

Re-Examination of NEET (UG)-2024

Total Time Allowed : 3 Hours 20 Minutes	Maximum Marks : 720	Total Questions : 200	Date : June 23, 2024
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Physics

Section - A

Question 1: The magnetic potential energy, when a magnetic bar of magnetic moment $\vec{m}$ is placed perpendicular to the magnetic field $\vec{B}$ is ...

Options:

- (1) $-\frac{mB}{2}$
- (2) Zero
- (3) $-mB$
- (4) mB

Question 2: A bob is whirled in a horizontal circle by means of a string at an initial speed of 10 rpm. If the tension in the string is quadrupled while keeping the radius constant, the new speed is:

Options:

- (1) 20 rpm
- (2) 40 rpm
- (3) 5 rpm
- (4) 10 rpm

Question 3: A metal cube of side 5 cm is charged with $6 \mu\text{C}$. The surface charge density on the cube is ...

Options:

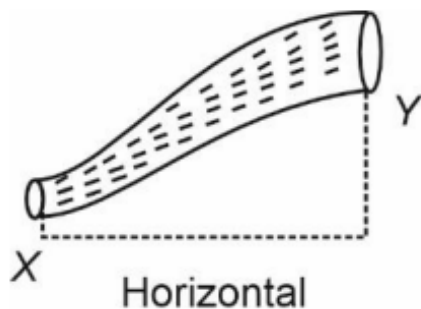
- (1) $0.125 \times 10^{-3} \text{ C m}^{-2}$
- (2) $0.25 \times 10^{-3} \text{ C m}^{-2}$
- (3) $4 \times 10^{-3} \text{ C m}^{-2}$
- (4) $0.4 \times 10^{-3} \text{ C m}^{-2}$

Question 4: The incorrect relation for a diamagnetic material (all the symbols carry their usual meaning and ϵ is a small positive number) is:

Options:

- (1) $\mu < \mu_0$
- (2) $0 \leq \mu_r < 1$
- (3) $-1 \leq \chi < 0$
- (4) $1 < \mu_r < 1 + \epsilon$

Question 5: An ideal fluid is flowing in a non-uniform cross-sectional tube XY (as shown in the figure) from end X to end Y. If K_1 and K_2 are the kinetic energy per unit volume of the fluid at X and Y respectively, then the correct option is:



Options:

- (1) $K_1 = K_2$
- (2) $2K_1 = K_2$
- (3) $K_1 > K_2$
- (4) $K_1 < K_2$

Question 6: The escape velocity for Earth is v . A planet having 9 times mass that of Earth and radius, 16 times that of Earth, has the escape velocity of:

Options:

- (1) $\frac{v}{3}$
- (2) $\frac{2v}{3}$
- (3) $\frac{3v}{4}$
- (4) $\frac{9v}{4}$

Question 7: An electron and an alpha particle are accelerated by the same potential difference. Let λ_e and λ_α denote the de-Broglie wavelengths of the electron and the alpha particle, respectively, then:

Options:

- (1) $\lambda_e > \lambda_\alpha$
- (2) $\lambda_e = 4\lambda_\alpha$
- (3) $\lambda_e = \lambda_\alpha$
- (4) $\lambda_e < \lambda_\alpha$

Question 8: An object moving along the horizontal x-direction with kinetic energy 10 J is displaced through $\vec{x} = (3\hat{i})$ m by the force $\vec{F} = (-2\hat{i} + 3\hat{j})$ N. The kinetic energy of the object at the end of the displacement $\vec{x}$ is ...

Options:

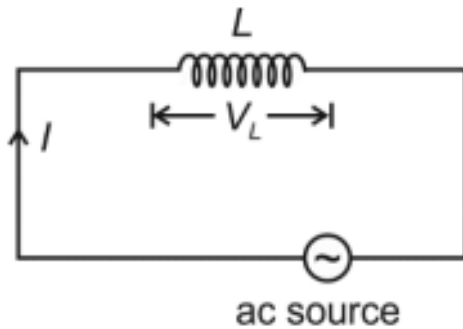
- (1) 10 J
- (2) 16 J
- (3) 4 J
- (4) 6 J

Question 9: An object falls from a height of 10 m above the ground. After striking the ground it loses 50% of its kinetic energy. The height upto which the object can rebound from the ground is:

Options:

- (1) 7.5 m
- (2) 10 m
- (3) 2.5 m
- (4) 5 m

Question 10: In the circuit shown below, the inductance L is connected to an ac source. The current flowing in the circuit is $I = I_0 \sin \omega t$. The voltage drop (V_L) across L is:



Options:

- (1) $\omega L I_0 \sin \omega t$
- (2) $\frac{I_0}{\omega L} \sin \omega t$
- (3) $\frac{I_0}{\omega L} \cos \omega t$
- (4) $\omega L I_0 \cos \omega t$

Question 11: A 12 pF capacitor is connected to a 50 V battery. The electrostatic energy stored in the capacitor in nJ is ...

Options:

- (1) 15
- (2) 7.5
- (3) 0.3
- (4) 150

Question 12: A uniform wire of diameter d carries a current of 100 mA when the mean drift velocity of electrons in the wire is v . For a wire of diameter $\frac{d}{2}$ of the same material to carry a current of 200 mA, the mean drift velocity of electrons in the wire is ...

Options:

- (1) $4v$
- (2) $8v$
- (3) v
- (4) $2v$

Question 13: In an electrical circuit, the voltage is measured as $V = (200 \pm 4)$ volt and the current is measured as $I = (20 \pm 0.2)$ A. The value of the

resistance is:

Options:

- (1) $(10 \pm 4.2) \Omega$
 - (2) $(10 \pm 0.3) \Omega$
 - (3) $(10 \pm 0.1) \Omega$
 - (4) $(10 \pm 0.8) \Omega$
-

Question 14: A step-up transformer is connected to an ac mains supply of 220 V to operate at 11000 V, 88 watt. The current in the secondary circuit, ignoring the power loss in the transformer, is:

Options:

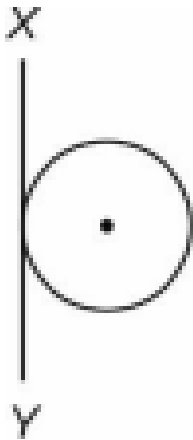
- (1) 8 mA
 - (2) 4 mA
 - (3) 0.4 A
 - (4) 4 A
-

Question 15: A particle is moving along the x-axis with its position (x) varying with time (t) as $x = \alpha t^4 + \beta t^2 + \gamma t + \delta$. The ratio of its initial velocity to its initial acceleration, respectively, is:

Options:

- (1) $2\alpha : \delta$
 - (2) $\gamma : 2\beta$
 - (3) $4\alpha : \beta$
 - (4) $\gamma : 2\beta$
-

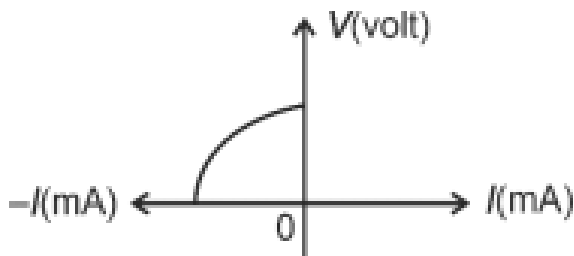
Question 16: The radius of gyration of a solid sphere of mass 5 kg about XY is 5 m as shown in the figure. The radius of the sphere is $\frac{5x}{\sqrt{7}}$ m, then the value of x is:



Options:

- (1) 5
- (2) $\sqrt{2}$
- (3) $\sqrt{3}$
- (4) $\sqrt{5}$

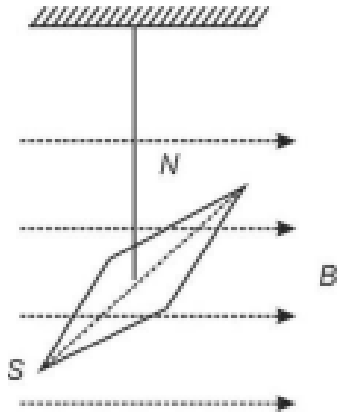
Question 17: The I-V characteristics shown above are exhibited by a:



Options:

- (1) Light emitting diode
- (2) Zener diode
- (3) Photodiode
- (4) Solar cell

Question 18: The magnetic moment and moment of inertia of a magnetic needle as shown are, respectively, $1.0 \times 10^{-2} \text{ A m}^2$ and $\frac{10^{-6}}{\pi^2} \text{ kg m}^2$. If it completes 10 oscillations in 10 s, the magnitude of the magnetic field is:



Options:

- (1) 0.4 T
- (2) 4 T
- (3) 0.4 mT
- (4) 4 mT

Question 19: The capacitance of a capacitor with charge q and a potential difference V depends on:

Options:

- (1) both q and V
- (2) the geometry of the capacitor
- (3) q only
- (4) V only

Question 20: Given below are two statements:

Statement I: Image formation needs regular reflection and/or refraction.

Statement II: The variety in colour of objects we see around us is due to the constituent colours of the light incident on them.

In the light of the above statements, choose the most appropriate answer from the options given below:

Options:

- (1) Statement I is correct but Statement II is incorrect
- (2) Statement I is incorrect but Statement II is correct
- (3) Both Statement I and Statement II are correct

(4) Both Statement I and Statement II are incorrect

Question 21: A uniform metal wire of length l has $10\ \Omega$ resistance. Now this wire is stretched to a length $2l$ and then bent to form a perfect circle. The equivalent resistance across any arbitrary diameter of that circle is:

Options:

- (1) $10\ \Omega$
- (2) $5\ \Omega$
- (3) $40\ \Omega$
- (4) $20\ \Omega$

Question 22: The spectral series which corresponds to the electronic transition from the levels $n_2 = 5, 6, \dots$ to the level $n_1 = 4$ is:

Options:

- (1) Pfund series
- (2) Brackett series
- (3) Lyman series
- (4) Balmer series

Question 23: Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R.

Assertion A: Houses made of concrete roofs overlaid with foam keep the room hotter during summer.

Reason R: The layer of foam insulation prohibits heat transfer, as it contains air pockets.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) A is true but R is false.
- (2) A is false but R is true.
- (3) Both A and R are true and R is the correct explanation of A.
- (4) Both A and R are true but R is NOT the correct explanation of A.

Question 24: A particle executing simple harmonic motion with amplitude A

has the same potential and kinetic energies at the displacement:

Options:

- (1) $2\sqrt{A}$
 - (2) $\frac{A}{2}$
 - (3) $\frac{A}{\sqrt{2}}$
 - (4) $A\sqrt{2}$
-

Question 25: Two slits in Young's double slit experiment are 1.5 mm apart and the screen is placed at a distance of 1 m from the slits. If the wavelength of light used is 600×10^{-9} m, then the fringe separation is:

Options:

- (1) 4×10^{-5} m
 - (2) 9×10^{-8} m
 - (3) 4×10^{-7} m
 - (4) 4×10^{-4} m
-

Question 26: Water is used as a coolant in a nuclear reactor because of its:

Options:

- (1) High thermal expansion coefficient
 - (2) High specific heat capacity
 - (3) Low density
 - (4) Low boiling point
-

Question 27: The pitch of an error-free screw gauge is 1 mm, and there are 100 divisions on the circular scale. While measuring the diameter of a thick wire, the pitch scale reads 1 mm, and the 63^{rd} division on the circular scale coincides with the reference line. The diameter of the wire is:

Options:

- (1) 1.63 cm
- (2) 0.163 cm
- (3) 0.163 m
- (4) 1.63 m

Question 28: Let us consider two solenoids A and B, made from the same magnetic material of relative permeability μ , and equal area of cross-section. Length of A is twice that of B, and the number of turns per unit length in A is half that of B. The ratio of self-inductances of the two solenoids, $L_A : L_B$ is:

Options:

- (1) 1:2
- (2) 2:1
- (3) 8:1
- (4) 1:8

Question 29: When the output of an OR gate is applied as input to a NOT gate, then the combination acts as a:

Options:

- (1) NAND gate
- (2) NOR gate
- (3) AND gate
- (4) OR gate

Question 30: Interference pattern can be observed due to superposition of the following waves:

- A. $y = a \sin \omega t$ B. $y = a \sin 2\omega t$ C. $y = a \sin(\omega t - \phi)$ D. $y = a \sin 3\omega t$

Choose the correct answer from the options given below.

Options:

- (1) B and C
- (2) B and D
- (3) A and C
- (4) A and B

Question 31: If ϕ is the work function of photosensitive material in eV and light of wavelength of numerical value $\lambda = \frac{hc}{e}$ metre, is incident on it with energy above its threshold value at an instant, then the maximum kinetic energy of the photo-electron ejected by it at that instant (Take h-Plank's constant, c-velocity of light in free space) is (in SI units):

Options:

- (1) $e + 2\phi$
 - (2) $2e - \phi$
 - (3) $e - \phi$
 - (4) $e + \phi$
-

Question 32: The electromagnetic radiation which has the smallest wavelength are:

Options:

- (1) Ultraviolet rays
 - (2) Gamma rays
 - (3) X-rays
 - (4) Microwaves
-

Question 33: The equilibrium state of a thermodynamic system is described by:

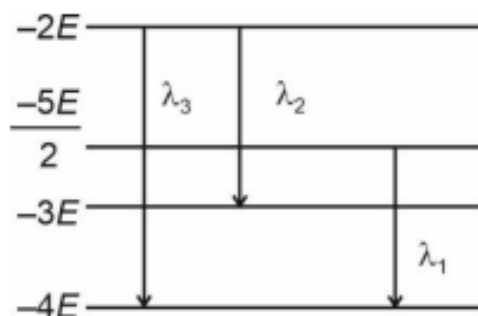
A. Pressure B. Total heat C. Temperature D. Volume E. Work done

Choose the most appropriate answer from the options given below.

Options:

- (1) A, B and E only
 - (2) B, C and D only
 - (3) A, B and C only
 - (4) A, C and D only
-

Question 34: Some energy levels of a molecule are shown in the figure with their wavelengths of transitions. Then:



Options:

- (1) $\lambda_3 > \lambda_2, \lambda_1 = 2\lambda_2$
 - (2) $\lambda_3 > \lambda_2, \lambda_1 = 4\lambda_2$
 - (3) $\lambda_1 > \lambda_2, \lambda_2 = 2\lambda_3$
 - (4) $\lambda_2 > \lambda_1, \lambda_2 = 2\lambda_3$
-

Question 35: A box of mass 5 kg is pulled by a cord, up along a frictionless plane inclined at 30° with the horizontal. The tension in the cord is 30 N. The acceleration of the box is (Take $g = 10 \text{ m s}^{-2}$)

Options:

- (1) 2 m s^{-2}
 - (2) Zero
 - (3) 0.1 m s^{-2}
 - (4) 1 m s^{-2}
-

Section - B

Question 36: If the ratio of relative permeability and relative permittivity of a uniform medium is 1:4. The ratio of the magnitudes of electric field intensity (E) to the magnetic field intensity (H) of an EM wave propagating in that medium is ...
[Given that $\sqrt{\frac{\mu_0}{\epsilon_0}} = 120\pi$]

Options:

- (1) $30\pi : 1$
 - (2) $1 : 120\pi$
 - (3) $60\pi : 1$
 - (4) $120\pi : 1$
-

Question 37: The value of electric potential at a distance of 9 cm from the point charge $4 \times 10^{-7} \text{ C}$ is ...

$$\left[\text{Given } \frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ N m}^2\text{C}^{-2} \right]$$

Options:

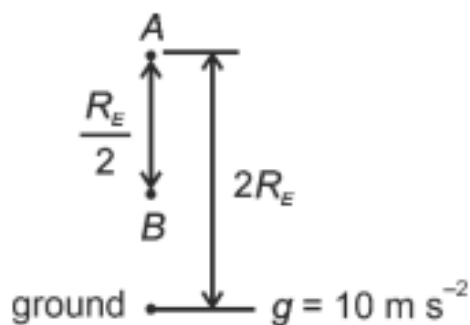
- (1) 4×10^2 V
- (2) 44.4 V
- (3) 4.4×10^5 V
- (4) 4×10^4 V

Question 38: The displacement of a travelling wave is $y = C \sin\left(\frac{2\pi}{\lambda}(at - x)\right)$, where t is time, x is distance, and λ is the wavelength, all in S.I. units. Then the frequency of the wave is:

Options:

- (1) $\frac{2\pi\lambda}{a}$
- (2) $\frac{2\pi a}{\lambda}$
- (3) $\frac{\lambda}{a}$
- (4) $\frac{a}{\lambda}$

Question 39: An object of mass 100 kg falls from point A to B as shown in the figure. The change in its weight, corrected to the nearest integer is (R_E is the radius of the Earth)



Options:

- (1) 49 N
- (2) 89 N
- (3) 5 N
- (4) 10 N

Question 40: The potential energy of a particle moving along the x-direction varies as $V = \frac{Ax^2}{\sqrt{x+B}}$. The dimensions of $\frac{A^2}{B}$ are:

Options:

- (1) $[M^{\frac{3}{2}}L^{\frac{1}{2}}T^{-3}]$
 (2) $[M^{\frac{1}{2}}LT^{-3}]$
 (3) $[M^2L^{\frac{1}{2}}T^{-4}]$
 (4) $[ML^2T^{-4}]$

Question 41: The two-dimensional motion of a particle, described by $\vec{r} = (\hat{i} + 2\hat{j})A \cos \omega t$ is:

Options:

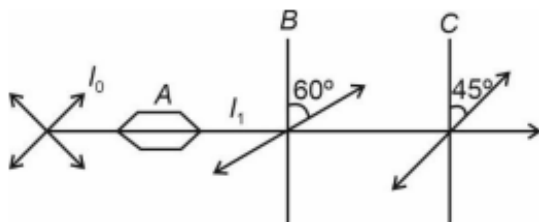
- A. parabolic path
 B. elliptical path
 C. periodic motion
 D. simple harmonic motion

Choose the correct answer from the options given below:

Options:

- (1) B, C and D only
 (2) A, B and C only
 (3) A, C and D only
 (4) C and D only

Question 42: A beam of unpolarized light of intensity I_0 is passed through a polaroid A, then through another polaroid B, oriented at 60° , and finally through another polaroid C, oriented at 45° relative to B as shown. The intensity of emergent light is:



Options:

- (1) $\frac{I_0}{16}$
 (2) $\frac{I_0}{4}$
 (3) $\frac{I_0}{2}$
 (4) $\frac{I_0}{32}$

Question 43: Select the correct statements among the following:

A. Slow neutrons can cause fission in ${}_{92}^{235}\text{U}$ than fast neutrons.

B. α -rays are Helium nuclei.

C. β -rays are fast-moving electrons or positrons.

D. γ -rays are electromagnetic radiations of wavelengths larger than X-rays.

Choose the most appropriate answer from the options given below:

Options:

(1) A, B and C only

(2) A, B and D only

(3) A and B only

(4) C and D only

Question 44: Let ω_1, ω_2 , and ω_3 be the angular speed of the second hand, minute hand, and hour hand of a smoothly running analog clock, respectively. If x_1, x_2 , and x_3 are their respective angular distances in 1 minute, then the factor which remains constant (k) is:

Options:

(1) $\frac{\omega_1}{x_1} = \frac{\omega_2}{x_2} = \frac{\omega_3}{x_3} = k$

(2) $\omega_1 x_1 = \omega_2 x_2 = \omega_3 x_3 = k$

(3) $\omega_1^2 x_1 = \omega_2^2 x_2 = \omega_3^2 x_3 = k$

(4) $\omega_1 x_1^2 = \omega_2 x_2^2 = \omega_3 x_3^2 = k$

Question 45: The magnetic moment of an iron bar is M . It is now bent in such a way that it forms an arc section of a circle subtending an angle of 60° at the centre. The magnetic moment of this arc section is:

Options:

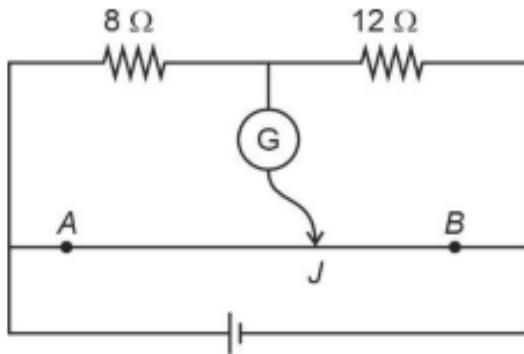
(1) $\frac{3M}{\pi}$

(2) $\frac{4M}{\pi}$

(3) $\frac{M}{\pi}$

(4) $\frac{2M}{\pi}$

Question 46: The given circuit shows a uniform straight wire AB of 40 cm length fixed at both ends. In order to get zero reading in the galvanometer G, the free end of J is to be placed from B at:



Options:

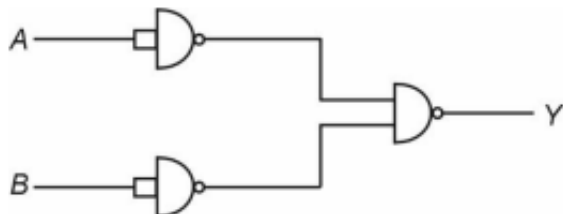
- (1) 32 cm
- (2) 8 cm
- (3) 16 cm
- (4) 24 cm

Question 47: According to the law of equipartition of energy, the number of vibrational modes of a polyatomic gas of constant $\gamma = \frac{C_p}{C_v}$ is C_p, C_v where C_v are the specific heat capacities of the gas at constant pressure and constant volume, respectively):

Options:

- (1) $\frac{4+3\gamma}{\gamma-1}$
- (2) $\frac{3+4\gamma}{\gamma-1}$
- (3) $\frac{4-3\gamma}{\gamma-1}$
- (4) $\frac{3-4\gamma}{\gamma-1}$

Question 48: The output Y for the inputs A and B of the given logic circuit is:



Options:

- (1) $A \cdot B$
- (2) $\bar{A} \cdot \bar{B}$
- (3) $A + B$

(4) $\bar{A} + \bar{B}$

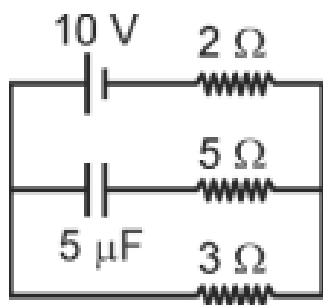
Question 49: The amplitude of the charge oscillating in a circuit decreases exponentially as $Q = Q_0 e^{-Rt/2L}$, where Q_0 is the charge at $t = 0$ s. The time at which charge amplitude decreases to $0.50 Q_0$ is nearly:

[Given that $R = 1.5 \Omega$, $L = 12 \text{ mH}$, $\ln(2) = 0.693$]

Options:

- (1) 19.01 ms
- (2) 11.09 ms
- (3) 19.01 s
- (4) 11.09 s

Question 50: The steady-state current in the circuit shown below is:



Options:

- (1) 0.67 A
- (2) 1.5 A
- (3) 2 A
- (4) 1 A

Chemistry

Section - A

Question 51: The correct decreasing order of atomic radii (pm) of Li, Be, B, and C is:

Options:

- (1) $\text{Be} > \text{Li} > \text{B} > \text{C}$

- (2) $\text{Li} > \text{Be} > \text{B} > \text{C}$
(3) $\text{C} > \text{B} > \text{Be} > \text{Li}$
(4) $\text{Li} > \text{C} > \text{Be} > \text{B}$

Question 52: Following data is for a reaction between reactants A and B:

Rate	[A]	[B]
$\text{mol L}^{-1} \text{ s}^{-1}$		
2×10^{-3}	0.1 M	0.1 M
4×10^{-3}	0.2 M	0.1 M
1.6×10^{-2}	0.2 M	0.2 M

The order of the reaction with respect to A and B, respectively, are

Options:

- (1) 1, 0
(2) 0, 1
(3) 1, 2
(4) 2, 1

Question 53: Given below are two statements:

Statement I: Propene on treatment with diborane gives an addition product with the formula $(\text{CH}_3)_2\text{CH}-\text{B}$.

Statement II: Oxidation of $(\text{CH}_3)_2\text{CH}-\text{B}$ with hydrogen peroxide in presence of NaOH gives propan-2-ol.

In the light of the above statements, choose the most appropriate answer from the options given below:

Options:

- (1) Statement I is correct but Statement II is incorrect
(2) Statement I is incorrect but Statement II is correct
(3) Both Statement I and Statement II are correct
(4) Both Statement I and Statement II are incorrect

Question 54: Baeyer's reagent is :

Options:

- (1) Acidic potassium permanganate solution
(2) Acidic potassium dichromate solution
(3) Cold, dilute, aqueous solution of potassium permanganate

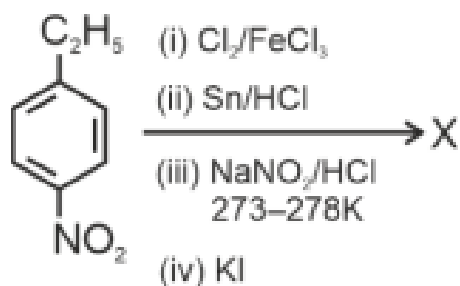
(4) Hot, concentrated solution of potassium permanganate

Question 55: Which of the following molecules has “NON ZERO” dipole moment value?

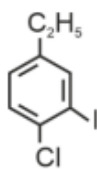
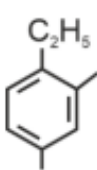
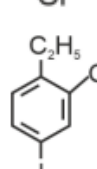
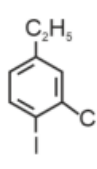
Options:

- (1) CCl_4
- (2) HI
- (3) CO_2
- (4) BF_3

Question 56: The major product X formed in the following reaction sequence is:



Options:

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

Question 57: Which indicator is used in the titration of sodium hydroxide against oxalic acid, and what is the colour change at the end point?

Options:

- (1) Phenolphthalein, pink to yellow
 - (2) Alkaline KMnO_4 , colourless to pink
 - (3) Phenolphthalein, colourless to pink
 - (4) Methyl orange, yellow to pinkish red colour
-

Question 58: Match List-I with List-II :

List-I (Atom/Molecule)		List-II (Property)	
A.	Nitrogen atom	I.	Paramagnetic
B.	Fluorine molecule	II.	Most reactive element in group 18
C.	Oxygen molecule	III.	Element with highest ionisation enthalpy in group 15
D.	Xenon atom	IV.	Strongest oxidising agent

Identify the correct answer from the options given below :

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

Question 59: From the following, select the one which is not an example of corrosion.

Options:

- (1) Rusting of iron object
 - (2) Production of hydrogen by electrolysis of water
 - (3) Tarnishing of silver
 - (4) Development of green coating on copper and bronze ornaments
-

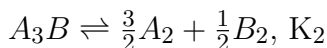
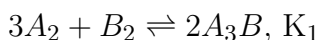
Question 60: Which of the following pairs of ions will have same spin only magnetic moment values within the pair?

- A. Zn^{2+} , Ti^{2+}
- B. Cr^{2+} , Fe^{2+}
- C. Ti^{3+} , Cu^{2+}
- D. V^{2+} , Cu^{+}

Choose the correct answer from the options given below :

- (1) C and D only
- (2) A and D only
- (3) A and B only
- (4) B and C only

Question 61: At a given temperature and pressure, the equilibrium constant values for the equilibria are given below:



The relation between K_1 and K_2 is:

Options:

- (1) $K_1^2 = 2K_2$
- (2) $K_2 = \frac{K_1}{2}$
- (3) $K_1 = \frac{1}{\sqrt{K_2}}$
- (4) $K_2 = \frac{1}{\sqrt{K_1}}$

Question 62: Arrange the following compounds in increasing order of their solubilities in chloroform:

NaCl, CH₃OH, cyclohexane, CH₃CN

Options:

- (1) NaCl < CH₃CN < CH₃OH < Cyclohexane
- (2) CH₃OH < CH₃CN < NaCl < Cyclohexane
- (3) NaCl < CH₃OH < CH₃CN < Cyclohexane
- (4) Cyclohexane < CH₃CN < CH₃OH < NaCl

Question 63: Identify the *incorrect* statement about PCl₅.

Options:

- (1) PCl₅ possesses two different Cl – P – Cl bond angles

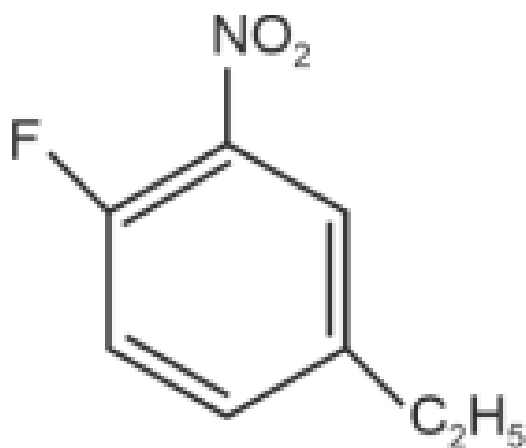
- (2) All five P – Cl bonds are identical in length
 - (3) PCl_5 exhibits sp^3d hybridisation
 - (4) PCl_5 consists of five P – Cl (sigma) bonds
-

Question 64: Choose the correct statement for the work done in the expansion and heat absorbed or released when 5 litres of an ideal gas at 10 atmospheric pressure isothermally expands into vacuum until volume is 15 litres:

Options:

- (1) Both the heat and work done will be greater than zero
 - (2) Heat absorbed will be less than zero and work done will be positive
 - (3) Work done will be zero and heat will also be zero
 - (4) Work done will be greater than zero and heat will remain zero
-

Question 65: The correct IUPAC name of the compound



is:

Options:

- (1) 4-ethyl-1-fluoro-2-nitrobenzene
 - (2) 4-ethyl-1-fluoro-6-nitrobenzene
 - (3) 3-ethyl-6-fluoro-1-nitrobenzene
 - (4) 1-ethyl-4-fluoro-3-nitrobenzene
-

Question 66: Which of the following sets of ions act as oxidizing agents?

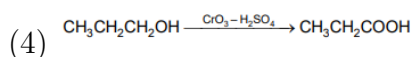
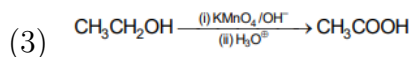
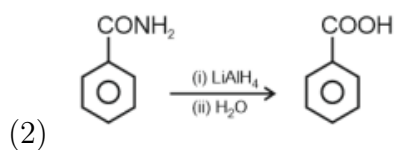
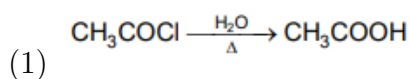
Options:

- (1) Ce^{4+} and Tb^{4+}

- (2) La^{3+} and Lu^{3+}
- (3) Eu^{2+} and Yb^{2+}
- (4) Eu^{2+} and Tb^{4+}

Question 67: Select the *incorrect* reaction among the following:

Options:



Question 68: The UV-visible absorption bands in the spectra of lanthanoid ions are 'X', probably because of the excitation of electrons involving 'Y'. The 'X' and 'Y', respectively, are :

Options:

- (1) Broad and f orbitals
- (2) Narrow and f orbitals
- (3) Broad and d and f orbitals
- (4) Narrow and d and f orbitals

Question 69: Ethylene diaminetetraacetate ion is a/an:

Options:

- (1) hexadentate ligand
- (2) ambidentate ligand
- (3) monodentate ligand
- (4) bidentate ligand

Question 70: The amount of glucose required to prepare 250 mL of $\frac{M}{20}$ aqueous solution is : (Molar mass of glucose : 180 g mol^{-1})

Options:

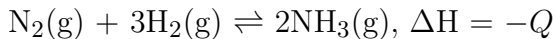
- (1) 2.25 g
- (2) 4.5 g
- (3) 0.44 g
- (4) 1.125 g

Question 71: Identify the *incorrect* statement from the following :

Options:

- (1) The acidic strength of HX (X = F, Cl, Br and I) follows the order : HF > HCl > HBr > HI.
- (2) Fluorine exhibits -1 oxidation state whereas other halogens exhibit +1, +3, +5 and +7 oxidation states also.
- (3) The enthalpy of dissociation of F₂ is smaller than that of Cl₂.
- (4) Fluorine is stronger oxidising agent than chlorine.

Question 72: For the reaction in equilibrium

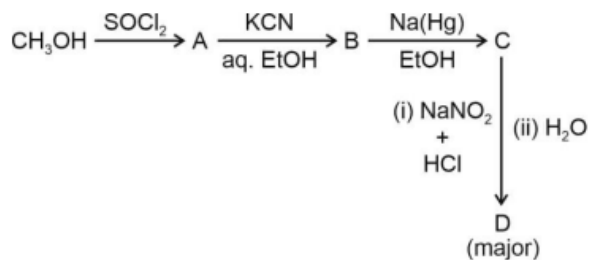


Reaction is favoured in forward direction by:

Options:

- (1) use of catalyst
- (2) decreasing concentration of N₂
- (3) low pressure, high temperature and high concentration of ammonia
- (4) high pressure, low temperature and higher concentration of H₂

Question 73: The major product D formed in the following reaction sequence is:



Options:

- (1) CH₃CHO

- (2) CH_3CONH_2
(3) $\text{CH}_3\text{CH}_2\text{OH}$
(4) $\text{CH}_3\text{CH}_2\text{Cl}$

Question 74: Match List-I with List-II:

List-I (Block/group in periodic table)	List-II (Element)
A. Lanthanoid	I. Ce
B. d-block element	II. As
C. p-block element	III. Cs
D. s-block element	IV. Mn

Choose the correct answer from the options given below:

Options:

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

Question 75: Which of the following is *not* an ambidentate ligand?

Options:

- (1) $\text{C}_2\text{O}_4^{2-}$
(2) SCN^-
(3) NO_2^-
(4) CN^-

Question 76: The quantum numbers of four electrons are given below:

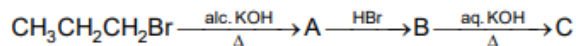
- I. $n = 4; l = 2; m_l = -2; s = -\frac{1}{2}$
II. $n = 3; l = 2; m_l = 1; s = +\frac{1}{2}$
III. $n = 4; l = 1; m_l = 0; s = +\frac{1}{2}$
IV. $n = 3; l = 1; m_l = -1; s = +\frac{1}{2}$

The correct decreasing order of energy of these electrons is:

Options:

- (1) $\text{IV} > \text{III} > \text{II} > \text{I}$
(2) $\text{I} > \text{III} > \text{II} > \text{IV}$
(3) $\text{III} > \text{I} > \text{II} > \text{IV}$
(4) $\text{I} > \text{II} > \text{III} > \text{IV}$

Question 77: The major product C in the below mentioned reaction is:



Options:

- (1) Propan-1-ol
- (2) Propan-2-ol
- (3) Propane
- (4) Propyne

Question 78: The compound that does not undergo Friedel-Crafts alkylation reaction but gives a positive carbylamine test is:

Options:

- (1) Aniline
- (2) Pyridine
- (3) N-methylaniline
- (4) Triethylamine

Question 79: For an endothermic reaction:

- (A) q_p is negative.
- (B) $\Delta_r H$ is positive.
- (C) $\Delta_r H$ is negative.
- (D) q_p is positive.

Choose the **correct** answer from the options given below:

- (1) B and D
- (2) C and D
- (3) A and B
- (4) A and C

Question 80: 1.0 g of H_2 has the same number of molecules as in:

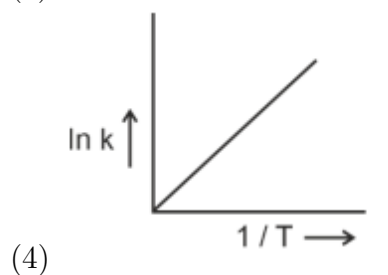
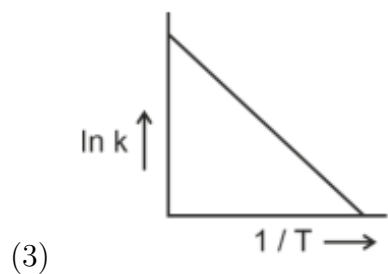
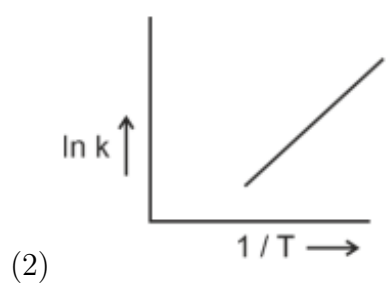
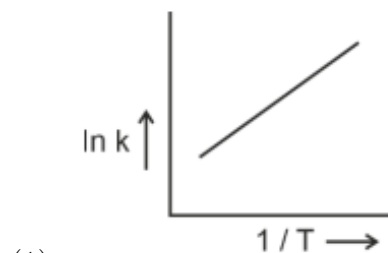
Options:

- (1) 14 g of N_2
- (2) 18 g of H_2O
- (3) 16 g of CO

(4) 28 g of N_2

Question 81: Which of the following plot represents the variation of $\ln k$ versus $\frac{1}{T}$ in accordance with Arrhenius equation?

Options:



Question 82: A steam volatile organic compound which is immiscible with water has a boiling point of 250°C . During steam distillation, a mixture of this organic compound and water will boil:

Options:

- (1) above 100°C but below 250°C
- (2) above 250°C
- (3) at 250°C
- (4) close to but below 100°C

Question 83: Given below are two statements :

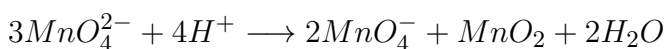
Statement I : Glycogen is similar to amylose in its structure.

Statement II : Glycogen is found in yeast and fungi also.

In the light of the above statements, choose the correct answer from the options given below :

- (1) Statement I is true but Statement II is false.
- (2) Statement I is false but Statement II is true.
- (3) Both Statement I and Statement II are true.
- (4) Both Statement I and Statement II are false.

Question 84: The oxidation states not shown by Mn in the given reaction are:



- A. +6
- B. +2
- C. +4
- D. +7
- E. +3

Choose the most appropriate answer from the options given below:

Options:

- (1) D and E only
- (2) B and D only
- (3) A and B only
- (4) B and E only

Question 85: Given below are two statements:

Statement I: The Balmer spectral line for H atom with lowest energy is located at $\frac{5}{36}R_H$ cm⁻¹. (R_H = Rydberg constant)

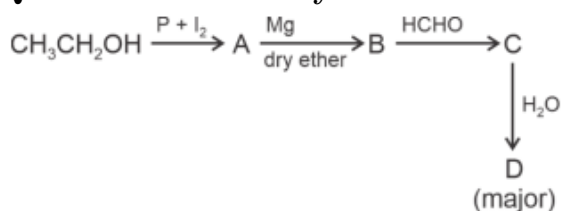
Statement II: When the temperature of blackbody increases, the maxima of the curve (intensity and wavelength) shifts to shorter wavelength.

In the light of the above statements, choose the **correct** answer from the options given below:

- (1) Statement I is true but Statement II is false
 - (2) Statement I is false but Statement II is true
 - (3) Both Statement I and Statement II are true
 - (4) Both Statement I and Statement II are false
-

Section - B

Question 86: Identify D in the following sequence of reactions:



Options:

- (1) n-propyl alcohol
 - (2) isopropyl alcohol
 - (3) propanal
 - (4) propionic acid
-

Question 87: Identify the *incorrect* statement.

Options:

- (1) PEt_3 and AsPh_3 as ligands can form $d\pi-d\pi$ bond with transition metals
 - (2) The N – N single bond is as strong as the P – P single bond
 - (3) Nitrogen has unique ability to form $p\pi-p\pi$ multiple bonds with nitrogen, carbon and oxygen
 - (4) Nitrogen cannot form $d\pi-p\pi$ bond as other heavier elements of its group
-

Question 88: Match List-I with List-II:

List-I (Test/reagent)	List-II (Radical identified)
A. Lake Test	I. NO_3^-
B. Nessler's Reagent	II. Fe^{3+}
C. Potassium sulphocyanide	III. Al^{3+}
D. Brown Ring Test	IV. NH_4^+

Choose the correct answer from the options given below:

Options:

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

Question 89: Match List-I with List-II:

List-I		List-II	
Molecule		Bond enthalpy (kJ mol ⁻¹)	
A.	HCl	I.	435.8
B.	N ₂	II.	498
C.	H ₂	III.	946.0
D.	O ₂	IV.	431.0

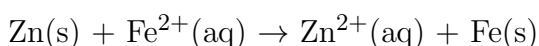
Choose the correct answer from the options given below:

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

Question 90: The standard cell potential of the following cell

Zn—Zn²⁺(aq)——Fe²⁺(aq)—Fe is 0.32 V.

Calculate the standard Gibbs energy change for the reaction:



(Given: 1 F = 96487 C)

Options:

- (1) -61.75 kJ mol⁻¹
- (2) +5.006 kJ mol⁻¹
- (3) -5.006 kJ mol⁻¹
- (4) +61.75 kJ mol⁻¹

Question 91: Match List-I with List-II:

List-I: Solid salt treated with dil. H₂SO₄

List-II: Anion detected

List-I		List-II	
A.	Effervescence of colourless gas	I.	NO_2^-
B.	Gas with smell of rotten egg	II.	CO_3^{2-}
C.	Gas with pungent smell	III.	S^{2-}
D.	Brown fumes	IV.	SO_3^{2-}

Choose the **correct** answer from the options given below:

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

Question 92: The ratio of solubility of AgCl in 0.1 M KCl solution to the solubility of AgCl in water is:

(Given: Solubility product of AgCl = 10^{-10})

Options:

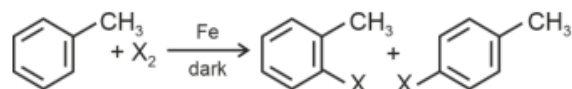
- (1) 10^{-4}
- (2) 10^{-6}
- (3) 10^{-9}
- (4) 10^{-5}

Question 93: On complete combustion, 0.3 g of an organic compound gave 0.2 g of CO_2 and 0.1 g of H_2O . The percentage composition of carbon and hydrogen in the compound, respectively is:

Options:

- (1) 4.07% and 15.02%
- (2) 18.18% and 3.70%
- (3) 15.02% and 4.07%
- (4) 3.70% and 18.18%

Question 94: The following reaction method

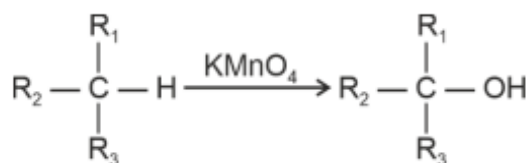


is not suitable for the preparation of the corresponding haloarene products, due to high reactivity of halogen, when X is:

Options:

- (1) F
- (2) I
- (3) Cl
- (4) Br

Question 95: The alkane that can be oxidized to the corresponding alcohol by KMnO_4 as per the equation

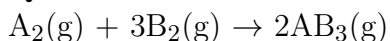


is, when:

Options:

- (1) $\text{R}_1 = \text{H}$; $\text{R}_2 = \text{H}$; $\text{R}_3 = \text{H}$
- (2) $\text{R}_1 = \text{CH}_3$; $\text{R}_2 = \text{CH}_3$; $\text{R}_3 = \text{CH}_3$
- (3) $\text{R}_1 = \text{CH}_3$; $\text{R}_2 = \text{H}$; $\text{R}_3 = \text{H}$
- (4) $\text{R}_1 = \text{CH}_3$; $\text{R}_2 = \text{CH}_3$; $\text{R}_3 = \text{H}$

Question 96: For the following reaction at 300 K



the enthalpy change is +15 kJ, then the internal energy change is:

Options:

- (1) 19988.4 J
- (2) 200 J
- (3) 1999 J
- (4) 1.9988 kJ

Question 97: Rate constants of a reaction at 500 K and 700 K are 0.04 s^{-1} and 0.14 s^{-1} , respectively; then, activation energy of the reaction is:
(Given: $\log 3.5 = 0.5441$, $R = 8.31 \text{ J K}^{-1} \text{ mol}^{-1}$)

Options:

- (1) 182310 J
- (2) 18500 J
- (3) 18219 J
- (4) 18030 J

Question 98: Mass of glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) required to be dissolved to prepare one litre of its solution which is isotonic with 15 g L^{-1} solution of urea (NH_2CONH_2) is (Given: Molar mass in g mol^{-1} C : 12, H : 1, O : 16, N : 14)

Options:

- (1) 55 g
- (2) 15 g
- (3) 30 g
- (4) 45 g

Question 99: $[\text{Mn}_2(\text{CO})_{10}]$ and $[\text{Co}_2(\text{CO})_8]$ structures have

- A. Metal-Metal linkage
- B. Terminal CO groups
- C. Bridging CO groups
- D. Metal in zero oxidation state

Choose the correct answer from the options given below:

- (1) Only A, B, C
- (2) Only B, C, D
- (3) Only A, C, D
- (4) Only A, B, D

Question 100: Methyl group attached to a positively charged carbon atom stabilizes the carbocation due to

Options:

- (1) -I inductive effect
 - (2) electromeric effect
 - (3) hyperconjugation
 - (4) mesomeric effect
-

Botany

Section - A

Question 101: The regions with a high level of species richness, high degree of endemism, and a loss of 70% of the species and habitat are identified as:

Options:

- (1) Natural Reserves
 - (2) Sacred Groves
 - (3) Biodiversity Hotspots
 - (4) Biogeographical Regions
-

Question 102: Which of the following simple tissues are commonly found in the fruit walls of nuts and pulp of pear?

Options:

- (1) Sclereids
 - (2) Fibres
 - (3) Parenchyma
 - (4) Collenchyma
-

Question 103: In a chromosome, there is a specific DNA sequence, responsible for initiating replication. It is called as:

Options:

- (1) Recognition sequence
 - (2) Cloning site
 - (3) Restriction site
 - (4) *ori* site
-

Question 104: Given below are two statements:

Statement I: When many alleles of a single gene govern a character, it is called polygenic inheritance.

Statement II: In Polygenic inheritance, the effect of each allele is additive.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) Statement I is true but Statement II is false
- (2) Statement I is false but Statement II is true
- (3) Both Statement I and Statement II are true
- (4) Both Statement I and Statement II are false

Question 105: Which of the following are required for the light reaction of Photosynthesis?

A. CO₂ B. O₂ C. H₂O D. Chlorophyll E. Light

Choose the correct answer from the options given below:

Options:

- (1) A, C, D and E only
- (2) C, D and E only
- (3) A and B only
- (4) A, C and E only

Question 106: Match List-I with List-II:

List-I	List-II
A. Fleming	I. Disc shaped sacs or cisternae near cell nucleus
B. Robert Brown	II. Chromatin
C. George Palade	III. Ribosomes
D. Camillo Golgi	IV. Nucleus

Choose the correct answer from the options given below:

Options:

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

Question 107: Match List-I with List-II:

List-I Type of Inheritance	List-II Example
A. Incomplete dominance	I. Blood groups in human
B. Co-dominance	II. Flower colour in <i>Antirrhinum</i>
C. Pleiotropy	III. Skin colour in human
D. Polygenic inheritance	IV. Phenylketonuria

Choose the correct answer from the options given below:

Options:

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

Question 108: Which part of the ovule stores reserve food materials?

Options:

- (1) Nucellus
 - (2) Integument
 - (3) Placenta
 - (4) Funicle
-

Question 109: Which one of the following is not found in Gymnosperms?

Options:

- (1) Sieve cells
 - (2) Albuminous cells
 - (3) Tracheids
 - (4) Vessels
-

Question 110: Which one of the following is not included under in-situ conservation?

Options:

- (1) Wild-life sanctuary
 - (2) Botanical garden
 - (3) Biosphere reserve
 - (4) National park
-

Question 111: Given below are two statements:

Statement I: The Indian Government has set up GEAC, which will make decisions regarding the validity of GM research.

Statement II: Biopiracy is the term used to refer to the use of bio-resources by native people.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) Statement I is true but Statement II is false
 - (2) Statement I is false but Statement II is true
 - (3) Both Statement I and Statement II are true
 - (4) Both Statement I and Statement II are false
-

Question 112: Pollen grains remain preserved as fossils due to the presence of:

Options:

- (1) Epidermal layer
 - (2) Tapetum
 - (3) Exine layer
 - (4) Intine layer
-

Question 113: Identify the incorrect pair:

Options:

- (1) Sphenopsida – Adiantum
 - (2) Pteropsida – Dryopteris
 - (3) Psilotopsida – Psilotum
 - (4) Lycopsidea – Selaginella
-

Question 114: Which of the following is the correct match?

Options:

- (1) Gymnosperms : Cedrus, Pinus, Sequoia
 - (2) Angiosperms : Wolffia, Eucalyptus, Sequoia
 - (3) Bryophytes : Polytrichum, Polysiphonia, Sphagnum
 - (4) Pteridophytes : Equisetum, Ginkgo, Adiantum
-

Question 115: Given below are two statements regarding RNA polymerase in prokaryotes.

Statement I: In prokaryotes, RNA polymerase is capable of catalysing the process of

elongation during transcription.

Statement II: RNA polymerase associates transiently with 'Rho' factor to initiate transcription.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) Statement I is true but Statement II is false
 - (2) Statement I is false but Statement II is true
 - (3) Both Statement I and Statement II are true
 - (4) Both Statement I and Statement II are false
-

Question 116: Which of the following is a nucleotide?

Options:

- (1) Uridine
 - (2) Adenylic acid
 - (3) Guanine
 - (4) Guanosine
-

Question 117: Match List-I with List-II:

List-I	List-II
A. vexillary aestivation	I. Brinjal
B. Epipetalous stamens	II. Peach
C. Epipetalous stamens	III. Pea
D. Perigynous flower	IV. Lily

Choose the correct answer from the options given below:

Options:

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

Question 118: Match List-I with List-II:

List-I	List-II
A. China rose	I. Free central
B. Mustard	II. Basal
C. Primrose	III. Axile
D. Marigold	IV. Parietal

Choose the correct answer from the options given below:

Options:

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

Question 119: Which of the following helps in the maintenance of the pressure gradient in sieve tubes?

Options:

- (1) Albuminous cells
- (2) Sieve cells
- (3) Phloem parenchyma
- (4) Companion cells

Question 120: Mesosome in a cell is:

Options:

- (1) Membrane-bound vesicular structure
- (2) Chain of many ribosomes attached to a single mRNA
- (3) Special structure formed by the extension of the plasma membrane
- (4) Medium-sized chromosome

Question 121: Match List-I with List-II:

List-I	List-II
A. Absciscic acid	I. Promotes female flowers in cucumber
B. Ethylene	II. Helps seeds to withstand desiccation
C. Gibberellin	III. Helps in nutrient mobilisation
D. Cytokinin	IV. Promotes bolting in beet, cabbage etc

Choose the correct answer from the options given below:

Options:

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

Question 122: Match List-I with List-II:

List-I	List-II
A. Genetically engineered Human Insulin	I. Gene therapy
B. GM Cotton	II. <i>E. coli</i>
C. ADA Deficiency	III. Antigen-antibody interaction
D. ELISA	IV. <i>Bacillus thuringiensis</i>

Choose the correct answer from the options given below:

Options:

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

Question 123: Match List-I with List-II:

List-I	List-II
A. ETS Complex I	I. NADH Dehydrogenase
B. ETS Complex II	II. Cytochrome <i>bc</i> ₁
C. ETS Complex III	III. Cytochrome C oxidase
D. ETS Complex IV	IV. Succinate Dehydrogenase

Choose the correct answer from the options given below:

Options:

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

Question 124: Cryopreservation technique is used for:

Options:

- (1) Cryoprotection of environment
- (2) Protection of Biodiversity hotspots
- (3) Preservation of gametes in viable and fertile condition for a long period
- (4) *In-situ* conservation

Question 125: Which of the following are correct about cellular respiration?

- A. Cellular respiration is the breaking of C-C bonds of complex organic molecules by oxidation.
- B. The entire cellular respiration takes place in Mitochondria.
- C. Fermentation takes place under anaerobic condition in germinating seeds.
- D. The fate of pyruvate formed during glycolysis depends on the type of organism also.
- E. Water is formed during respiration as a result of O₂ accepting electrons and getting reduced.

Choose the correct answer from the options given below:

Options:

- (1) A, C, D, E only
- (2) A, B, E only
- (3) A, B, C, E only
- (4) B, C, D, E only

Question 126: Given below are two statements:

Statement I: In eukaryotes there are three RNA polymerases in the nucleus in addition to the RNA polymerase found in the organelles.

Statement II: All the three RNA polymerases in eukaryotic nucleus have different roles.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) Statement I is correct but Statement II is incorrect
- (2) Statement I is incorrect but Statement II is correct
- (3) Both Statement I and Statement II are correct
- (4) Both Statement I and Statement II are incorrect

Question 127: Match List-I with List-II:

List-I	List-II
A. Histones	I. Loosely packed chromatin
B. Nucleosome	II. Densely packed chromatin
C. Euchromatin	III. Positively charged basic proteins
D. Heterochromatin	IV. DNA wrapped around histone octamer

Choose the correct answer from the options given below:

Options:

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

Question 128: Given below are two statements:

Statement I: Failure of segregation of chromatids during cell cycle resulting in the gain or loss of whole set of chromosome in an organism is known as aneuploidy.

Statement II: Failure of cytokinesis after anaphase stage of cell division results in the gain or loss of a chromosome is called polyploidy.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) Statement I is true but Statement II is false
 - (2) Statement I is false but Statement II is true
 - (3) Both Statement I and Statement II are true
 - (4) Both Statement I and Statement II are false
-

Question 129: Recombination between homologous chromosomes is completed by the end of:

Options:

- (1) Diakinesis
 - (2) Zygotene
 - (3) Diplotene
 - (4) Pachytene
-

Question 130: Match List-I with List-II:

List-I	List-II
A. Metacentric chromosome	I. Chromosome has a terminal centromere
B. Sub-metacentric chromosome	II. Middle centromere forming two equal arms of chromosome
C. Acrocentric chromosome	III. Centromere is slightly away from the middle of chromosome resulting into two unequal arms
D. Telocentric chromosome	IV. Centromere is situated close to its end forming one extremely short and one very long arm

Choose the correct answer from the options given below:

Options:

- (1) A-III, B-I, C-IV, D-II

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

Question 131: Ligases is a class of enzymes responsible for catalysing the linking together of two compounds. Which of the following bonds is *not* catalysed by it?

Options:

- (1) C – C
- (2) P – O
- (3) C – O
- (4) C – N

Question 132: F. Skoog observed that callus proliferated from the internodal segments of tobacco stem when auxin was supplied with one of the following except :

Options:

- (1) Extract of Vascular tissues
- (2) Coconut milk
- (3) Absciscic acid
- (4) Yeast Extract

Question 133: Given below are some statements about plant growth regulators.

- A. All GAs are acidic in nature.
- B. Auxins are antagonists to GAs.
- C. Zeatin was isolated from coconut milk.
- D. Ethylene induces flowering in Mango.
- E. Absciscic acid induces parthenocarpy.

Choose the correct set of statements from the options given below:

- (1) A, C, D
- (2) B, E
- (3) A, B, C
- (4) B, D, E

Question 134: Identify the incorrect statement related to gel electrophoresis.

Options:

- (1) Separated DNA fragments can be directly seen under UV radiation
- (2) Separated DNA can be extracted from gel piece
- (3) Fragment of DNA moves toward anode
- (4) Sieving effect of agarose gel helps in separation of DNA fragments

Question 135: Which of the following examples show monocarpellary, unilocular ovary with many ovules?

- A. Sesbania
- B. Brinjal
- C. Indigofera
- D. Tobacco
- E. Asparagus

Choose the correct answer from the options given below:

Options:

- (1) B and E only
- (2) C, D and E only
- (3) A, B and D only
- (4) A and C only

Section - B

Question 136: Given below are two statements :

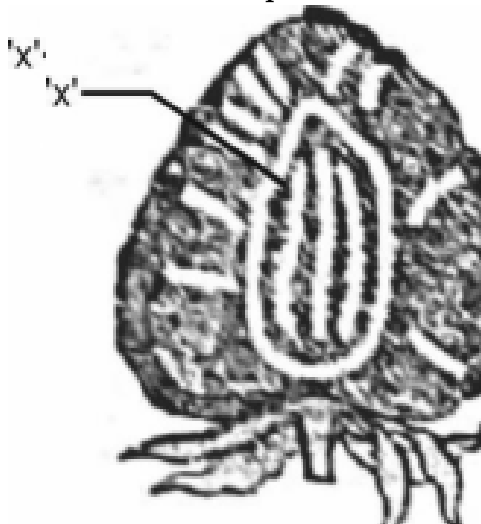
Statement I: In the *lac* operon, the *z* gene codes for beta-galactosidase which is primarily responsible for the hydrolysis of lactose into galactose and glucose.

Statement II: In addition to lactose, glucose or galactose can also induce *lac* operon.

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) Statement I is true but Statement II is false
- (2) Statement I is false but Statement II is true
- (3) Both Statement I and Statement II are true
- (4) Both Statement I and Statement II are false

Question 137: The part marked as 'x' in the given figure is:



Options:

- (1) Endosperm
- (2) Thalamus
- (3) Endocarp
- (4) Mesocarp

Question 138: Given below are two statements:

Statement I: In a dicotyledonous leaf, the adaxial epidermis generally bears more stomata than the abaxial epidermis.

Statement II: In a dicotyledonous leaf, the adaxially placed palisade parenchyma is made up of elongated cells, which are arranged vertically and parallel to each other.

In the light of the above statements, choose the correct answer from the options given below:

Options:

- (1) Statement I is true but Statement II is false
- (2) Statement I is false but Statement II is true
- (3) Both Statement I and Statement II are true
- (4) Both Statement I and Statement II are false

Question 139: Which of the following are *not* fatty acids?

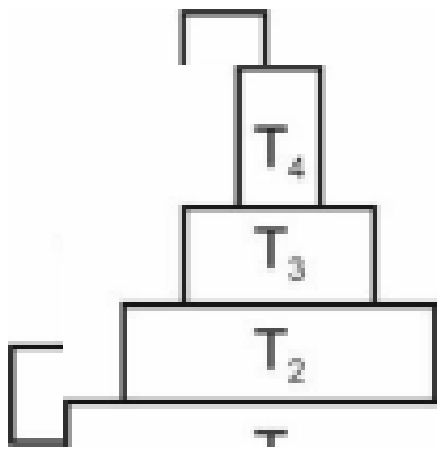
- A. Glutamic acid
- B. Arachidonic acid
- C. Palmitic acid
- D. Lecithin

E. Aspartic acid

Choose the **correct** answer from the options given below :

- (1) C, D and E only
- (2) A and B only
- (3) A, D and E only
- (4) B and C only

Question 140: Consider the pyramid of energy of an ecosystem given below:



If T_4 is equivalent to 1000 J, what is the value at T_1 ?

Options:

- (1) $\frac{10000}{10}$ J
- (2) $\frac{10000}{10} \times 4$ J
- (3) 10,000 J
- (4) 10,00,000 J

Question 141: Which *one* of the following products diffuses out of the chloroplast during photosynthesis?

Options:

- (1) ADP
- (2) NADPH
- (3) O_2
- (4) ATP

Question 142: Recombinant DNA molecule can be created normally by cutting the vector DNA and source DNA respectively with:

Options:

- (1) Hind II, Hind II
- (2) Hind II, Alu I
- (3) Hind II, EcoR I
- (4) Hind II, BamHI

Question 143: Which one of the following is *not* a limitation of ecological pyramids?

Options:

- (1) Saprophytes are not given any place in ecological pyramids
- (2) It assumes a simple food chain, that almost never exists in nature
- (3) It accommodates a food web
- (4) It does not take into account the same species belonging to two or more trophic levels

Question 144: The *Bt* toxin in genetically engineered *Bt* cotton kills the pest by:

- 1. creating pores in the midgut
- 2. damaging the respiratory system
- 3. degenerating the nervous system
- 4. altering the pH of body fluids

Question 145: Match List-I with List-II:

List-I Organisms	List-II Mode of Nutrition
A. Euglenoid	I. Parasitic
B. Dinoflagellate	II. Saprophytic
C. Slime mould	III. Photosynthetic
D. <i>Plasmodium</i>	IV. Switching between photosynthetic and heterotrophic mode

Choose the correct answer from the options given below:

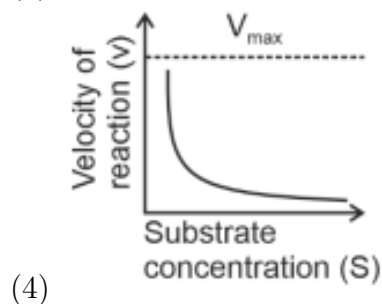
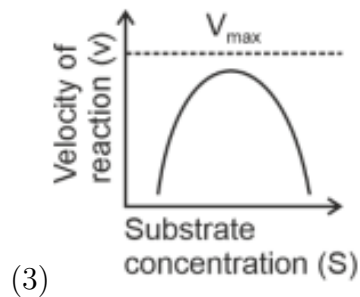
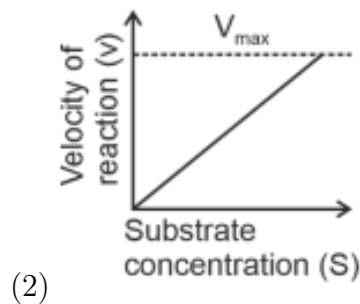
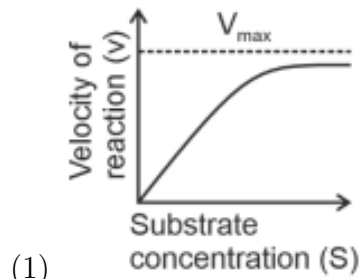
Options:

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

(4) A-IV, B-II, C-III, D-I

Question 146: Which of the following graphs depicts the effect of substrate concentration on velocity of enzyme catalysed reaction?

Options:



Question 147: When will the population density increase, under special conditions?

When the number of :

Options:

- (1) Deaths exceeds number of births and also number of emigrants equals number of immigrants.
- (2) Births plus number of immigrants equals number of deaths plus number of emigrants.
- (3) Births plus number of emigrants is more than the number of deaths plus number of immigrants.
- (4) Births plus number of immigrants is more than the sum of number of deaths and number of emigrants.

Question 148: When a tall pea plant with round seeds was selfed, it produced the progeny of :

- (a) Tall plants with round seeds and
- (b) Tall plants with wrinkled seeds.
- Identify the genotype of the parent plant.

Options:

- (1) TtRr
- (2) TtRR
- (3) TTRR
- (4) TTRr

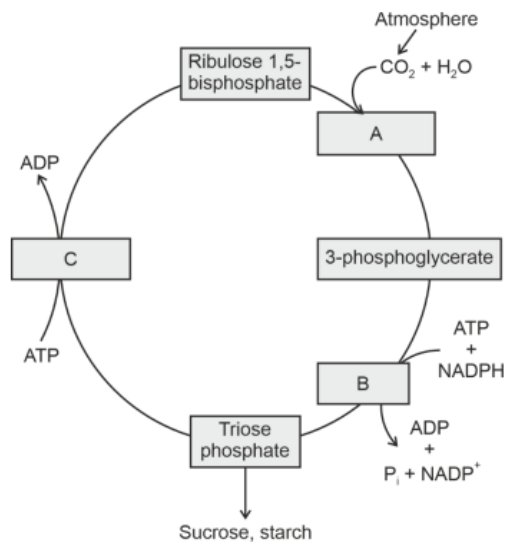
Question 149: Match List-I with List-II:

List-I		List-II	
A.	Biodiversity hotspot	I.	Khasi and Jantia hills in Meghalaya
B.	Sacred groves	II.	World Summit on Sustainable Development 2002
C.	Johannesburg, South Africa	III.	<i>Parthenium</i>
D.	Alien species invasion	IV.	Western Ghats

Choose the **correct** answer from the options given below:

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

Question 150: Observe the given figure. Identify the different stages labelled with alphabets by selecting the correct option.

**Options:**

- (1) A-Carboxylation, B-Regeneration, C-Reduction
- (2) A-Reduction, B-Decarboxylation, C-Regeneration
- (3) A-Carboxylation, B-Reduction, C-Regeneration
- (4) A-Reduction, B-Carboxylation, C-Regeneration

Zoology**Section - A****Question 151: Match List-I with List-II:**

List I	List II
A. Predator	I. <i>Ophrys</i>
B. Mutualism	II. <i>Pisaster</i>
C. Parasitism	III. Female wasp and fig
D. Sexual deceit	IV. <i>Plasmodium</i>

Choose the correct answer from the options given below:**Options:**

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

Question 152: Match List-I with List-II:

List I Location of Joint		List II Type of Joint	
A.	Joint between humerus and pectoral girdle	I.	Gliding joint
B.	Knee joint	II.	Ball and Socket joint
C.	Joint between atlas and axis	III.	Hinge joint
D.	Joint between carpals	IV.	Pivot joint

Chose the correct answer from the options given below:

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

Question 153: Following are the steps involved in the action of toxin in Bt cotton:

- A. The inactive toxin converted into an active form due to the alkaline pH of the gut of the insect.
- B. *Bacillus thuringiensis* produces crystals with toxic insecticidal proteins.
- C. The alkaline pH solubilizes the crystals.
- D. The activated toxin binds to the surface of midgut cells, creates pores, and causes the death of the insect.
- E. The toxin proteins exist as inactive protoxins in bacteria.

Choose the correct sequence of steps from the options given below:

Options:

- (1) E → C → B → A → D
- (2) B → C → A → E → D
- (3) A → E → B → D → C
- (4) B → E → C → A → D

Question 154: Match List-I with List-II:

List I		List II	
A.	Gene pool	I.	Stable within a generation
B.	Genetic drift	II.	Change in gene frequency by chance
C.	Gene flow	III.	Transfer of genes into or out of population
D.	Gene frequency	IV.	Total number of genes and their alleles

Choose the correct answer from the options given below:

- (1) A-III, B-II, C-I, D-IV
- (2) A-IV, B-II, C-III, D-I

(3) A-I, B-II, C-III, D-IV

(4) A-II, B-III, C-IV, D-I

Question 155: Which evolutionary phenomenon is depicted by the sketch given in figure?



Options:

- (1) Artificial selection
- (2) Genetic drift
- (3) Convergent evolution
- (4) Adaptive radiation

Question 156: A person with blood group ARh^- can receive a blood transfusion from which of the following types?

- A. BRh^-
- B. $ABRh^-$
- C. ORh^-
- D. ARh^-
- E. ARh^+

Choose the correct answer from the options given below:

Options:

- (1) D and E only
- (2) D only
- (3) A and B only
- (4) C and D only

Question 157: Enzymes that catalyse the removal of groups from substrates by mechanisms other than hydrolysis leaving double bonds, are known as :

Options:

- (1) Transferases
- (2) Oxidoreductases

(3) Dehydrogenases

(4) Lyases

Question 158: Match List-I with List-II.

List-I Event		List-II Stage of Prophase-I (Meiosis-I)	
A.	Chiasmata formation	I.	Pachytene
B.	Crossing over	II.	Diakinesis
C.	Synaptonemal complex formation	III.	Diplojene
D.	Terminalisation of chiasmata	IV.	Zygotene

Choose the correct answer from the options given below :

(1) A-III, B-I, C-IV, D-II

(2) A-II, B-I, C-III, D-IV

(3) A-III, B-I, C-II, D-IV

(4) A-II, B-III, C-IV, D-I

Question 159: Match List-I with List-II.

List-I		List-II	
A.	Primary structure of protein	I.	Human haemoglobin
B.	Secondary structure of protein	II.	Disulphide bonds
C.	Tertiary structure of protein	III.	Polypeptide chain
D.	Quaternary structure of protein	IV.	Alpha helix and β sheet

Choose the correct answer from the options given below:

(1) A-III, B-IV, C-II, D-I

(2) A-III, B-II, C-I, D-IV

(3) A-I, B-III, C-II, D-IV

(4) A-IV, B-III, C-II, D-I

Question 160: Match List-I with List-II.

List-I		List-II	
A.	Epinephrine	I.	Hyperglycemia
B.	Thyroxine	II.	Smooth muscle contraction
C.	Oxytocin	III.	Basal metabolic rate
D.	Glucagon	IV.	Emergency hormone

Choose the correct answer from the options given below :

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

Question 161: Which of the following statements is *correct* about the type of junction and their role in our body?

Options:

- (1) Adhering junctions facilitate the cells to communicate with each other.
- (2) Tight junctions help to stop substances from leaking across a tissue.
- (3) Tight junctions help to perform cementing to keep neighbouring cells together.
- (4) Gap junctions help to create gap between the cells and tissues.

Question 162: Select the restriction endonuclease enzymes whose restriction sites are present for the tetracycline resistance (tet^R) gene in the pBR322 cloning vector.

Options:

- (1) Bam HI and Sal I
- (2) Sal I and Pst I
- (3) Pst I and Pvu I
- (4) Pvu I and Bam HI

Question 163: Match List-I with List-II.

List-I		List-II	
A.	Chondrichthyes	I.	<i>Clarias</i>
B.	Cyclostomata	II.	<i>Carcharodon</i>
C.	Osteichthyes	III.	<i>Myxine</i>
D.	Amphibia	IV.	<i>Ichthyophis</i>

Choose the correct answer from the options given below:

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

Question 164: Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R.

Assertion A: During the menstrual cycle, the ovulation takes place approximately on the 14th day.

Reason R: Rapid secretion of LH in the middle of the menstrual cycle induces the rupture of the Graafian follicle and thereby the release of ovum.

In the light of the above statements, choose the most appropriate answer from the options given below:

Options:

- (1) A is correct but R is not correct.
- (2) A is not correct but R is correct.
- (3) Both A and R are correct and R is the correct explanation of A.
- (4) Both A and R are correct but R is NOT the correct explanation of A.

Question 165: Match List-I with List-II with respect to convergent evolution:

List-I	List-II
A. Lemur	I. Flying phalanger
B. Bobcat	II. Numbat
C. Anteater	III. Spotted cuscus
D. Flying squirrels	IV. Tasmanian tiger cat

Choose the correct answer from the options given below:

Options:

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

Question 166: Match List-I with List-II.

List-I		List-II	
A.	Cells are metabolically active and proliferate	I.	G ₂ phase
B.	DNA replication takes place	II.	G ₁ phase
C.	Proteins are synthesized	III.	G ₀ phase
D.	Quiescent stage with metabolically active cells	IV.	S phase

Choose the correct answer from the options given below:

- (1) A-IV, B-II, C-III, D-I
- (2) A-I, B-III, C-IV, D-II

(3) A-II, B-I, C-III, D-IV

(4) A-II, B-IV, C-I, D-III

Question 167: Match List-I with List-II.

List-I		List-II	
A.	Migratory flamingoes and resident fish in South American lakes	I.	Interference competition
B.	Abingdon tortoise became extinct after introduction of goats in their habitat	II.	Competitive release
C.	<i>Chathamalus</i> expands its distributional range in the absence of <i>Balanus</i>	III.	Resource Partitioning
D.	Five closely related species of Warblers feeding in different locations on same tree	IV.	Interspecific competition

Choose the correct answer from the options given below:

(1) A-I, B-II, C-III, D-IV

(2) A-IV, B-I, C-II, D-III

(3) A-III, B-I, C-II, D-IV

(4) A-II, B-IV, C-III, D-I

Question 168: Match List-I with List-II relating to microbes and their products:

List-I (Microbes)	List-II (Products)
A. <i>Streptococcus</i>	I. Citric acid
B. <i>Trichoderma polysporum</i>	II. Clot buster
C. <i>Monascus purpureus</i>	III. Cyclosporin A
D. <i>Aspergillus niger</i>	IV. Statins

Choose the correct answer from the options given below:

Options:

(1) A-II, B-III, C-IV, D-I

(2) A-I, B-II, C-III, D-IV

(3) A-I, B-III, C-II, D-IV

(4) A-I, B-IV, C-II, D-III

Question 169: Match List-I with List-II.

List-I		List-II	
A.	F ₁ Particles	I.	Chromosomes
B.	Histones	II.	Cilia
C.	Axoneme	III.	Golgi apparatus
D.	Cisternae	IV.	Mitochondria

Choose the **correct** answer from the options given below:

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

Question 170: Match List-I with List-II relating to examples of various kinds of IUDs and barriers:

List-I	List-II
A. Copper releasing IUD	I. Vaults
B. Non-medicated IUD	II. Multiload 375
C. Contraceptive barrier	III. LNG-20
D. Hormone releasing IUD	IV. Lippes loop

Choose the correct answer from the options given below:

Options:

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

Question 171: Given below are two statements:

Statement I: Antibiotics are chemicals produced by microbes that kill other microbes.

Statement II: Antibodies are chemicals formed in body that eliminate microbes.

In the light of the above statements, choose the most appropriate answer from the options given below.

- (1) Statement I is correct but Statement II is incorrect
- (2) Statement I is incorrect but Statement II is correct
- (3) Both Statement I and Statement II are correct
- (4) Both Statement I and Statement II are incorrect

Question 172: Arrange the following parts in human mammary gland, traversing the route of milk ejection:

A. Mammary duct

- B. Lactifereous duct
- C. Mammary alveolus
- D. Ampulla
- E. Mammary tubule

Choose the correct answer from the options given below:

Options:

- (1) $D \rightarrow C \rightarrow E \rightarrow A \rightarrow B$
 - (2) $C \rightarrow E \rightarrow B \rightarrow A \rightarrow D$
 - (3) $C \rightarrow E \rightarrow A \rightarrow D \rightarrow B$
 - (4) $A \rightarrow C \rightarrow E \rightarrow D \rightarrow B$
-

Question 173: Which of the following are correct about EcoRI?

- A. Cut the DNA with blunt end
- B. Cut the DNA with sticky end
- C. Recognise a specific palindromic sequence
- D. Cut the DNA between the base G and A when encounters the DNA sequence 'GAATTC'
- E. Exonuclease

Choose the correct answer from the options given below:

Options:

- (1) B, C, E only
 - (2) A, D, E only
 - (3) A, C, D only
 - (4) B, C, D only
-

Question 174: Which of the following is/are present in a female cockroach?

- A. Collateral gland
- B. Mushroom gland
- C. Spermatheca
- D. Anal style
- E. Phallic gland

Choose the most appropriate answer from the options given below:

Options:

- (1) B and D only
- (2) B and E only

- (3) A only
(4) A and C only

Question 175: Match List-I with List-II:

List I	List II
A. Malignant tumors	I. Destroy tumors
B. MALT	II. AIDS
C. NACO	III. Metastasis
D. α -Interferons	IV. Lymphoid tissue

Choose the correct answer from the options given below:

Options:

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

Question 176: Open Circulatory system is present in:

Options:

- (1) *Palaemon*, *Nereis*, *Balanoglossus*
(2) *Hirudinaria*, *Bombyx*, *Salpa*
(3) *Anopheles*, *Limax*, *Limulus*
(4) *Pheretima*, *Musca*, *Pila*

Question 177: In which of the following connective tissues, the cells secrete fibres of collagen or elastin?

- A. Cartilage
B. Bone
C. Adipose tissue
D. Blood
E. Areolar tissue

Choose the most appropriate answer from the options given below :

- (1) B, C, D and E only
(2) A, B, C and E only
(3) B, C and D only
(4) A, C and D only

Question 178: Which of the following pairs is an *incorrect* match?

Options:

- (1) Annelids and arthropods-Bilateral symmetry
- (2) Sponges-Acoelomates
- (3) Coelenterates and Ctenophores-Radial symmetry
- (4) Platyhelminthes-Diploblastic organisation

Question 179: Match List-I with List-II:

List-I		List-II	
A.	Residual Volume	I.	Maximum volume of air that can be breathed in after forced expiration
B.	Vital Capacity	II.	Volume of air inspired or expired during normal respiration
C.	Expiratory Capacity	III.	Volume of air remaining in lungs after forcible expiration
D.	Tidal Volume	IV.	Total volume of air expired after normal inspiration

Choose the **correct** answer from the options given below:

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

Question 180: Match List-I with List-II.

List-I		List-II	
A.	Living Fossil	I.	Elongated canine teeth
B.	Connecting Link	II.	Vermiform appendix
C.	Vestigial Organ	III.	<i>Echidna</i>
D.	Atavism	IV.	<i>Latimeria</i>

Choose the **correct** answer from the options given below:

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

Question 181: Match List-I with List-II

List-I	List-II
A. Schwann cells	I. Neurotransmitter
B. Synaptic knob	II. Cerebral cortex
C. Bipolar neurons	III. Myelin sheath
D. Multipolar neurons	IV. Retina

Choose the correct answer from the options given below:

Options:

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

Question 182: Diuresis is prevented by:

Options:

- (1) Renin from JG cell via switching off the osmoreceptors
 - (2) ANF from atria of the heart
 - (3) Aldosterone from adrenal medulla
 - (4) Vasopressin from Neurohypophysis
-

Question 183: Following is the list of STDs. Select the diseases which are *not* completely curable.

- A. Genital warts
- B. Genital herpes
- C. Syphilis
- D. Hepatitis-B
- E. Trichomoniasis

Choose the correct answer from the options given below:

- (1) A and D only
 - (2) B and D only
 - (3) D and C only
 - (4) A and E only
-

Question 184: What is the correct order (old to recent) of periods in Paleozoic era?

Options:

- (1) Silurian, Devonian, Permian, Carboniferous
- (2) Silurian, Devonian, Carboniferous, Permian
- (3) Permian, Devonian, Silurian, Carboniferous
- (4) Silurian, Carboniferous, Permian, Devonian

Question 185: 'Lub' sound of Heart is caused by the -----.

Options:

- (1) closure of the semilunar valves
- (2) opening of tricuspid and bicuspid valves
- (3) opening of the semilunar valves
- (4) closure of the tricuspid and bicuspid valves

Section - B

Question 186: Match List-I with List-II relating to human female external genitalia.

List I (Structures)		List II (Features)	
A.	Mons pubis	I.	A fleshy fold of tissue surrounding the vaginal opening
B.	Clitoris	II.	Fatty cushion of cells covered by skin and hair
C.	Hymen	III.	Tiny finger-like structure above labia minora
D.	Labina majora	IV.	A thin membrane-like structure covering vaginal opening

Choose the correct answer from the option given below :

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

Question 187: Aneuploidy is a chromosomal disorder where chromosome number is not the exact copy of its haploid set of chromosomes, due to :

- A. Substitution
- B. Addition
- C. Deletion
- D. Translocation
- E. Inversion

Choose the **most appropriate** answer from the options given below:

- (1) C and D only
- (2) D and E only
- (3) A and B only
- (4) B and C only

Question 188: Given below are two statements :

Statement I : RNA interference takes place in all Eukaryotic organisms as method of cellular defense.

Statement II : RNAi involves the silencing of a specific mRNA due to a complementary single-stranded RNA molecule that binds and prevents translation of mRNA.

In the light of the above statements, choose the correct answer from the options given below.

- (1) Statement I is true but Statement II is false.
- (2) Statement I is false but Statement II is true.
- (3) Both Statement I and Statement II are true.
- (4) Both Statement I and Statement II are false.

Question 189: Identify the wrong statements :

- A. Erythropoietin is produced by juxtaglomerular cells of the kidney
- B. Leydig cells produce Androgens
- C. Atrial Natriuretic factor, a peptide hormone is secreted by the seminiferous tubules of the testes
- D. Cholecystokinin is produced by gastrointestinal tract
- E. Gastrin acts on intestinal wall and helps in the production of pepsinogen

Choose the **most appropriate** answer from the options given below :

- (1) D and E only
- (2) A and B only
- (3) C and E only
- (4) A and C only

Question 190: Following are the steps involved in the process of PCR:

- A. Annealing
- B. Amplification (1 billion times)
- C. Denaturation

- D. Treatment with Taq polymerase and deoxynucleotides
- E. Extension

Choose the correct sequence of steps of PCR from the options given below:

Options:

- (1) $C \rightarrow A \rightarrow D \rightarrow E \rightarrow B$
 - (2) $A \rightarrow B \rightarrow E \rightarrow D \rightarrow C$
 - (3) $A \rightarrow C \rightarrow E \rightarrow D \rightarrow B$
 - (4) $D \rightarrow B \rightarrow E \rightarrow C \rightarrow A$
-

Question 191: Given below are two statements:

Statements I: Concentrated urine is formed due to a counter current mechanism in the nephron.

Statement II: Counter current mechanism helps to maintain osmotic gradient in the medullary interstitium.

In the light of the above statements, choose the most appropriate answer from the options given below:

Options:

- (1) Statement I is correct but Statement II is incorrect.
 - (2) Statement I is incorrect but Statement II is correct.
 - (3) Both Statement I and Statement II are correct.
 - (4) Both Statement I and Statement II are incorrect.
-

Question 192: Given below are two statements:

Statement I: Concentrically arranged cisternae of the Golgi complex are arranged near the nucleus with distinct convex cis or maturing and concave trans or forming face.

Statement II: A number of proteins are modified in the cisternae of the Golgi complex before they are released from the cis face.

In the light of the above statements, choose the correct answer from the option given below.

Options:

- (1) Statement I is true but Statement II is false.
 - (2) Statement I is false but Statement II is true.
 - (3) Both Statement I and Statement II are true
 - (4) Both Statement I and Statement II are false
-

Question 193: Match List-I with List-II.

List I		List II	
A.	Parturition	I.	Several antibodies for new-born babies
B.	Placenta	II.	Collection of ovum after ovulation
C.	Colostrum	III.	Foetal ejection reflex
D.	Fimbriae	IV.	Secretion of the hormone hCG

Choose the correct answer from the option given below:

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

Question 194: Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R.

Assertion A: Members of subphylum vertebrata possess notochord during the embryonic period. The notochord is replaced by a cartilaginous or bony vertebral column in the adult.

Reason R: Thus all chordates are vertebrates; not all vertebrates are chordates.

In the light of the above statements choose the correct answer from the option given below.

Options:

- (1) A is true but R is false.
- (2) A is false but R is true
- (3) Both A and R are true and R is the correct explanation of A.
- (4) Both A and R are true but R is NOT the correct explanation of A.

Question 195: The mother has A+ blood group, the father has B+ and the child is A+. What can be the possibility of genotypes of all three, respectively?

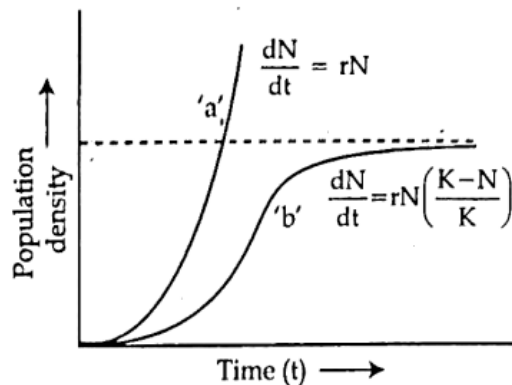
- A. $I^A I^A \mid I^B i \mid I^A i$
- B. $I^A i \mid I^B i \mid I^A i$
- C. $I^B i \mid I^A I^A \mid I^A I^B$
- D. $I^A i \mid I^B I^B \mid I^A i$
- E. $I^A i \mid I^B i \mid I^A i$

Choose the **correct** answer from the option given below:

- (1) C and D
- (2) D and A

- (3) A and B
(4) B and E

Question 196: What do 'a' and 'b' represent in the following population growth curve?



Options:

- (1) 'a' represents exponential growth when responses are not limiting the growth; and 'b' represents logistic growth when responses are limiting the growth.
(2) 'a' represents logistic growth when responses are not limiting the growth; 'b' represents exponential growth when responses are limiting the growth.
(3) 'a' represents carrying capacity and 'b' shows logistic growth when responses are limiting the growth.
(4) 'a' represents exponential growth when responses are not limiting the growth and 'b' shows carrying capacity.

Question 197: Select the correct statements regarding mechanism of muscle contraction.

- A. It is initiated by a signal sent by CNS via sensory neuron.
B. Neurotransmitter generates action potential in the sarcolemma.
C. Increased Ca^{2+} level leads to the binding of calcium with troponin on action filaments.
D. Masking of active site for actin is activated.
E. Utilising the energy from ATP hydrolysis to form cross bridge.

Choose the most appropriate answer from the options given below:

- (1) B, C and E only
(2) C, D and E only
(3) A and D only
(4) B, D and E only

Question 198: Match List-I with List-II:

List - I	List - II
A. Squamous Epithelium	I. Goblet cells of alimentary canal
B. Ciliated Epithelium	II. Inner lining of pancreatic ducts
C. Glandular Epithelium	III. Walls of blood vessels
D. Compound Epithelium	IV. Inner surface of Fallopian tubes

Choose the correct answer from the options given below:

Options:

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

Question 199: Match List I with List II :

List - I	List - II
A. B-Lymphocytes	I. Passive immunity
B. Interferons	II. Cell mediated immunity
C. T-Lymphocytes	III. Produce an army of proteins in response to pathogens
D. Colostrum	IV. Innate immunity

Choose the correct answer from the options given below :

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

Question 200: Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R.

Assertion A: During the transportation of gases, about 20-25 percent of CO_2 is carried by haemoglobin as carbamino-haemoglobin.

Reason R: This binding is related to high pCO_2 and low pO_2 in tissues.

In the light of the above statements, choose the correct answer from the options given below.

Options:

- (1) A is true but R is false.
- (2) A is false but R is true.
- (3) Both A and R are true and R is the correct explanation of A.

(4) Both A and R are true but R is NOT the correct explanation of A.

FINAL ANSWER KEY FOR NEET (UG) - 2024 RE-EXAM HELD ON 23.06.2024

Test Booklet Code : A1

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
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3	3	43	1	83	4	123	3	163	1
4	2	44	2	84	1	124	3	164	4
5	2	45	1	85	3	125	4	165	3
6	3	46	3	86	4	126	1	166	2
7	4	47	2	87	3	127	3	167	4
8	4	48	1	88	2	128	4	168	2
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10	3	50	2	90	2	130	2	170	2
11	4	51	2	91	3	131	4	171	4
12	2	52	4	92	2	132	3	172	1
13	1	53	2	93	4	133	2	173	3
14	3	54	4	94	1	134	3	174	4
15	4	55	4	95	3	135	3	175	1
16	1	56	4	96	3	136	3	176	3
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21	3	61	1	101	1	141	2	181	2
22	4	62	2	102	4	142	2	182	3
23	2	63	1	103	1	143	3	183	2
24	4	64	3	104	1	144	1	184	1
25	4	65	1	105	1	145	2	185	4
26	2	66	1	106	1	146	1	186	3
27	1	67	1	107	2	147	4	187	2
28	1	68	4	108	2	148	3	188	2
29	3	69	1	109	4	149	4	189	2
30	2	70	1	110	3	150	1	190	1
31	1	71	3	111	3	151	1	191	3
32	1	72	1	112	2	152	1	192	3
33	4	73	3	113	3	153	3	193	2
34	1	74	3	114	1	154	2	194	3
35	2	75	3	115	4	155	1	195	1
36	4	76	4	116	2	156	3	196	1
37	1	77	3	117	3	157	2	197	1
38	3	78	4	118	3	158	3	198	3
39	3	79	3	119	2	159	2	199	3
40	3	80	2	120	1	160	2	200	3

FINAL ANSWER KEY FOR NEET (UG) - 2024 RE-EXAM HELD ON 23.06.2024

Test Booklet Code : B1

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
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4	1	44	2	84	2	124	3	164	3
5	4	45	2	85	1	125	1	165	1
6	4	46	1	86	2	126	1	166	1
7	3	47	4	87	2	127	1	167	1
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10	1	50	4	90	1	130	2	170	1
11	4	51	4	91	3	131	2	171	4
12	1	52	3	92	1	132	2	172	3
13	1	53	3	93	4	133	1	173	2
14	2	54	2	94	3	134	3	174	2
15	3	55	3	95	1	135	1	175	4
16	1	56	1	96	2	136	4	176	2
17	3	57	2	97	4	137	2	177	1
18	2	58	1	98	2	138	1	178	1
19	4	59	4	99	2	139	2	179	4
20	1	60	2	100	3	140	3	180	3
21	1	61	4	101	3	141	2	181	2
22	3	62	3	102	4	142	4	182	4
23	1	63	4	103	2	143	2	183	1
24	1	64	3	104	4	144	4	184	4
25	2	65	2	105	2	145	3	185	1
26	2	66	1	106	4	146	4	186	2
27	4	67	2	107	4	147	4	187	2
28	2	68	4	108	4	148	1	188	4
29	3	69	3	109	1	149	2	189	1
30	4	70	1	110	2	150	1	190	4
31	3	71	4	111	3	151	2	191	4
32	1	72	1	112	4	152	1	192	1
33	4	73	3	113	1	153	2	193	1
34	3	74	4	114	4	154	2	194	2
35	3	75	4	115	2	155	3	195	2
36	4	76	2	116	1	156	3	196	2
37	3	77	4	117	3	157	3	197	1
38	4	78	2	118	2	158	4	198	2
39	1	79	3	119	2	159	3	199	2
40	2	80	4	120	2	160	2	200	4

FINAL ANSWER KEY FOR NEET (UG) - 2024 RE-EXAM HELD ON 23.06.2024

Test Booklet Code : C1

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
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6	3	46	4	86	1	126	3	166	4
7	1	47	3	87	2	127	4	167	2
8	3	48	3	88	4	128	4	168	1
9	4	49	2	89	4	129	4	169	2
10	4	50	3	90	1	130	4	170	4
11	1	51	2	91	1	131	1	171	3
12	2	52	3	92	1	132	3	172	3
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14	1	54	3	94	1	134	1	174	4
15	4	55	2	95	2	135	4	175	1
16	4	56	3	96	1	136	1	176	3
17	4	57	3	97	3	137	2	177	2
18	3	58	4	98	4	138	2	178	4
19	2	59	2	99	4	139	3	179	3
20	3	60	4	100	3	140	4	180	1
21	1	61	4	101	3	141	3	181	1
22	2	62	3	102	1	142	1	182	4
23	2	63	2	103	4	143	3	183	2
24	3	64	3	104	2	144	1	184	2
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26	2	66	1	106	1	146	1	186	1
27	2	67	2	107	2	147	4	187	4
28	1	68	2	108	1	148	4	188	1
29	2	69	1	109	4	149	1	189	3
30	3	70	1	110	2	150	3	190	1
31	3	71	1	111	1	151	4	191	3
32	2	72	4	112	3	152	1	192	4
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38	4	78	1	118	3	158	1	198	4
39	1	79	1	119	4	159	1	199	3
40	3	80	1	120	3	160	3	200	3

FINAL ANSWER KEY FOR NEET (UG) - 2024 RE-EXAM HELD ON 23.06.2024

Test Booklet Code : D1

Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer	Q.No.	Answer
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6	1	46	2	86	4	126	1	166	3
7	3	47	2	87	3	127	4	167	3
8	1	48	3	88	4	128	4	168	2
9	3	49	4	89	1	129	2	169	2
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22	3	62	1	102	2	142	2	182	4
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25	3	65	2	105	3	145	3	185	1
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37	1	77	4	117	3	157	3	197	4
38	3	78	4	118	1	158	1	198	4
39	2	79	2	119	4	159	1	199	3
40	3	80	4	120	4	160	4	200	4