Anopheles mosquito (IV) Ascaris lumbricoides

	A	B	C	D
(1)	III	I	IV	II
(2)	I	III	II	IV
(3)	II	IV	III	I
(4)	IV	I	II	III

Q184. The spinal cord is protected by three meninges. From outermost to innermost, they are:

- (1) Pia mater → Arachnoid mater → Dura mater (2) Dura mater → Arachnoid mater → Pia mater
(3) Arachnoid mater → Dura mater → Pia mater (4) Pia mater → Dura mater → Arachnoid mater

Q185. Statement I: Opioids (morphine, heroin) are analgesics that also produce euphoria and are highly addictive.

Statement II: Opioids bind to specific receptors in the central nervous system, mimicking endogenous endorphins and suppressing pain signals.

- (1) Both statements are True; Statement II correctly explains Statement I
(2) Both statements are True; Statement II does NOT explain Statement I
(3) Statement I is True, Statement II is False

(4) Statement I is False, Statement II is True

Section B — Questions 186 to 200 (Attempt any 10)

Instructions: Section B contains 15 questions (Q186–Q200). Attempt any 10. If more than 10 are attempted, first 10 will be evaluated.

Q186. The juxtaglomerular apparatus (JGA) in the kidney secretes renin when:

- (1) Blood pressure and blood volume are high (2) Blood pressure is low, activating the renin-angiotensin-aldosterone system
(3) Blood glucose is elevated (4) The bladder is full

Q187. Which blood group is the universal donor?

- (1) AB (2) A
(3) B (4) O

Q188. The corpus callosum in the human brain connects the:

- (1) Cerebellum to the brainstem (2) Two cerebral hemispheres
(3) Hypothalamus to the pituitary (4) Thalamus to the cortex

Q189. In a Testcross, a plant showing dominant phenotype is crossed with a homozygous recessive (aa). If the offspring ratio is 1:1 (dominant:recessive), the tested plant is:

- (1) Homozygous dominant (AA) (2) Heterozygous (Aa)
(3) Homozygous recessive (aa) (4) Cannot be determined

Q190. Adaptive radiation refers to:

- (1) Migration of a species to a new geographic area (2) Evolution of diverse species from a common ancestor, adapting to different ecological niches
(3) Convergent evolution of unrelated species (4) Extinction of ancestral species

Q191. The causative agent of AIDS is HIV. HIV is a:

- (1) DNA virus (2) Retrovirus (RNA virus using reverse transcriptase)

(3) Bacteriophage (4) Prion

Q192. In honeybee society (apiculture), the haploid males are called:

- (1) Workers (2) Queens
(3) Drones (4) Sentinels

Q193. Regeneration as a mode of asexual reproduction is shown by:

- (1) Hydra and Planaria (2) Amoeba only
(3) Earthworm only (4) Paramecium

Q194. The Rh factor in blood is named after the Rhesus monkey. Rh incompatibility can cause hemolytic disease of the newborn (erythroblastosis fetalis) when:

- (1) Both parents are Rh+ (2) Rh– mother carries Rh+ fetus (second pregnancy)
(3) Rh+ mother carries Rh– fetus (4) Both parents are Rh–

Q195. The enzyme reverse transcriptase in HIV performs which function?

- (1) Converts host cell DNA into viral RNA (2) Converts viral RNA into DNA that integrates into the host genome
(3) Replicates viral DNA directly (4) Translates viral RNA into protein

Q196. Which layer of the gastrointestinal tract contains mucus-secreting goblet cells?

- (1) Serosa (2) Muscularis externa
(3) Mucosa (epithelium) (4) Submucosa

Q197. The BOD (Biochemical Oxygen Demand) of a water body is a measure of:

- (1) Total dissolved oxygen in water (2) Organic pollution; amount of oxygen needed by microbes to decompose organic matter
(3) Total number of bacteria per mL (4) Chemical oxygen demand from industrial effluents

Q198. In Mendel's experiments with pea plants, the trait 'round seed' was dominant over 'wrinkled seed'. When two F_1 plants (Rr) were crossed, the F_2 ratio of round:wrinkled was:

- (1) 1:1 (2) 2:1
(3) 3:1 (4) 1:2:1

Q199. The functional unit of the lungs for gas exchange is the:

- (1) Bronchiole (2) Bronchus
(3) Alveolus (4) Trachea

Q200. Which of the following is NOT a method of in vitro fertilization (IVF/Assisted Reproductive Technology)?

- (1) GIFT (Gamete IntraFallopian Transfer) (2) ICSI (Intracytoplasmic Sperm Injection)
(3) IUI (Intrauterine Insemination) (4) Oral contraceptive pill (OCP)

ANSWER KEY — NEET UG 2026 Prediction Paper Set 1

Correct option numbers listed below. Use +4 for correct, –1 for incorrect.

PHYSICS (Q1–Q50)

Q1 → (1)	Q2 → (3)	Q3 → (2)	Q4 → (1)	Q5 → (2)	Q6 → (3)	Q7 → (3)
Q8 → (1)	Q9 → (2)	Q10 → (2)	Q11 → (3)	Q12 → (2)	Q13 → (3)	Q14 → (1)
Q15 → (1)	Q16 → (1)	Q17 → (2)	Q18 → (2)	Q19 → (1)	Q20 → (1)	Q21 → (2)
Q22 → (1)	Q23 → (1)	Q24 → (2)	Q25 → (3)	Q26 → (1)	Q27 → (3)	Q28 → (2)
Q29 → (2)	Q30 → (1)	Q31 → (3)	Q32 → (1)	Q33 → (1)	Q34 → (3)	Q35 → (3)
Q36 → (1)	Q37 → (1)	Q38 → (1)	Q39 → (2)	Q40 → (1)	Q41 → (2)	Q42 → (2)
Q43 → (2)	Q44 → (1)	Q45 → (3)	Q46 → (1)	Q47 → (3)	Q48 → (2)	Q49 → (2)
Q50 → (2)						

CHEMISTRY (Q51–Q100)

Q51 → (1)	Q52 → (1)	Q53 → (2)	Q54 → (1)	Q55 → (2)	Q56 → (3)	Q57 → (3)
Q58 → (1)	Q59 → (3)	Q60 → (1)	Q61 → (3)	Q62 → (2)	Q63 → (2)	Q64 → (2)
Q65 → (4)	Q66 → (3)	Q67 → (1)	Q68 → (2)	Q69 → (1)	Q70 → (3)	Q71 → (3)

Q72 → (2)	Q73 → (3)	Q74 → (1)	Q75 → (3)	Q76 → (1)	Q77 → (2)	Q78 → (1)
Q79 → (3)	Q80 → (1)	Q81 → (2)	Q82 → (3)	Q83 → (1)	Q84 → (2)	Q85 → (2)
Q86 → (3)	Q87 → (3)	Q88 → (2)	Q89 → (4)	Q90 → (2)	Q91 → (2)	Q92 → (3)
Q93 → (2)	Q94 → (2)	Q95 → (4)	Q96 → (1)	Q97 → (1)	Q98 → (2)	Q99 → (2)
Q100 → (1)						

BOTANY (Q101–Q150)

Q101 → (3)	Q102 → (2)	Q103 → (3)	Q104 → (2)	Q105 → (3)	Q106 → (1)	Q107 → (2)
Q108 → (2)	Q109 → (2)	Q110 → (1)	Q111 → (3)	Q112 → (2)	Q113 → (3)	Q114 → (3)
Q115 → (2)	Q116 → (2)	Q117 → (2)	Q118 → (2)	Q119 → (2)	Q120 → (2)	Q121 → (1)
Q122 → (1)	Q123 → (2)	Q124 → (2)	Q125 → (1)	Q126 → (2)	Q127 → (2)	Q128 → (3)
Q129 → (1)	Q130 → (2)	Q131 → (3)	Q132 → (1)	Q133 → (1)	Q134 → (2)	Q135 → (2)
Q136 → (2)	Q137 → (3)	Q138 → (2)	Q139 → (2)	Q140 → (4)	Q141 → (2)	Q142 → (2)
Q143 → (4)	Q144 → (1)	Q145 → (3)	Q146 → (2)	Q147 → (2)	Q148 → (2)	Q149 → (3)
Q150 → (3)						

ZOOLOGY (Q151–Q200)

Q151 → (3)	Q152 → (2)	Q153 → (2)	Q154 → (2)	Q155 → (1)	Q156 → (3)	Q157 → (2)
Q158 → (2)	Q159 → (3)	Q160 → (1)	Q161 → (2)	Q162 → (2)	Q163 → (2)	Q164 → (3)
Q165 → (3)	Q166 → (3)	Q167 → (2)	Q168 → (3)	Q169 → (2)	Q170 → (1)	Q171 → (2)
Q172 → (1)	Q173 → (1)	Q174 → (2)	Q175 → (2)	Q176 → (2)	Q177 → (2)	Q178 → (2)
Q179 → (2)	Q180 → (2)	Q181 → (3)	Q182 → (2)	Q183 → (1)	Q184 → (2)	Q185 → (1)
Q186 → (2)	Q187 → (4)	Q188 → (2)	Q189 → (2)	Q190 → (2)	Q191 → (2)	Q192 → (3)
Q193 → (1)	Q194 → (2)	Q195 → (2)	Q196 → (3)	Q197 → (2)	Q198 → (3)	Q199 → (3)
Q200 → (4)						

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