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AIPMT 2015 (CANCELLED)

Question Paper · answer key at the end

Time: 3 Hours **Max. Marks:** 704 **Questions:** 176

General Instructions:

1. The duration of the paper is 3 hours. It has 176 questions: Physics 44, Chemistry 45, Biology 87.
2. Every question has four options with only one correct answer.
3. Marking: +4 for each correct answer, −1 for each wrong answer, 0 for a question not answered.
4. The answer key is at the end. Scan the QR code beside any question for its step-by-step solution.
5. Practise this paper as a timed test on the real exam screen, free, at pyqside.com.

Section A (MCQ) — 176 questions

Q.1 If energy (E), velocity (V) and time (T) are chosen as the fundamental quantities, the dimensional formula of surface tension will be

[AIPMT 2015 (Cancelled)]

(1) $[EV^{-2}T^{-2}]$ (2) $[E^{-2}V^{-1}T^{-3}]$
(3) $[EV^{-2}T^{-1}]$ (4) $[EV^{-1}T^{-2}]$

Scan or tap for the full solution

Q.2 A particle of unit mass undergoes one-dimensional motion such that its velocity varies according to $v(x) = \beta x^{-2n}$, where β and n are constants and x is the position of the particle. The acceleration of the particle as a function of x, is given by

[AIPMT 2015 (Cancelled)]

(1) $-2\beta^2 x^{-2n+1}$ (2) $-2n\beta^2 e^{-4n+1}$
(3) $-2n\beta^2 x^{-2n-1}$ (4) $-2n\beta^2 x^{-4n-1}$

Scan or tap for the full solution

Q.3 A ship A is moving Westwards with a speed of 10 km h^{-1} and a ship B 100 km South of A, is moving Northwards with a speed of 10 km h^{-1}. The time after which the distance between them becomes shortest, is [AIPMT 2015 (Cancelled)]

(1) $5\sqrt{2}$ h (2) $10\sqrt{2}$ h (3) 0 h (4) 5 h

Scan or tap for the full solution

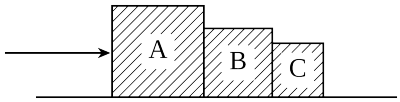
Q.4 A block A of mass m_1 rests on a horizontal table. A light string connected to it passes over a frictionless pulley at the edge of table and from its other end another block B of mass m_2 is suspended. The coefficient of kinetic friction between the block and the table is μ_k. When the block A is sliding on the table, the tension in the string is

[AIPMT 2015 (Cancelled)]

(1) $\frac{m_1 m_2(1+\mu_k)g}{(m_1+m_2)}$ (2) $\frac{m_1 m_2(1-\mu_k)g}{(m_1+m_2)}$
(3) $\frac{(m_2+\mu_k m_1)g}{(m_1+m_2)}$ (4) $\frac{(m_2-\mu_k m_1)g}{(m_1+m_2)}$

Scan or tap for the full solution

Q.5 Three blocks A, B and C, of masses 4 kg, 2 kg and 1 kg respectively, are in contact on a frictionless surface, as shown. If a force of 14 N is applied on the 4 kg block, then the contact force between A and B is [AIPMT 2015 (Cancelled)]



(1) 8 N (2) 18 N (3) 2 N (4) 6 N

Scan or tap for the full solution

Q.6 A particle of mass m is driven by a machine that delivers a constant power k watts. If the particle starts from rest the force on the particle at time t is

[AIPMT 2015 (Cancelled)]

(1) $\sqrt{2mk}\, t^{-1/2}$ (2) $\frac{1}{2}\sqrt{mk}\, t^{-1/2}$
(3) $\sqrt{\frac{mk}{2}}\, t^{-1/2}$ (4) $\sqrt{mk}\, t^{-1/2}$

Scan or tap for the full solution

Q.7 A block of mass 10 kg, moving in x direction with a constant speed of 10 m s^{-1}, is subjected to a retarding force F = 0.1x J/m during its travel from x = 20 m to 30 m. Its final KE will be

[AIPMT 2015 (Cancelled)]

(1) 275 J (2) 250 J (3) 475 J (4) 450 J

Scan or tap for the full solution

Q.8 Two particles of masses m_1, m_2 move with initial velocities u_1 and u_2. On collision, one of the particles gets excited to higher level, after absorbing energy ε. If final velocities of particles be v_1 and v_2 then we must have :

[AIPMT 2015 (Cancelled)]

(1) $\frac{1}{2}m_1u_1^2+\frac{1}{2}m_2u_2^2-\varepsilon=\frac{1}{2}m_1v_1^2+\frac{1}{2}m_2v_2^2$

(2) $\frac{1}{2}m_1^2u_1^2+\frac{1}{2}m_2^2u_2^2+\varepsilon=\frac{1}{2}m_1^2v_1^2+\frac{1}{2}m_2^2v_2^2$

(3) $m_1^2u_1 + m_2^2u_2 - \varepsilon = m_1^2v_1 + m_2^2v_2$

(4) $\frac{1}{2}m_1u_1^2+\frac{1}{2}m_2u_2^2=\frac{1}{2}m_1v_1^2+\frac{1}{2}m_2v_2^2-\varepsilon$

Scan or tap for the full solution

Q.9 Two similar springs P and Q have spring constants K_P and K_Q, such that $K_P > K_Q$. They are stretched first by the same amount (case a), then by the same force (case b). The work done by the springs W_P and W_Q are related as, in case (a) and case (b) respectively [AIPMT 2015 (Cancelled)]

(1) $W_P > W_Q$; $W_Q > W_P$ (2) $W_P < W_Q$; $W_Q < W_P$

(3) $W_P = W_Q$; $W_P > W_Q$ (4) $W_P = W_Q$; $W_P = W_Q$

Scan or tap for the full solution

Q.10 A rod of weight W is supported by two parallel knife edges A and B and is in equilibrium in a horizontal position. The knives are at a distance d from each other. The centre of mass of the rod is at distance x from A. The normal reaction on A is

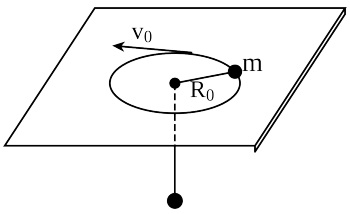
[AIPMT 2015 (Cancelled)]

(1) $\frac{W(d-x)}{x}$ (2) $\frac{W(d-x)}{d}$

(3) $\frac{Wx}{d}$ (4) $\frac{Wd}{x}$

Scan or tap for the full solution

Q.11 A mass m moves in a circle on a smooth horizontal plane with velocity v_0 at a radius R_0. The mass is attached to a string which passes through a smooth hole in the plane as shown. The tension in the string is increased gradually and finally m moves in a circle of radius $\frac{R_0}{2}$.



The final value of the kinetic energy is

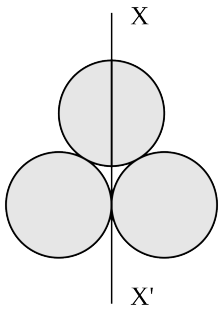
[AIPMT 2015 (Cancelled)]

(1) $2mv_0^2$ (2) $\frac{1}{2}mv_0^2$ (3) mv_0^2 (4) $\frac{1}{4}mv_0^2$

Scan or tap for the full solution

Q.12 Three identical spherical shells, each of mass m and radius r are placed as shown in figure. Consider an axis XX' which is touching to two shells and passing through diameter of third shell. Moment of inertia of the system consisting of these three spherical shells about XX' axis is

[AIPMT 2015 (Cancelled)]



(1) $\frac{16}{5}mr^2$ (2) $4mr^2$ (3) $\frac{11}{5}mr^2$ (4) $3mr^2$

Scan or tap for the full solution

Q.13 Kepler's third law states that square of period of revolution (T) of a planet around the sun, is proportional to third power of average distance r between sun and planet i.e. $T^2 = Kr^3$ here K is constant. If the masses of sun and planet are M and m respectively then as per Newton's law of gravitation force of attraction between them is $F=\frac{GMm}{r^2}$, here G is gravitational constant. The relation between G and K is described as

[AIPMT 2015 (Cancelled)]

(1) K = G (2) $K=\frac{1}{G}$

(3) $GK = 4\pi^2$ (4) $GMK = 4\pi^2$

Scan or tap for the full solution

Q.14 Two spherical bodies of mass M and 5M and radii R and 2R are released in free space with initial separation between their centres equal to 12R. If they attract each other due to gravitational force only, then the distance covered by the smaller body before collision is : [AIPMT 2015 (Cancelled)]

(1) 7.5R (2) 1.5R (3) 2.5R (4) 4.5R

Scan or tap for the full solution

Q.15 The two ends of a metal rod are maintained at temperatures 100°C and 110°C. The rate of heat flow in the rod is found to be 4.0 J/s. If the ends are maintained at temperatures 200°C and 210°C, the rate of heat flow will be [AIPMT 2015 (Cancelled)]

(1) 8.0 J/s (2) 4.0 J/s (3) 44.0 J/s (4) 16.8 J/s

Scan or tap for the full solution

Q.16 A wind with speed 40 m/s blows parallel to the roof of a house. The area of the roof is 250 m^2. Assuming that the pressure inside the house is atmospheric pressure, the force exerted by the wind on the roof and the direction of the force will be (ρ_{air} = 1.2 kg/m^3) [AIPMT 2015 (Cancelled)]

(1) 2.4×10^5 N, upwards

(2) 2.4×10^5 N, downwards

(3) 4.8×10^5 N, downwards

(4) 4.8×10^5 N, upwards

Scan or tap for the full solution

Q.17 On observing light from three different stars P, Q and R, it was found that intensity of violet colour is maximum in the spectrum of P, the intensity of green colour is maximum in the spectrum of R and the intensity of red colour is maximum in the spectrum of Q. If T_P, T_Q and T_R are the respective absolute temperatures of P, Q and R, then it can be concluded from the above observations that [AIPMT 2015 (Cancelled)]

(1) $T_P < T_R < T_Q$ (2) $T_P < T_Q < T_R$

(3) $T_P > T_Q > T_R$ (4) $T_P > T_R > T_Q$

Scan or tap for the full solution

Q.18 The approximate depth of an ocean is 2700 m. The compressibility of water is 45.4×10^{-11} Pa^{-1} and density of water is 10^3 kg/m^3. What fractional compression of water will be obtained at the bottom of the ocean? [AIPMT 2015 (Cancelled)]

(1) 1.2×10^{-2} (2) 1.4×10^{-2}

(3) 0.8×10^{-2} (4) 1.0×10^{-2}

Scan or tap for the full solution

Q.19 The ratio of the specific heats $\frac{C_p}{C_v} = \gamma$ in terms of degrees of freedom (n) is given by [AIPMT 2015 (Cancelled)]

(1) $\left(1+\frac{2}{n}\right)$ (2) $\left(1+\frac{n}{2}\right)$

(3) $\left(1+\frac{1}{n}\right)$ (4) $\left(1+\frac{n}{3}\right)$

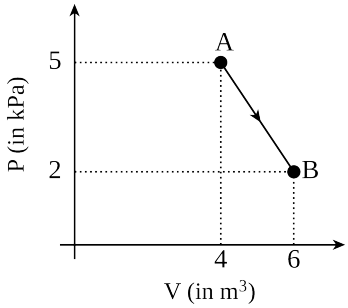
Scan or tap for the full solution

Q.20 A Carnot engine, having an efficiency of $\eta = \frac{1}{10}$ as heat engine, is used as a refrigerator. If the work done on the system is 10 J, the amount of energy absorbed from the reservoir at lower temperature is [AIPMT 2015 (Cancelled)]

(1) 90 J (2) 1 J (3) 100 J (4) 99 J

Scan or tap for the full solution

Q.21 One mole of an ideal diatomic gas undergoes a transition from A to B along a path AB as shown in the figure.

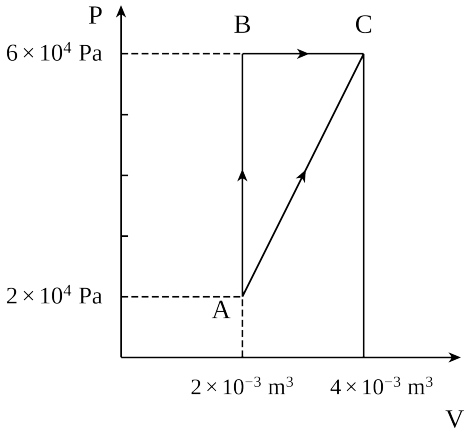


The change in internal energy of the gas during the transition is [AIPMT 2015 (Cancelled)]

(1) 20 J (2) −12 kJ (3) 20 kJ (4) −20 kJ

Scan or tap for the full solution

Q.22 Figure below shows two paths that may be taken by a gas to go from a state A to a state C.



In process AB, 400 J of heat is added to the system and in process BC, 100 J of heat is added to the system. The heat absorbed by the system in the process AC will be [AIPMT 2015 (Cancelled)]

(1) 460 J (2) 300 J (3) 380 J (4) 500 J

Scan or tap for the full solution

Q.23 A particle is executing SHM along a straight line. Its velocities at distances x_1 and x_2 from the mean position are V_1 and V_2 respectively. Its time period is [AIPMT 2015 (Cancelled)]

(1) $2\pi\sqrt{\frac{V_1^2+V_2^2}{x_1^2+x_2^2}}$ (2) $2\pi\sqrt{\frac{V_1^2-V_2^2}{x_1^2-x_2^2}}$

(3) $2\pi\sqrt{\frac{x_1^2+x_2^2}{V_1^2+V_2^2}}$ (4) $2\pi\sqrt{\frac{x_2^2-x_1^2}{V_1^2-V_2^2}}$

Scan or tap for the full solution

Q.24 When two displacements represented by $y_1 = a\sin(\omega t)$ and $y_2 = b\cos(\omega t)$ are superimposed the motion is [AIPMT 2015 (Cancelled)]

(1) simple harmonic with amplitude $\sqrt{a^2+b^2}$

(2) simple harmonic with amplitude $\frac{(a+b)}{2}$

(3) not a simple harmonic

(4) simple harmonic with amplitude $\frac{a}{b}$

Scan or tap for the full solution

Q.25 The electric field in a certain region is acting radially outward and is given by E = Ar. A charge contained in a sphere of radius 'a' centred at the origin of the field, will be given by [AIPMT 2015 (Cancelled)]

(1) $4\pi\varepsilon_0 Aa^3$ (2) $\varepsilon_0 Aa^3$ (3) $4\pi\varepsilon_0 Aa^2$ (4) $A\varepsilon_0 a^2$

Scan or tap for the full solution

Q.26 A parallel plate air capacitor of capacitance C is connected to a cell of emf V and then disconnected from it. A dielectric slab of dielectric constant K, which can just fill the air gap of the capacitor, is now inserted in it. Which of the following is incorrect? [AIPMT 2015 (Cancelled)]

(1) The change in energy stored is $\frac{1}{2}CV^2\left(\frac{1}{K}-1\right)$

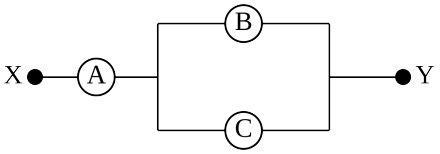
(2) The charge on the capacitor is not conserved.

(3) The potential difference between the plates decreases K times.

(4) The energy stored in the capacitor decreases K times.

Scan or tap for the full solution

Q.27 A, B and C are voltmeters of resistance R, 1.5R and 3R respectively as shown in the figure. When some potential difference is applied between X and Y, the voltmeter readings are V_A, V_B and V_C respectively, Then [AIPMT 2015 (Cancelled)]



(1) $V_A = V_B \neq V_C$ (2) $V_A \neq V_B \neq V_C$

(3) $V_A = V_B = V_C$ (4) $V_A \neq V_B = V_C$

Scan or tap for the full solution

Q.28 Across a metallic conductor of non-uniform cross section a constant potential difference is applied. The quantity which remains constant along the conductor is [AIPMT 2015 (Cancelled)]

(1) drift velocity (2) electric field

(3) current density (4) current

Scan or tap for the full solution

Q.29 A potentiometer wire has length 4 m and resistance 8 Ω. The resistance that must be connected in series with the wire and an accumulator of e.m.f. 2 V, so as to get a potential gradient 1 mV per cm on the wire is [AIPMT 2015 (Cancelled)]

(1) 44 Ω (2) 48 Ω (3) 32 Ω (4) 40 Ω

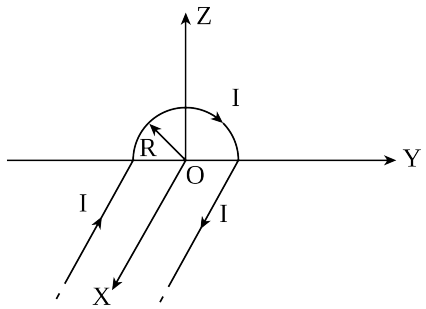
Scan or tap for the full solution

Q.30 An electron moving in a circular orbit of radius r makes n rotations per second. The magnetic field produced at the centre has magnitude [AIPMT 2015 (Cancelled)]

(1) $\frac{\mu_0 n^2 e}{r}$ (2) $\frac{\mu_0 ne}{2r}$ (3) $\frac{\mu_0 ne}{2\pi r}$ (4) Zero

Scan or tap for the full solution

Q.31 A wire carrying current I has the shape shown in adjoining figure.



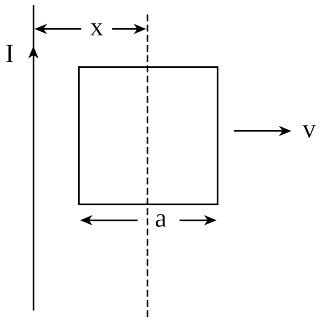
Linear parts of the wire are very long and parallel to X-axis while semicircular portion of radius R is lying in Y-Z plane. Magnetic field at point O is [AIPMT 2015 (Cancelled)]

(1) $\vec{B} = -\frac{\mu_0 I}{4\pi R}(\pi\hat{i} + 2\hat{k})$ (2) $\vec{B} = \frac{\mu_0 I}{4\pi R}(\pi\hat{i} - 2\hat{k})$

(3) $\vec{B} = \frac{\mu_0 I}{4\pi R}(\pi\hat{i} + 2\hat{k})$ (4) $\vec{B} = -\frac{\mu_0 I}{4\pi R}(\pi\hat{i} - 2\hat{k})$

Scan or tap for the full solution

Q.32 A conducting square frame of side 'a' and a long straight wire carrying current I are located in the same plane as shown in the figure. The frame moves to the right with a constant velocity 'V'. The emf induced in the frame will be proportional to [AIPMT 2015 (Cancelled)]



(1) $\frac{1}{(2x+a)^2}$ (2) $\frac{1}{(2x-a)(2x+a)}$

(3) $\frac{1}{x^2}$ (4) $\frac{1}{(2x-a)^2}$

Scan or tap for the full solution

Q.33 A resistance 'R' draws power 'P' when connected to an AC source. If an inductance is now placed in series with the resistance, such that the impedance of the circuit becomes 'Z', the power drawn will be [AIPMT 2015 (Cancelled)]

(1) $P\left(\frac{R}{Z}\right)$ (2) P (3) $P\left(\frac{R}{Z}\right)^2$ (4) $P\sqrt{\frac{R}{Z}}$

Scan or tap for the full solution

Q.34 A radiation of energy 'E' falls normally on a perfectly reflecting surface. The momentum transferred to the surface is (C = Velocity of light) [AIPMT 2015 (Cancelled)]

(1) $\frac{2E}{C^2}$ (2) $\frac{E}{C^2}$ (3) $\frac{E}{C}$ (4) $\frac{2E}{C}$

Scan or tap for the full solution

Q.35 For a parallel beam of monochromatic light of wavelength 'λ', diffraction is produced by a single slit whose width 'a' is of the order of the wavelength of the light. If 'D' is the distance of the screen from the slit, the width of the central maxima will be [AIPMT 2015 (Cancelled)]

(1) $\frac{Da}{\lambda}$ (2) $\frac{2Da}{\lambda}$ (3) $\frac{2D\lambda}{a}$ (4) $\frac{D\lambda}{a}$

Scan or tap for the full solution

Q.36 Two identical thin plano-convex glass lenses (refractive index 1.5) each having radius of curvature of 20 cm are placed with their convex surfaces in contact at the centre. The intervening space is filled with oil of refractive index 1.7. The focal length of the combination is [AIPMT 2015 (Cancelled)]

(1) −50 cm (2) 50 cm (3) −20 cm (4) −25 cm

Scan or tap for the full solution

Q.37 The refracting angle of a prism is A, and refractive index of the material of the prism is cot(A/2). The angle of minimum deviation is [AIPMT 2015 (Cancelled)]

(1) 90° − A (2) 180° + 2A

(3) 180° − 3A (4) 180° − 2A

Scan or tap for the full solution

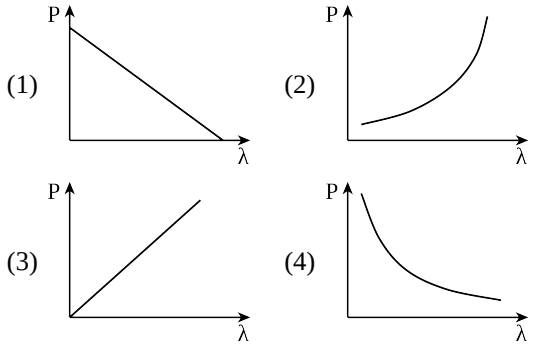
Q.38 In a double slit experiment, the two slits are 1 mm apart and the screen is placed 1 m away. A monochromatic light of wavelength 500 nm is used. What will be the width of each slit for obtaining ten maxima of double slit within the central maxima of single slit pattern? [AIPMT 2015 (Cancelled)]

(1) 0.5 mm (2) 0.02 mm

(3) 0.2 mm (4) 0.1 mm

Scan or tap for the full solution

Q.39 Which of the following figures represent the variation of particle momentum and the associated de-Broglie wavelength? [AIPMT 2015 (Cancelled)]



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Q.40 A certain metallic surface is illuminated with monochromatic light of wavelength, λ. The stopping potential for photo-electric current for this light is $3V_0$. If the same surface is illuminated with light of wavelength 2λ, the stopping potential is V_0. The threshold wavelength for this surface for photo-electric effect is [AIPMT 2015 (Cancelled)]

(1) $\frac{\lambda}{4}$ (2) $\frac{\lambda}{6}$ (3) 6λ (4) 4λ

Scan or tap for the full solution

Q.41 Consider 3rd orbit of He^+ (Helium), using non-relativistic approach, the speed of electron in this orbit will be [given K = 9×10^9 constant, Z = 2 and h (Planck's Constant) = 6.6×10^{-34} J s] [AIPMT 2015 (Cancelled)]

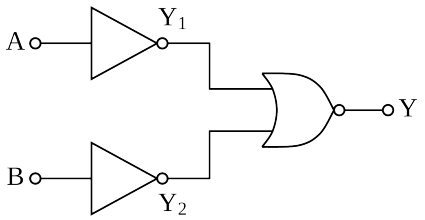
(1) 0.73×10^6 m/s (2) 3.0×10^8 m/s

(3) 2.92×10^6 m/s (4) 1.46×10^6 m/s

Scan or tap for the full solution

Q.42 Which logic gate is represented by the following combination of logic gates?

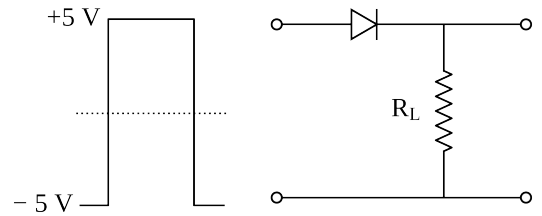
[AIPMT 2015 (Cancelled)]



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

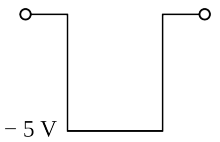
Scan or tap for the full solution

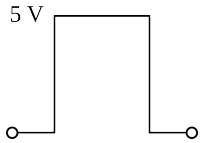
Q.43 If in a p-n junction, a square input signal of 10 V is applied, as shown,



then the output across R_L will be

[AIPMT 2015 (Cancelled)]

(1)


(2)


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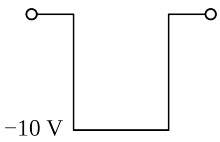

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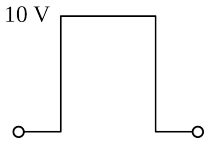


Scan or tap for the full solution

Q.44 If radius of the $^{27}_{13}Al$ nucleus is taken to be R_{Al}, then the radius of $^{125}_{53}Te$ nucleus is nearly

[AIPMT 2015 (Cancelled)]

(1) $\frac{3}{5}R_{Al}$ (2) $\left(\frac{13}{53}\right)^{1/3} R_{Al}$

(3) $\left(\frac{53}{13}\right)^{1/3} R_{Al}$ (4) $\frac{5}{3}R_{Al}$

Scan or tap for the full solution

Q.45 A mixture of gases contains H_2 and O_2 gases in the ratio of 1 : 4 (w/w). What is the molar ratio of the two gases in the mixture ? [AIPMT 2015 (Cancelled)]

(1) 16 : 1 (2) 2 : 1 (3) 1 : 4 (4) 4 : 1

Scan or tap for the full solution

Q.46 The number of d-electrons in Fe^{2+} (Z = 26) is not equal to the number of electrons in which one of the following ? [AIPMT 2015 (Cancelled)]

(1) d-electrons in Fe (Z = 26)
(2) p-electrons in Ne (Z = 10)
(3) s-electrons in Mg (Z = 12)
(4) p-electrons in Cl (Z = 17)

Scan or tap for the full solution

Q.47 The angular momentum of electron in 'd' orbital is equal to [AIPMT 2015 (Cancelled)]

(1) $2\sqrt{3}\,\hbar$ (2) $0\,\hbar$ (3) $\sqrt{6}\,\hbar$ (4) $\sqrt{2}\,\hbar$

Scan or tap for the full solution

Q.48 The species Ar, K^+ and Ca^{2+} contain the same number of electrons. In which order do their radii increase ? [AIPMT 2015 (Cancelled)]

(1) $Ca^{2+} < K^+ < Ar$ (2) $K^+ < Ar < Ca^{2+}$
(3) $Ar < K^+ < Ca^{2+}$ (4) $Ca^{2+} < Ar < K^+$

Scan or tap for the full solution

Q.49 Which of the following pairs of ions are isoelectronic and isostructural ?

[AIPMT 2015 (Cancelled)]

(1) SO_3^{2-}, NO_3^- (2) ClO_3^-, SO_3^{2-}
(3) CO_3^{2-}, SO_3^{2-} (4) ClO_3^-, CO_3^{2-}

Scan or tap for the full solution

Q.50 The correct bond order in the following species is

[AIPMT 2015 (Cancelled)]

(1) $O_2^+ < O_2^- < O_2^{2+}$ (2) $O_2^- < O_2^+ < O_2^{2+}$
(3) $O_2^{2+} < O_2^+ < O_2^-$ (4) $O_2^{2+} < O_2^- < O_2^+$

Scan or tap for the full solution

Q.51 Which of the following options represents the correct bond order ? [AIPMT 2015 (Cancelled)]

(1) $O_2^- > O_2 < O_2^+$ (2) $O_2^- < O_2 > O_2^+$
(3) $O_2^- > O_2 > O_2^+$ (4) $O_2^- < O_2 < O_2^+$

Scan or tap for the full solution

Q.52 Maximum bond angle at nitrogen is present in which of the following ? [AIPMT 2015 (Cancelled)]

(1) NO_2^+ (2) NO_3^- (3) NO_2 (4) NO_2^-

Scan or tap for the full solution

Q.53 The K_{sp} of Ag_2CrO_4, AgCl, AgBr and AgI are respectively, 1.1×10^{-12}, 1.8×10^{-10}, 5.0×10^{-13}, 8.3×10^{-17}. Which one of the following salts will precipitate last if $AgNO_3$ solution is added to the solution containing equal moles of NaCl, NaBr, NaI and Na_2CrO_4? [AIPMT 2015 (Cancelled)]

(1) AgBr (2) Ag_2CrO_4
(3) AgI (4) AgCl

Scan or tap for the full solution

Q.54 Which of the following statements is correct for a reversible process in a state of equilibrium? [AIPMT 2015 (Cancelled)]

(1) $\Delta G^\circ = -2.30\ RT\log K$
(2) $\Delta G^\circ = 2.30\ RT\log K$
(3) $\Delta G = -2.30\ RT\log K$
(4) $\Delta G = 2.30\ RT\log K$

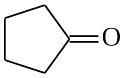
Scan or tap for the full solution

Q.55 If the value of equilibrium constant for a particular reaction is 1.6×10^{12}, then at equilibrium the system will contain [AIPMT 2015 (Cancelled)]

(1) mostly products
(2) similar amounts of reactants and products
(3) all reactants
(4) mostly reactants.

Scan or tap for the full solution

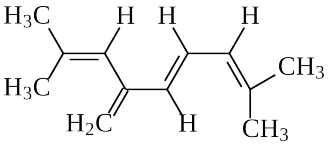
Q.56 Treatment of cyclopentanone with methyl lithium gives which of the following species ? [AIPMT 2015 (Cancelled)]



(1) Cyclopentanonyl radical
(2) Cyclopentanonyl biradical
(3) Cyclopentanonyl anion
(4) Cyclopentanonyl cation

Scan or tap for the full solution

Q.57 The total number of π-bond electrons in the following structure is [AIPMT 2015 (Cancelled)]



(1) 12 (2) 16 (3) 4 (4) 8

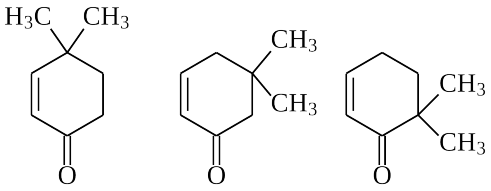
Scan or tap for the full solution

Q.58 Which of the following species contains equal number of σ- and π-bonds ? [AIPMT 2015 (Cancelled)]

(1) $(CN)_2$ (2) $CH_2(CN)_2$
(3) HCO_3^- (4) XeO_4

Scan or tap for the full solution

Q.59 Given :



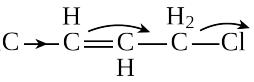
(I) (II) (III)

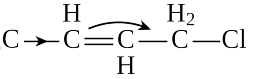
Which of the given compounds can exhibit tautomerism? [AIPMT 2015 (Cancelled)]

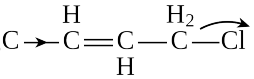
(1) II and III (2) I, II and III
(3) I and II (4) I and III

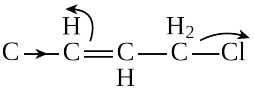
Scan or tap for the full solution

Q.60 Which of the following is the most correct electron displacement for a nucleophilic reaction to take place? [AIPMT 2015 (Cancelled)]

(1) 

(2) 

(3) 

(4) 

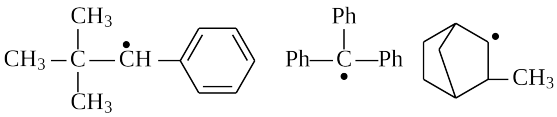
Scan or tap for the full solution

Q.61 In Dumas method for estimation of nitrogen, 0.25 g of an organic compound gave 40 mL of nitrogen collected at 300 K temperature and 725 mm pressure. If the aqueous tension at 300 K is 25 mm, the percentage of nitrogen in the compound is [AIPMT 2015 (Cancelled)]

(1) 16.75 (2) 15.76 (3) 17.36 (4) 18.20

Scan or tap for the full solution

Q.62 Consider the following compounds :



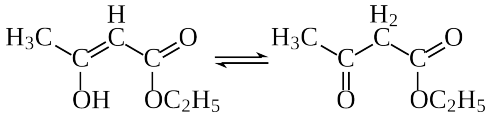
(I) (II) (III)

Hyperconjugation occurs in [AIPMT 2015 (Cancelled)]

(1) III only (2) I and III (3) I only (4) II only

Scan or tap for the full solution

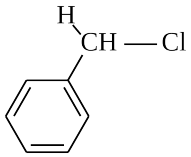
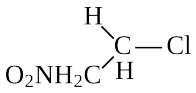
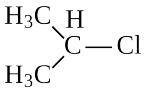
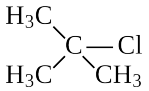
Q.63 The enolic form of ethyl acetoacetate as shown below has [AIPMT 2015 (Cancelled)]



(1) 9 sigma bonds and 2 pi-bonds
(2) 9 sigma bonds and 1 pi-bond
(3) 18 sigma bonds and 2 pi-bonds
(4) 16 sigma bonds and 1 pi-bond.

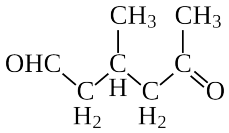
Scan or tap for the full solution

Q.64 In which of the following compounds, the C–Cl bond ionisation shall give most stable carbonium ion? [AIPMT 2015 (Cancelled)]

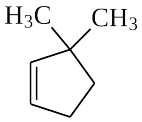
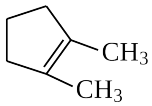
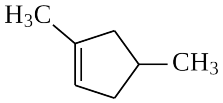
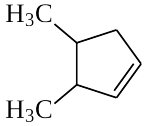
(1) 
(2) 
(3) 
(4) 

Scan or tap for the full solution

Q.65 A single compound of the structure,

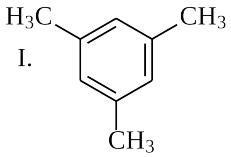
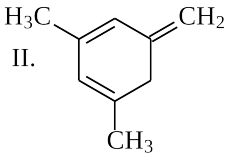
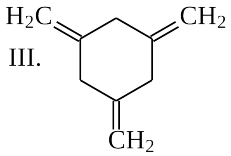


is obtainable from ozonolysis of which of the following cyclic compounds? [AIPMT 2015 (Cancelled)]

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

Scan or tap for the full solution

Q.66 Given :

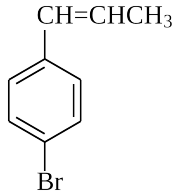
I. 
II. 
III. 

The enthalpy of hydrogenation of these compounds will be in the order as [AIPMT 2015 (Cancelled)]

(1) II > III > I (2) II > I > III
(3) I > II > III (4) III > II > I

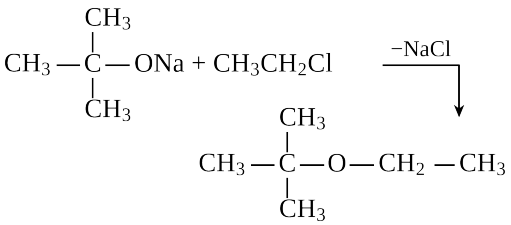
Scan or tap for the full solution

Q.67 The reaction of $C_6H_5CH{=}CHCH_3$ with HBr produces [AIPMT 2015 (Cancelled)]

(1) $C_6H_5CH_2CH_2CH_2Br$
(2) 
(3) $C_6H_5\underset{\underset{Br}{|}}{C}HCH_2CH_3$
(4) $C_6H_5CH_2\underset{\underset{Br}{|}}{C}HCH_3$

Scan or tap for the full solution

Q.68 The reaction,



is called [AIPMT 2015 (Cancelled)]

(1) Etard reaction
(2) Gattermann-Koch reaction
(3) Williamson synthesis
(4) Williamson continuous etherification process

Scan or tap for the full solution

Q.69 An organic compound 'X' having molecular formula $C_5H_{10}O$ yields phenylhydrazone and gives negative response to the iodoform test and Tollens' test. It produces n-pentane on reduction. 'X' could be [AIPMT 2015 (Cancelled)]

(1) 3-pentanone (2) n-amyl alcohol
(3) pentanal (4) 2-pentanone

Scan or tap for the full solution

Q.70 The electrolytic reduction of nitrobenzene in strongly acidic medium produces [AIPMT 2015 (Cancelled)]

(1) azobenzene (2) aniline
(3) p-aminophenol (4) azoxybenzene.

Scan or tap for the full solution

Q.71 The boiling point of 0.2 mol kg^{-1} solution of X in water is greater than equimolal solution of Y in water. Which one of the following statements is true in this case? [AIPMT 2015 (Cancelled)]

(1) Molecular mass of X is less than the molecular mass of Y.
(2) Y is undergoing dissociation in water while X undergoes no change.
(3) X is undergoing dissociation in water.
(4) Molecular mass of X is greater than the molecular mass of Y.

Scan or tap for the full solution

Q.72 Which one of the following electrolytes has the same value of van't Hoff factor (i) as that of $Al_2(SO_4)_3$ (if all are 100% ionised)? [AIPMT 2015 (Cancelled)]

(1) $Al(NO_3)_3$ (2) $K_4[Fe(CN)_6]$
(3) K_2SO_4 (4) $K_3[Fe(CN)_6]$

Scan or tap for the full solution

Q.73 Which of them is not equal to zero for an ideal solution? [AIPMT 2015 (Cancelled)]

(1) ΔV_{mix} (2) $\Delta P = P_{observed} - P_{Raoult}$
(3) ΔH_{mix} (4) ΔS_{mix}

Scan or tap for the full solution

Q.74 A device that converts energy of combustion of fuels like hydrogen and methane, directly into electrical energy is known as [AIPMT 2015 (Cancelled)]

(1) dynamo (2) Ni-Cd cell
(3) fuel cell (4) electrolytic cell

Scan or tap for the full solution

Q.75 The activation energy of a reaction can be determined from the slope of which of the following graphs? [AIPMT 2015 (Cancelled)]

(1) $\ln k$ vs. $\frac{1}{T}$ (2) $\frac{T}{\ln k}$ vs. $\frac{1}{T}$
(3) $\ln k$ vs. T (4) $\frac{\ln k}{T}$ vs. T

Scan or tap for the full solution

Q.76 When initial concentration of a reactant is doubled in a reaction, its half-life period is not affected. The order of the reaction is [AIPMT 2015 (Cancelled)]

(1) second
(2) more than zero but less than first
(3) zero
(4) first.

Scan or tap for the full solution

Q.77 Nitrogen dioxide and sulphur dioxide have some properties in common. Which property is shown by one of these compounds, but not by the other? [AIPMT 2015 (Cancelled)]

(1) Is soluble in water.
(2) Is used as a food preservative.
(3) Forms 'acid-rain'.
(4) Is a reducing agent.

Scan or tap for the full solution

Q.78 Magnetic moment 2.84 B.M. is given by (At. nos. Ni = 28, Ti = 22, Cr = 24, Co = 27) [AIPMT 2015 (Cancelled)]

(1) Cr^{2+} (2) Co^{2+} (3) Ni^{2+} (4) Ti^{3+}

Scan or tap for the full solution

Q.79 Which of the following processes does not involve oxidation of iron? [AIPMT 2015 (Cancelled)]

(1) Formation of $Fe(CO)_5$ from Fe.
(2) Liberation of H_2 from steam by iron at high temperature.
(3) Rusting of iron sheets.
(4) Decolourisation of blue $CuSO_4$ solution by iron.

Scan or tap for the full solution

Q.80 Because of lanthanoid contraction, which of the following pairs of elements have nearly same atomic radii? (Numbers in the parenthesis are atomic numbers) [AIPMT 2015 (Cancelled)]

(1) Zr(40) and Hf(72) (2) Zr(40) and Ta(73)
(3) Ti(22) and Zr(40) (4) Zr(40) and Nb(41)

Scan or tap for the full solution

Q.81 Cobalt (III) chloride forms several octahedral complexes with ammonia. Which of the following will not give test for chloride ions with silver nitrate at 25°C? [AIPMT 2015 (Cancelled)]

(1) $CoCl_3 \cdot 5NH_3$ (2) $CoCl_3 \cdot 6NH_3$
(3) $CoCl_3 \cdot 3NH_3$ (4) $CoCl_3 \cdot 4NH_3$

Scan or tap for the full solution

Q.82 Which of these statements about $[Co(CN)_6]^{3-}$ is true? [AIPMT 2015 (Cancelled)]

(1) $[Co(CN)_6]^{3-}$
has four unpaired electrons and will be in a high-spin configuration.

(2) $[Co(CN)_6]^{3-}$
has no unpaired electrons and will be in a high-spin configuration.

(3) $[Co(CN)_6]^{3-}$
has no unpaired electrons and will be in a low-spin configuration.

(4) $[Co(CN)_6]^{3-}$
has four unpaired electrons and will be in a low-spin configuration.

Scan or tap for the full solution

Q.83 The function of "Sodium pump" is a biological process operating in each and every cell of all animals. Which of the following biologically important ions is also a constituent of this pump? [AIPMT 2015 (Cancelled)]

(1) K^+ (2) Fe^{2+} (3) Ca^{2+} (4) Mg^{2+}

Scan or tap for the full solution

Q.84 Solubility of the alkaline earth metal sulphates in water decreases in the sequence [AIPMT 2015 (Cancelled)]

(1) Sr > Ca > Mg > Ba (2) Ba > Mg > Sr > Ca
(3) Mg > Ca > Sr > Ba (4) Ca > Sr > Ba > Mg

Scan or tap for the full solution

Q.85 Biodegradable polymer which can be produced from glycine and aminocaproic acid is [AIPMT 2015 (Cancelled)]

(1) buna - N (2) nylon 6, 6
(3) nylon 2-nylon 6 (4) PHBV

Scan or tap for the full solution

Q.86 A given metal crystallises out with a cubic structure having edge length of 361 pm. If there are four metal atoms in one unit cell, what is the radius of one atom? [AIPMT 2015 (Cancelled)]

(1) 80 pm (2) 108 pm (3) 40 pm (4) 127 pm

Scan or tap for the full solution

Q.87 Which property of colloidal solution is independent of charge on the colloidal particles? [AIPMT 2015 (Cancelled)]

(1) Electro-osmosis (2) Tyndall effect
(3) Coagulation (4) Electrophoresis

Scan or tap for the full solution

Q.88 "Metals are usually not found as nitrates in their ores." Out of the following two (I and II) reasons which is/are true for the above observation?
I. Metal nitrates are highly unstable.
II. Metal nitrates are highly soluble in water.
[AIPMT 2015 (Cancelled)]

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

Scan or tap for the full solution

Q.89 Bithional is generally added to the soaps as an additive to function as a/n [AIPMT 2015 (Cancelled)]

(1) buffering agent (2) antiseptic
(3) softener (4) dryer

Scan or tap for the full solution

Q.90 True nucleus is absent in [AIPMT 2015 (Cancelled)]

(1) *Vaucheria* (2) *Volvox*
(3) *Anabaena* (4) *Mucor*.

Scan or tap for the full solution

Q.91 Which one of the following matches is correct? [AIPMT 2015 (Cancelled)]

(1) *Mucor*
– Reproduction by conjugation – Ascomycetes

(2) *Agaricus*
– Parasitic fungus – Basidiomycetes

(3) *Phytophthora*
– Aseptate mycelium – Basidiomycetes

(4) *Alternaria*
– Sexual reproduction absent – Deuteromycetes

Scan or tap for the full solution

Q.92 Which one of the following statements is wrong? [AIPMT 2015 (Cancelled)]

(1) *Chlorella* and *Spirulina* are used as space food.
(2) Mannitol is stored food in Rhodophyceae.
(3) Algin and carrageenan are products of algae.
(4) Agar-agar is obtained from *Gelidium* and *Gracilaria*.

Scan or tap for the full solution

Q.93 In which of the following, gametophyte is not independent free living? [AIPMT 2015 (Cancelled)]

(1) *Pteris* (2) *Pinus*
(3) *Funaria* (4) *Marchantia*

Scan or tap for the full solution

Q.94 Read the following five statements (A to E) and select the option with all correct statements.

A. Mosses and lichens are the first organisms to colonise a bare rock.
B. *Selaginella* is a homosporous pteridophyte.
C. Coralloid roots in *Cycas* have VAM.
D. Main plant body in bryophytes is gametophytic, whereas in pteridophytes it is sporophytic.
E. In gymnosperms, male and female gametophytes are present within sporangia located on sporophyte. [AIPMT 2015 (Cancelled)]

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

Scan or tap for the full solution

Q.95 Male gametes are flagellated in [AIPMT 2015 (Cancelled)]

(1) *Ectocarpus* (2) *Spirogyra*
(3) *Polysiphonia* (4) *Anabaena*.

Scan or tap for the full solution

Q.96 Perigynous flowers are found in [AIPMT 2015 (Cancelled)]

(1) China rose (2) rose
(3) guava (4) cucumber.

Scan or tap for the full solution

Q.97 Keel is the characteristic feature of flower of [AIPMT 2015 (Cancelled)]

(1) *Aloe* (2) tomato
(3) tulip (4) *Indigofera*.

Scan or tap for the full solution

Q.98 Leaves become modified into spines in [AIPMT 2015 (Cancelled)]

(1) onion (2) silk cotton
(3) *Opuntia* (4) pea

Scan or tap for the full solution

Q.99 ⊕ ⚥ $K_{(5)}$ $\overset{\frown}{C_{(5)}\ A_5}$ $\underline{G}_{(2)}$

is the floral formula of [AIPMT 2015 (Cancelled)]

(1) *Petunia* (2) *Brassica* (3) *Allium* (4) *Sesbania*.

Scan or tap for the full solution

Q.100 Which one of the following statements is incorrect? [AIPMT 2015 (Cancelled)]

(1) The competitive inhibitor does not affect the rate of breakdown of the enzyme-substrate complex.
(2) The presence of the competitive inhibitor decreases the K_m of the enzyme for the substrate.
(3) A competitive inhibitor reacts reversibly with the enzyme to form an enzyme-inhibitor complex.
(4) In competitive inhibition, the inhibitor molecule is not chemically changed by the enzyme.

Scan or tap for the full solution

Q.101 A somatic cell that has just completed the S phase of its cell cycle, as compared to gamete of the same species, has [AIPMT 2015 (Cancelled)]

(1) twice the number of chromosomes and four times the amount of DNA
(2) four times the number of chromosomes and twice the amount of DNA
(3) twice the number of chromosomes and twice the amount of DNA
(4) same number of chromosomes but twice the amount of DNA.

Scan or tap for the full solution

Column I		Column II	
A.	Synapsis aligns homologous chromosomes	i.	Anaphase II
B.	Synthesis of RNA and protein	ii.	Zygotene
C.	Action of enzymes recombinase	iii.	G_2-phase
D.	Centromeres do not separate but chromatids move towards opposite poles	iv.	Anaphase I
		v.	Pachytene

Q.102 Select the correct option. [AIPMT 2015 (Cancelled)]

(1) (A) - (i); (B) - (ii); (C) - (v); (D) - (iv)
(2) (A) - (ii); (B) - (iii); (C) - (iv); (D) - (v)
(3) (A) - (ii); (B) - (i); (C) - (iii); (D) - (iv)
(4) (A) - (ii); (B) - (iii); (C) - (v); (D) - (iv)

Scan or tap for the full solution

Q.103 Cytochromes are found in [AIPMT 2015 (Cancelled)]

(1) cristae of mitochondria

(2) lysosomes

(3) matrix of mitochondria

(4) outer wall of mitochondria.

Scan or tap for the full solution

Q.104 What causes a green plant exposed to the light, on only one side, to bend towards the source of light as it grows? [AIPMT 2015 (Cancelled)]

(1) Light stimulates plant cells on the lighted side to grow faster.

(2) Auxin accumulates on the shaded side, stimulating greater cell elongation there.

(3) Green plants need light to perform photosynthesis.

(4) Green plants seek light because they are phototropic.

Scan or tap for the full solution

Q.105 Typical growth curve in plants is [AIPMT 2015 (Cancelled)]

(1) stair-steps shaped (2) parabolic

(3) sigmoid (4) linear.

Scan or tap for the full solution

Q.106 Which of the following are the important floral rewards to the animal pollinators? [AIPMT 2015 (Cancelled)]

(1) Floral fragrance and calcium crystals

(2) Protein pellicle and stigmatic exudates

(3) Colour and large size of flower

(4) Nectar and pollen grains

Scan or tap for the full solution

Q.107 Which one of the following may require pollinators, but is genetically similar to autogamy? [AIPMT 2015 (Cancelled)]

(1) Apogamy (2) Cleistogamy

(3) Geitonogamy (4) Xenogamy

Scan or tap for the full solution

Q.108 Which one of the following statements is not true? [AIPMT 2015 (Cancelled)]

(1) The flowers pollinated by flies and bats secrete foul odour to attract them.

(2) Honey is made by bees by digesting pollen collected from flowers.

(3) Pollen grains are rich in nutrients and they are used in the form of tablets and syrups.

(4) Pollen grains of some plants cause severe allergies and bronchial afflictions in some people.

Scan or tap for the full solution

Q.109 Transmission tissue is characteristic feature of [AIPMT 2015 (Cancelled)]

(1) dry stigma (2) wet stigma

(3) hollow style (4) solid style.

Scan or tap for the full solution

Q.110 Gene regulation governing lactose operon of *E. coli* that involves the lac I gene product is [AIPMT 2015 (Cancelled)]

(1) negative and inducible because repressor protein prevents transcription.

(2) positive and inducible because it can be induced by lactose

(3) negative and repressible because repressor protein prevents transcription

(4) feedback inhibition because excess of β-galactosidase can switch off transcription

Scan or tap for the full solution

Q.111 In sea urchin DNA, which is double stranded, 17% of the bases were shown to be cytosine. The percentages of the other three bases expected to be present in this DNA are [AIPMT 2015 (Cancelled)]

(1) G 17%, A 16.5%, T 32.5%

(2) G 17%, A 33%, T 33%

(3) G 8.5%, A 50%, T 24.5%

(4) G 34%, A 24.5%, T 24.5%

Scan or tap for the full solution

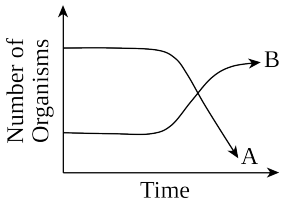
Q.112 The guts of cow and buffalo possess [AIPMT 2015 (Cancelled)]

(1) Cyanobacteria (2) *Fucus* sp.

(3) Methanogens (4) *Chlorella* sp.

Scan or tap for the full solution

Q.113 The following graph depicts changes in two populations (A and B) of herbivores in a grassy field. A possible reason for these changes is that: [AIPMT 2015 (Cancelled)]



(1) Population B competed more successfully for food than population A
(2) Population A consumed the members of population B
(3) Both plant populations in this habitat decreased
(4) Population A produced more offspring than population B

Scan or tap for the full solution

Q.114 The mass of living material at a trophic level at a particular time is called : [AIPMT 2015 (Cancelled)]
(1) Net primary productivity
(2) Standing state
(3) Standing crop
(4) Gross primary productivity

Scan or tap for the full solution

Q.115 Vertical distribution of different species occupying different levels in a biotic community is known as : [AIPMT 2015 (Cancelled)]
(1) Stratification (2) Pyramid
(3) Divergence (4) Zonation

Scan or tap for the full solution

Q.116 Secondary Succession takes place on/in : [AIPMT 2015 (Cancelled)]
(1) Newly created pond (2) Newly cooled lava
(3) Bare rock (4) Degraded forest

Scan or tap for the full solution

Q.117 Most animals are tree dwellers in a: [AIPMT 2015 (Cancelled)]
(1) temperate deciduous forest
(2) tropical rain forest
(3) coniferous forest
(4) thorn woodland

Scan or tap for the full solution

Q.118 In an ecosystem the rate of production of organic matter during photosynthesis is termed as : [AIPMT 2015 (Cancelled)]
(1) Secondary productivity
(2) Net Productivity
(3) Net primary productivity
(4) Gross primary productivity

Scan or tap for the full solution

Q.119 In which of the following both pairs have correct combination ? [AIPMT 2015 (Cancelled)]
(1) In situ conservation : Cryopreservation
Ex situ conservation : Wildlife Sanctuary
(2) In situ conservation : Tissue culture
Ex situ conservation : Sacred groves
(3) In situ conservation : National Park
Ex situ conservation : Botanical Garden
(4) In situ conservation : Seed Bank
Ex situ conservation : National Park

Scan or tap for the full solution

Q.120 Cryopreservation of gametes of threatened species in viable and fertile condition can be referred to as: [AIPMT 2015 (Cancelled)]
(1) In situ conservation by sacred groves
(2) In situ conservation of biodiversity
(3) In situ cryo-conservation of biodiversity
(4) Advanced ex-situ conservation of biodiversity

Scan or tap for the full solution

Q.121 A major characteristic of the monocot root is the presence of : [AIPMT 2015 (Cancelled)]
(1) Vasculature without cambium
(2) Cambium sandwiched between phloem and xylem along the radius
(3) Open vascular bundles
(4) Scattered vascular bundles

Scan or tap for the full solution

Q.122 Vascular bundles in monocotyledons are considered closed because [AIPMT 2015 (Cancelled)]
(1) There are no vessels with perforations
(2) Xylem is surrounded all around by phloem
(3) A bundle sheath surrounds each bundle
(4) Cambium is absent

Scan or tap for the full solution

Q.123 DNA is not present in : [AIPMT 2015 (Cancelled)]
(1) Nucleus (2) Chloroplast
(3) Mitochondria (4) Ribosomes

Scan or tap for the full solution

Q.124 Nuclear envelope is a derivative of : [AIPMT 2015 (Cancelled)]

(1) Membrane of Golgi complex
(2) Smooth endoplasmic reticulum
(3) Rough endoplasmic reticulum
(4) Microtubules

Scan or tap for the full solution

Q.125 The structures that are formed by stacking of organized flattened membranous sacs in the chloroplasts are [AIPMT 2015 (Cancelled)]

(1) Stroma lamellae (2) Cristae
(3) Stroma (4) Grana

Scan or tap for the full solution

Q.126 Select the correct matching in the following pairs : [AIPMT 2015 (Cancelled)]

(1) Rough ER – Oxidation of fatty acids
(2) Smooth ER – Oxidation of phospholipids
(3) Rough ER – Synthesis of glycogen
(4) Smooth ER – Synthesis of lipids

Scan or tap for the full solution

Q.127 The chromosomes in which centromere is situated close to one end are : [AIPMT 2015 (Cancelled)]

(1) Telocentric (2) Metacentric
(3) Sub-metacentric (4) Acrocentric

Scan or tap for the full solution

Q.128 Which one of the following is not an inclusion body found in prokaryotes? [AIPMT 2015 (Cancelled)]

(1) Cyanophycean granule
(2) Phosphate granule
(3) Polysome
(4) Glycogen granule

Scan or tap for the full solution

Q.129 The hilum is a scar on the [AIPMT 2015 (Cancelled)]

(1) seed, where funicle was attached
(2) fruit, where style was present
(3) fruit, where it was attached to pedicel
(4) seed, where micropyle was present

Scan or tap for the full solution

Q.130 The movement of a gene from one linkage group to another is called [AIPMT 2015 (Cancelled)]

(1) inversion (2) translocation
(3) duplication (4) crossing over

Scan or tap for the full solution

Q.131 Alleles are [AIPMT 2015 (Cancelled)]

(1) true breeding homozygotes
(2) different phenotype
(3) heterozygotes
(4) different molecular forms of a gene

Scan or tap for the full solution

Q.132 Multiple alleles are present [AIPMT 2015 (Cancelled)]

(1) on different chromosomes
(2) at the same locus of the chromosome
(3) at different loci on the same chromosome.
(4) on non-sister chromatids

Scan or tap for the full solution

Q.133 A man with blood group 'A' marries a woman with blood group 'B'. What are all the possible blood groups of their offsprings? [AIPMT 2015 (Cancelled)]

(1) A and B only (2) A, B, AB and O
(3) A, B and AB only (4) O only

Scan or tap for the full solution

Q.134 How many pairs of contrasting characters in pea plants were studied by Mendel in his experiments? [AIPMT 2015 (Cancelled)]

(1) Eight (2) Five (3) Seven (4) Six

Scan or tap for the full solution

Q.135 An abnormal human baby with 'XXX' sex chromosomes was born due to [AIPMT 2015 (Cancelled)]

(1) formation of abnormal sperms in the father
(2) fusion of two ova and one sperm
(3) formation of abnormal ova in the mother
(4) fusion of two sperms and one ovum

Scan or tap for the full solution

Q.136 In ginger, vegetative propagation occurs through [AIPMT 2015 (Cancelled)]

(1) bulbils (2) runners (3) rhizome (4) offsets.

Scan or tap for the full solution

Q.137 In a ring girdled plant [AIPMT 2015 (Cancelled)]
(1) the shoot and root die together
(2) neither root nor shoot will die
(3) the shoot dies first
(4) the root dies first.

Scan or tap for the full solution

Q.138 Transpiration and root pressure cause water to rise in plants by [AIPMT 2015 (Cancelled)]
(1) pushing it upward
(2) pushing and pulling it, respectively
(3) pulling it upward
(4) pulling and pushing it, respectively.

Scan or tap for the full solution

Q.139 Which one gives the most valid and recent explanation for stomatal movement? [AIPMT 2015 (Cancelled)]
(1) Starch hydrolysis
(2) Guard cell photosynthesis
(3) Transpiration
(4) Potassium influx and efflux

Scan or tap for the full solution

Q.140 Minerals known to be required in large amounts for plant growth include [AIPMT 2015 (Cancelled)]
(1) potassium, phosphorus, selenium, boron
(2) magnesium, sulphur, iron, zinc
(3) phosphorus, potassium, sulphur, calcium
(4) calcium, magnesium, manganese, copper.

Scan or tap for the full solution

Q.141 A technique of micropropagation is [AIPMT 2015 (Cancelled)]
(1) somatic embryogenesis
(2) embryo rescue
(3) protoplast fusion
(4) somatic hybridisation

Scan or tap for the full solution

Q.142 Which of the following enhances or induces fusion of protoplasts ? [AIPMT 2015 (Cancelled)]
(1) Sodium chloride and potassium chloride
(2) IAA and kinetin
(3) Polyethylene glycol and sodium nitrate
(4) IAA and gibberellins

Scan or tap for the full solution

Q.143 The UN Conference of Parties on climate change in the year 2011 was held in : [AIPMT 2015 (Cancelled)]
(1) Peru (2) Qatar
(3) Poland (4) South Africa

Scan or tap for the full solution

Q.144 Which of the following is not one of the prime health risks associated with greater UV radiation through the atmosphere due to depletion of stratospheric ozone? [AIPMT 2015 (Cancelled)]
(1) Increased liver cancer
(2) Increased skin cancer
(3) Damage to eyes
(4) Reduced Immune System

Scan or tap for the full solution

Q.145 High value of BOD (Biochemical Oxygen Demand) indicates that : [AIPMT 2015 (Cancelled)]
(1) water is highly polluted
(2) consumption of organic matter in the water is higher by the microbes
(3) water is pure
(4) water is less polluted

Scan or tap for the full solution

Q.146 Rachel Carson's famous book "Silent Spring" is related to: [AIPMT 2015 (Cancelled)]
(1) Population explosion
(2) Pesticide pollution
(3) Ecosystem management
(4) Noise pollution

Scan or tap for the full solution

Q.147 Which of the following endoparasites of humans does show viviparity? [AIPMT 2015 (Cancelled)]
(1) *Trichinella spiralis*
(2) *Ascaris lumbricoides*
(3) *Ancylostoma duodenale*
(4) *Enterobius vermicularis*

Scan or tap for the full solution

Q.148 Which of the following represents the correct combination without any exception?
(Characteristics – Class) [AIPMT 2015 (Cancelled)]

(1) Sucking and circular mouth; jaws absent, integument without scales; paired appendages. – Cyclostomata
(2) Body covered with feathers; skin moist and glandular, forelimbs form wings; lungs with air sacs. – Aves
(3) Mammary gland; hair on body; pinnae; two pairs of limbs. – Mammalia
(4) Mouth ventral; gills without operculum; skin with placoid scales; persistent notochord. – Chondrichthyes

Scan or tap for the full solution

Q.149 Which of the following animals is not viviparous? [AIPMT 2015 (Cancelled)]
(1) Platypus (2) Whale
(3) Flying fox (Bat) (4) Elephant

Scan or tap for the full solution

Q.150 Which of the following characteristics is mainly responsible for diversification of insects on land? [AIPMT 2015 (Cancelled)]
(1) Exoskeleton (2) Eyes
(3) Segmentation (4) Bilateral symmetry

Scan or tap for the full solution

Q.151 When you hold your breath, which of the following gas changes in blood would first lead to the urge to breathe? [AIPMT 2015 (Cancelled)]
(1) Falling CO_2 concentration
(2) Rising CO_2 and falling O_2 concentration
(3) Falling O_2 concentration
(4) Rising CO_2 concentration

Scan or tap for the full solution

Q.152 Erythropoiesis starts in [AIPMT 2015 (Cancelled)]
(1) spleen (2) red bone marrow
(3) kidney (4) liver

Scan or tap for the full solution

Q.153 Which one of the following is correct? [AIPMT 2015 (Cancelled)]
(1) Lymph = Plasma + RBC + WBC
(2) Blood = plasma + RBC + WBC + Platelets
(3) Plasma = Blood − Lymphocytes
(4) Serum = Blood + Fibrinogen

Scan or tap for the full solution

Q.154 Blood pressure in the mammalian aorta is maximum during [AIPMT 2015 (Cancelled)]
(1) systole of the left ventricle
(2) diastole of the right atrium
(3) systole of the left atrium
(4) diastole of the right ventricle.

Scan or tap for the full solution

Q.155 Which of the following does not favour the formation of large quantities of dilute urine? [AIPMT 2015 (Cancelled)]
(1) Renin
(2) Atrial natriuretic factor
(3) Alcohol
(4) Caffeine

Scan or tap for the full solution

Q.156 Removal of proximal convoluted tubule from the nephron will result in [AIPMT 2015 (Cancelled)]
(1) no change in quality and quantity of urine
(2) no urine formation
(3) more diluted urine
(4) more concentrated urine.

Scan or tap for the full solution

Q.157 Sliding filament theory can be best explained as [AIPMT 2015 (Cancelled)]
(1) actin and myosin filaments do not shorten but rather slide past each other
(2) when myofilaments slide past each other, myosin filaments shorten while actin filaments do not shorten
(3) when myofilaments slide past each other actin filaments shorten while myosin filaments do not shorten
(4) actin and myosin filaments shorten and slide past each other.

Scan or tap for the full solution

Q.158 Glenoid cavity articulates [AIPMT 2015 (Cancelled)]
(1) clavicle with scapula
(2) humerus with scapula
(3) clavicle with acromion
(4) scapula with acromion.

Scan or tap for the full solution

Q.159 Which of the following regions of the brain is incorrectly paired with its function? [AIPMT 2015 (Cancelled)]

(1) Corpus callosum - communication between the left and right cerebral cortices
(2) Cerebrum - calculation and contemplation
(3) Medulla oblongata - homeostatic control
(4) Cerebellum - language comprehension

Scan or tap for the full solution

Q.160 A chemical signal that has both endocrine and neural roles is [AIPMT 2015 (Cancelled)]
(1) epinephrine (2) cortisol
(3) melatonin (4) calcitonin.

Scan or tap for the full solution

Q.161 Which of the following cells during gametogenesis is normally diploid? [AIPMT 2015 (Cancelled)]
(1) Spermatogonia (2) Secondary polar body
(3) Primary polar body (4) Spermatid

Scan or tap for the full solution

Q.162 Capacitation refers to changes in the [AIPMT 2015 (Cancelled)]
(1) ovum after fertilisation
(2) sperm after fertilisation
(3) sperm before fertilisation
(4) ovum before fertilisation

Scan or tap for the full solution

Q.163 Hysterectomy is surgical removal of [AIPMT 2015 (Cancelled)]
(1) vas deferens (2) mammary glands
(3) uterus (4) prostate gland

Scan or tap for the full solution

Q.164 Which of these is not an important component of initiation of parturition in humans? [AIPMT 2015 (Cancelled)]
(1) Release of oxytocin
(2) Release of prolactin
(3) Increase in estrogen and progesterone ratio
(4) Synthesis of prostaglandins

Scan or tap for the full solution

Q.165 Which of the following is not a sexually transmitted disease? [AIPMT 2015 (Cancelled)]
(1) Trichomoniasis
(2) Syphilis
(3) Encephalitis
(4) Acquired Immuno Deficiency Syndrome (AIDS)

Scan or tap for the full solution

Q.166 Which of the following viruses is not transferred through semen of an infected male? [AIPMT 2015 (Cancelled)]
(1) Ebola virus
(2) Chikungunya virus
(3) Hepatitis B virus
(4) Human immunodeficiency virus

Scan or tap for the full solution

Q.167 Match each disease with its correct type of vaccine [AIPMT 2015 (Cancelled)]

Column I		Column II	
A.	Tuberculosis	i.	Harmless virus
B.	Whooping cough	ii.	Inactivated toxin
C.	Diphtheria	iii.	Killed bacteria
D.	Polio	iv.	Harmless bacteria

(1) A - (i), B - (ii), C - (iv), D - (iii)
(2) A - (iv), B - (iii), C - (ii), D - (i)
(3) A - (ii), B - (i), C - (iii), D - (iv)
(4) A - (iii), B - (ii), C - (iv), D - (i)

Scan or tap for the full solution

Q.168 The active form of *Entamoeba histolytica* feeds upon [AIPMT 2015 (Cancelled)]
(1) food in intestine
(2) mucosa and submucosa of colon only
(3) blood only
(4) erythrocytes, mucosa and submucosa of colon

Scan or tap for the full solution

Q.169 HIV that causes AIDS, first starts destroying [AIPMT 2015 (Cancelled)]
(1) thrombocytes
(2) leucocytes
(3) helper T-lymphocytes
(4) B-lymphocytes

Scan or tap for the full solution

Q.170 In Bt cotton, the Bt toxin present in plant tissue as pro-toxin is converted into active toxin due to : [AIPMT 2015 (Cancelled)]

(1) action of gut micro-organisms
(2) presence of conversion factors in insect gut
(3) alkaline pH of the insect gut
(4) acidic pH of the insect gut

Scan or tap for the full solution

Q.171 Which body of the Government of India regulates GM research and safety of introducing GM organisms for public services ? [AIPMT 2015 (Cancelled)]

(1) Research Committee on Genetic Manipulation
(2) Genetic Engineering Approval Committee
(3) Indian Council of Agricultural Research
(4) Bio-safety committee

Scan or tap for the full solution

Q.172 The crops engineered for glyphosate are resistant/tolerant to : [AIPMT 2015 (Cancelled)]

(1) Bacteria (2) Herbicides
(3) Fungi (4) Insects

Scan or tap for the full solution

Q.173 The terga, sterna and pleura of cockroach body are joined by : [AIPMT 2015 (Cancelled)]

(1) Cartilage (2) Cementing glue
(3) Arthrodial membrane (4) Muscular tissue

Scan or tap for the full solution

Q.174 Gastric juice of infants contains [AIPMT 2015 (Cancelled)]

(1) pepsinogen, lipase, rennin
(2) amylase, rennin, pepsinogen
(3) maltase, pepsinogen, rennin
(4) nuclease, pepsinogen

Scan or tap for the full solution

Q.175 Which of the following statements is not correct? [AIPMT 2015 (Cancelled)]

(1) Oxyntic cells are present in the mucosa of stomach and secrete HCl.
(2) Acini are present in the pancreas and secrete carboxypeptidase.
(3) Brunner's glands are present in the submucosa of stomach and secrete pepsinogen.
(4) Goblet cells are present in the mucosa of intestine and secrete mucus.

Scan or tap for the full solution

Q.176 A gymnast is able to balance his body upside down even in the total darkness because of [AIPMT 2015 (Cancelled)]

(1) tectorial membrane (2) organ of corti
(3) cochlea (4) vestibular apparatus.

Scan or tap for the full solution

ANSWER KEY

Ques.	1	2	3	4	5	6	7
Ans.	**1**	**4**	**4**	**1**	**4**	**3**	**3**
Ques.	8	9	10	11	12	13	14
Ans.	**1**	**1**	**2**	**1**	**2**	**4**	**1**
Ques.	15	16	17	18	19	20	21
Ans.	**2**	**1**	**4**	**1**	**1**	**1**	**4**
Ques.	22	23	24	25	26	27	28
Ans.	**1**	**4**	**1**	**1**	**2**	**3**	**4**
Ques.	29	30	31	32	33	34	35
Ans.	**3**	**2**	**1**	**2**	**3**	**4**	**3**
Ques.	36	37	38	39	40	41	42
Ans.	**1**	**4**	**3**	**4**	**4**	**4**	**1**
Ques.	43	44	45	46	47	48	49
Ans.	**2**	**4**	**4**	**4**	**3**	**1**	**2**
Ques.	50	51	52	53	54	55	56
Ans.	**2**	**4**	**1**	**2**	**1**	**1**	**3**
Ques.	57	58	59	60	61	62	63
Ans.	**4**	**4**	**2**	**1**	**1**	**1**	**3**
Ques.	64	65	66	67	68	69	70
Ans.	**4**	**3**	**4**	**3**	**3**	**1**	**3**
Ques.	71	72	73	74	75	76	77
Ans.	**3**	**2**	**4**	**3**	**1**	**4**	**2**
Ques.	78	79	80	81	82	83	84
Ans.	**3**	**1**	**1**	**3**	**3**	**1**	**3**
Ques.	85	86	87	88	89	90	91
Ans.	**3**	**4**	**2**	**1**	**2**	**3**	**4**
Ques.	92	93	94	95	96	97	98
Ans.	**2**	**2**	**1**	**1**	**2**	**4**	**3**
Ques.	99	100	101	102	103	104	105
Ans.	**1**	**2**	**1**	**4**	**1**	**2**	**3**
Ques.	106	107	108	109	110	111	112
Ans.	**4**	**3**	**2**	**4**	**1**	**2**	**3**
Ques.	113	114	115	116	117	118	119
Ans.	**1**	**3**	**1**	**4**	**2**	**4**	**3**
Ques.	120	121	122	123	124	125	126
Ans.	**4**	**1**	**4**	**4**	**3**	**4**	**4**
Ques.	127	128	129	130	131	132	133
Ans.	**4**	**3**	**1**	**2**	**4**	**2**	**2**
Ques.	134	135	136	137	138	139	140
Ans.	**3**	**3**	**3**	**4**	**4**	**4**	**3**
Ques.	141	142	143	144	145	146	147
Ans.	**1**	**3**	**4**	**1**	**2**	**2**	**1**
Ques.	148	149	150	151	152	153	154
Ans.	**4**	**1**	**1**	**4**	**2**	**2**	**1**
Ques.	155	156	157	158	159	160	161
Ans.	**1**	**3**	**1**	**2**	**4**	**1**	**1**

Ques.	162	163	164	165	166	167	168
Ans.	**3**	**3**	**2**	**3**	**2**	**2**	**4**
Ques.	169	170	171	172	173	174	175
Ans.	**3**	**3**	**2**	**2**	**3**	**1**	**3**
Ques.	176						
Ans.	**4**						