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NEET 2016 (PHASE 1)

Question Paper · answer key at the end

Time: 3 Hours **Max. Marks:** 720 **Questions:** 180

General Instructions:

1. The duration of the paper is 3 hours. It has 180 questions: Physics 45, Chemistry 45, Biology 90.
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) — 180 questions

Q.1 If the velocity of a particle is $v = At + Bt^2$, where A and B are constants, then the distance travelled by it between 1 s and 2 s is [NEET 2016 (Phase 1)]

(1) $\frac{3}{2}A + \frac{7}{3}B$ (2) $\frac{A}{2} + \frac{B}{3}$

(3) $\frac{3}{2}A + 4B$ (4) 3A + 7B

Scan or tap for the full solution

Q.2 If the magnitude of sum of two vectors is equal to the magnitude of difference of the two vectors, the angle between these vectors is [NEET 2016 (Phase 1)]

(1) 45° (2) 180° (3) 0° (4) 90°

Scan or tap for the full solution

Q.3 A particle moves so that its position vector is given by $\vec{r} = \cos\omega t\,\hat{x} + \sin\omega t\,\hat{y}$, where ω is a constant. Which of the following is true? [NEET 2016 (Phase 1)]

(1) Velocity is perpendicular to $\vec{r}$ and acceleration is directed towards the origin.

(2) Velocity is perpendicular to $\vec{r}$ and acceleration is directed away from the origin.

(3) Velocity and acceleration both are perpendicular to $\vec{r}$

(4) Velocity and acceleration both are parallel to $\vec{r}$

Scan or tap for the full solution

Q.4 A car is negotiating a curved road of radius R. The road is banked at an angle θ. The coefficient of friction between the tyres of the car and the road is μ_s. The maximum safe velocity on this road is [NEET 2016 (Phase 1)]

(1) $\sqrt{\frac{g}{R}\frac{\mu_s + \tan\theta}{1 - \mu_s\tan\theta}}$ (2) $\sqrt{\frac{g}{R^2}\frac{\mu_s + \tan\theta}{1 - \mu_s\tan\theta}}$

(3) $\sqrt{gR^2\frac{\mu_s + \tan\theta}{1 - \mu_s\tan\theta}}$ (4) $\sqrt{gR\frac{\mu_s + \tan\theta}{1 - \mu_s\tan\theta}}$

Scan or tap for the full solution

Q.5 A particle of mass 10 g moves along a circle of radius 6.4 cm with a constant tangential acceleration. What is the magnitude of this acceleration if the kinetic energy of the particle becomes equal to 8×10^{-4} J by the end of the second revolution after the beginning of the motion? [NEET 2016 (Phase 1)]

(1) 0.18 m/s^2 (2) 0.2 m/s^2

(3) 0.1 m/s^2 (4) 0.15 m/s^2

Scan or tap for the full solution

Q.6 A body of mass 1 kg begins to move under the action of a time dependent force $\vec{F} = (2t\,\hat{i} + 3t^2\,\hat{j})$ N, where $\hat{i}$ and $\hat{j}$ are unit vectors along x and y axis. What power will be developed by the force at the time t? [NEET 2016 (Phase 1)]

(1) $(2t^3 + 3t^4)$ W (2) $(2t^3 + 3t^5)$ W

(3) $(2t^2 + 3t^3)$ W (4) $(2t^2 + 4t^4)$ W

Scan or tap for the full solution

Q.7 What is the minimum velocity with which a body of mass m must enter a vertical loop of radius R so that it can complete the loop? [NEET 2016 (Phase 1)]

(1) $\sqrt{3gR}$ (2) $\sqrt{5gR}$

(3) $\sqrt{gR}$ (4) $\sqrt{2gR}$

Scan or tap for the full solution

Q.8 A disc and a sphere of same radius but different masses roll off on two inclined planes of the same altitude and length. Which one of the two objects gets to the bottom of the plane first?

[NEET 2016 (Phase 1)]

(1) Both reach at the same time

(2) Depends on their masses

(3) Disc

(4) Sphere

Scan or tap for the full solution

Q.9 From a disc of radius R and mass M, a circular hole of diameter R, whose rim passes through the centre is cut. What is the moment of inertia of the remaining part of the disc about a perpendicular axis, passing through the centre?

[NEET 2016 (Phase 1)]

(1) $\frac{11MR^2}{32}$ (2) $\frac{9MR^2}{32}$

(3) $\frac{15MR^2}{32}$ (4) $\frac{13MR^2}{32}$

Scan or tap for the full solution

Q.10 A uniform circular disc of radius 50 cm at rest is free to turn about an axis which is perpendicular to its plane and passes through its centre. It is subjected to a torque which produces a constant angular acceleration of 2.0 rad s^{-2}. Its net acceleration in m s^{-2} at the end of 2.0 s is approximately [NEET 2016 (Phase 1)]

(1) 6.0 (2) 3.0 (3) 8.0 (4) 7.0

Scan or tap for the full solution

Q.11 At what height from the surface of earth the gravitation potential and the value of g are -5.4×10^7 J kg^{-1} and 6.0 m s^{-2} respectively? Take the radius of earth as 6400 km.

[NEET 2016 (Phase 1)]

(1) 1400 km (2) 2000 km

(3) 2600 km (4) 1600 km

Scan or tap for the full solution

Q.12 The ratio of escape velocity at earth (v_e) to the escape velocity at a planet (v_p) whose radius and mean density are twice as that of earth is

[NEET 2016 (Phase 1)]

(1) 1 : 4 (2) $1 : \sqrt{2}$

(3) 1 : 2 (4) $1 : 2\sqrt{2}$

Scan or tap for the full solution

Q.13 Coefficient of linear expansion of brass and steel rods are α_1 and α_2. Lengths of brass and steel rods are l_1 and l_2 respectively. If $(l_2 - l_1)$ is maintained same at all temperatures, which one of the following relations holds good?

[NEET 2016 (Phase 1)]

(1) $\alpha_1^2 l_2 = \alpha_2^2 l_1$ (2) $\alpha_1 l_1 = \alpha_2 l_2$

(3) $\alpha_1 l_2 = \alpha_2 l_1$ (4) $\alpha_1 l_2^2 = \alpha_2 l_1^2$

Scan or tap for the full solution

Q.14 A piece of ice falls from a height h so that it melts completely. Only one-quarter of the heat produced is absorbed by the ice and all energy of ice gets converted into heat during its fall. The value of h [Latent heat of ice is 3.4×10^5 J/kg and g = 10 N/kg] [NEET 2016 (Phase 1)]

(1) 136 km (2) 68 km (3) 34 km (4) 544 km

Scan or tap for the full solution

Q.15 A black body is at a temperature of 5760 K. The energy of radiation emitted by the body at wavelength 250 nm is U_1, at wavelength 500 nm is U_2 and that at 1000 nm is U_3. Wien's constant, $b = 2.88 \times 10^6$ nm K. Which of the following is correct? [NEET 2016 (Phase 1)]

(1) $U_1 > U_2$ (2) $U_2 > U_1$

(3) $U_1 = 0$ (4) $U_3 = 0$

Scan or tap for the full solution

Q.16 Two non-mixing liquids of densities ρ and nρ (n > 1) are put in a container. The height of each liquid is h. A solid cylinder of length L and density d is put in this container. The cylinder floats with its axis vertical and length pL (p < 1) in the denser liquid. The density d is equal to

[NEET 2016 (Phase 1)]

(1) $\{2 + (n - 1)p\}\rho$ (2) $\{1 + (n - 1)p\}\rho$

(3) $\{1 + (n + 1)p\}\rho$ (4) $\{2 + (n + 1)p\}\rho$

Scan or tap for the full solution

Q.17 A gas is compressed isothermally to half its initial volume. The same gas is compressed separately through an adiabatic process until its volume is again reduced to half. Then [NEET 2016 (Phase 1)]

(1) Compressing the gas isothermally or adiabatically will require the same amount of work.

(2) Which of the case (whether compression through isothermal or through adiabatic process) requires more work will depend upon the atomicity of the gas.

(3) Compressing the gas isothermally will require more work to be done.

(4) Compressing the gas through adiabatic process will require more work to be done.

Scan or tap for the full solution

Q.18 The molecules of a given mass of a gas have r.m.s. velocity of 200 m s^{-1} at 27°C and 1.0×10^5 N m^{-2} pressure. When the temperature and pressure of the gas are respectively, 127°C and 0.05×10^5 N m^{-2}, the r.m.s. velocity of its molecules in m s^{-1} is [NEET 2016 (Phase 1)]

(1) $\frac{100\sqrt{2}}{3}$ (2) $\frac{100}{3}$

(3) $100\sqrt{2}$ (4) $\frac{400}{\sqrt{3}}$

Scan or tap for the full solution

Q.19 A refrigerator works between 4°C and 30°C. It is required to remove 600 calories of heat every second in order to keep the temperature of the refrigerated space constant. The power required is (Take 1 cal = 4.2 Joules) [NEET 2016 (Phase 1)]

(1) 236.5 W (2) 2365 W

(3) 2.365 W (4) 23.65 W

Scan or tap for the full solution

Q.20 An air column, closed at one end open at the other, resonates with a tuning fork when the smallest length of the column is 50 cm. The next larger length of the column resonating with the same tuning fork is [NEET 2016 (Phase 1)]

(1) 150 cm (2) 200 cm

(3) 66.7 cm (4) 100 cm

Scan or tap for the full solution

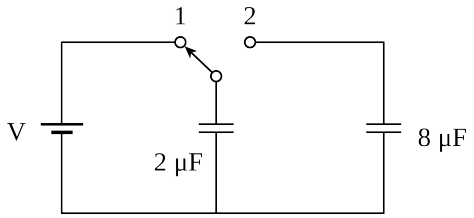
Q.21 A uniform rope of length L and mass m_1 hangs vertically from a rigid support. A block of mass m_2 is attached to the free end of the rope. A transverse pulse of wavelength λ_1 is produced at the lower end of the rope. The wavelength of the pulse when it reaches the top of the rope is λ_2. The ratio λ_2/λ_1 is [NEET 2016 (Phase 1)]

(1) $\sqrt{\frac{m_2}{m_1}}$ (2) $\sqrt{\frac{m_1+m_2}{m_1}}$

(3) $\sqrt{\frac{m_1}{m_2}}$ (4) $\sqrt{\frac{m_1+m_2}{m_2}}$

Scan or tap for the full solution

Q.22 A capacitor of 2 μF is charged as shown in the diagram. When the switch S is turned to position 2, the percentage of its stored energy dissipated is [NEET 2016 (Phase 1)]



(1) 75% (2) 80% (3) 0% (4) 20%

Scan or tap for the full solution

Q.23 Two identical charged spheres suspended from a common point by two massless strings of lengths l, are initially at a distance d ($d \ll l$) apart because of their mutual repulsion. The charges begin to leak from both the spheres at a constant rate. As a result, the spheres approach each other with a velocity v. Then v varies as a function of the distance x between the spheres, as [NEET 2016 (Phase 1)]

(1) $v \propto x^{-1/2}$ (2) $v \propto x^{-1}$

(3) $v \propto x^{1/2}$ (4) $v \propto x$

Scan or tap for the full solution

Q.24 A potentiometer wire is 100 cm long and a constant potential difference is maintained across it. Two cells are connected in series first to support one another and then in opposite direction. The balance points are obtained at 50 cm and 10 cm from the positive end of the wire in the two cases. The ratio of emf's is [NEET 2016 (Phase 1)]

(1) 3 : 4 (2) 3 : 2 (3) 5 : 1 (4) 5 : 4

Scan or tap for the full solution

Q.25 The charge flowing through a resistance R varies with time t as $Q = at - bt^2$, where a and b are positive constants. The total heat produced in R is [NEET 2016 (Phase 1)]

(1) $\frac{a^3R}{2b}$ (2) $\frac{a^3R}{b}$ (3) $\frac{a^3R}{6b}$ (4) $\frac{a^3R}{3b}$

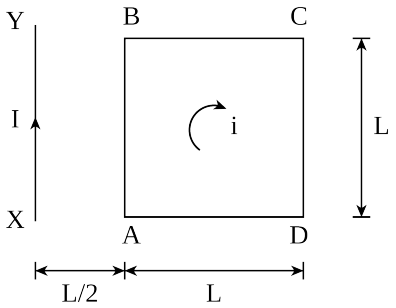
Scan or tap for the full solution

Q.26 A long straight wire of radius a carries a steady current I. The current is uniformly distributed over its cross-section. The ratio of the magnetic fields B and B', at radial distance $\frac{a}{2}$ and 2a respectively, from the axis of the wire is [NEET 2016 (Phase 1)]

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

Scan or tap for the full solution

Q.27 A square loop ABCD carrying a current i, is placed near and coplanar with a long straight conductor XY carrying a current I, the net force on the loop will be [NEET 2016 (Phase 1)]



(1) $\frac{2\mu_0 IiL}{3\pi}$ (2) $\frac{\mu_0 IiL}{2\pi}$

(3) $\frac{2\mu_0 Ii}{3\pi}$ (4) $\frac{\mu_0 Ii}{2\pi}$

Scan or tap for the full solution

Q.28 The magnetic susceptibility is negative for [NEET 2016 (Phase 1)]

(1) ferromagnetic material only

(2) paramagnetic and ferromagnetic materials

(3) diamagnetic material only

(4) paramagnetic material only

Scan or tap for the full solution

Q.29 An inductor 20 mH, a capacitor 50 μF and a resistor 40 Ω are connected in series across a source of emf $V = 10\sin 340t$. The power loss in A.C. circuit is [NEET 2016 (Phase 1)]

(1) 0.76 W (2) 0.89 W (3) 0.46 W (4) 0.67 W

Scan or tap for the full solution

Q.30 A small signal voltage $V(t) = V_0 \sin \omega t$ is applied across an ideal capacitor C [NEET 2016 (Phase 1)]

(1) Current I(t) is in phase with voltage V(t).

(2) Current I(t) leads voltage V(t) by 180°

(3) Current I(t) lags voltage V(t) by 90°.

(4) Over a full cycle the capacitor C does not consume any energy from the voltage source.

Scan or tap for the full solution

Q.31 A long solenoid has 1000 turns. When a current of 4 A flows through it, the magnetic flux linked with each turn of the solenoid is 4×10^{-3} Wb. The self-inductance of the solenoid is [NEET 2016 (Phase 1)]

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

Scan or tap for the full solution

Q.32 Out of the following options which one can be used to produce a propagating electromagnetic wave? [NEET 2016 (Phase 1)]

(1) A chargeless particle

(2) An accelerating charge

(3) A charge moving at constant velocity

(4) A stationary charge

Scan or tap for the full solution

Q.33 Match the corresponding entries of **column 1** with **column 2**. [Where m is the magnification produced by the mirror] [NEET 2016 (Phase 1)]

Column 1		Column 2	
a.	m = −2	p.	Convex mirror
b.	$m = -\frac{1}{2}$	q.	Concave mirror
c.	m = +2	r.	Real image
d.	$m = +\frac{1}{2}$	s.	Virtual image

(1) (a)-(p) and (s); (b)-(q) and (r); (c)-(q) and (s); (d)-(q) and (r)

(2) (a)-(r) and (s); (b)-(q) and (s); (c)-(q) and (r); (d)-(p) and (s)

(3) (a)-(q) and (r); (b)-(q) and (r); (c)-(q) and (s); (d)-(p) and (s)

(4) (a)-(p) and (r); (b)-(p) and (s); (c)-(p) and (q); (d)-(r) and (s)

Scan or tap for the full solution

Q.34 In a diffraction pattern due to a single slit of width a, the first minimum is observed at an angle 30° when light of wavelength 5000 Å is incident on the slit. The first secondary maximum is observed at an angle of [NEET 2016 (Phase 1)]

(1) $\sin^{-1}\left(\frac{1}{2}\right)$ (2) $\sin^{-1}\left(\frac{3}{4}\right)$

(3) $\sin^{-1}\left(\frac{1}{4}\right)$ (4) $\sin^{-1}\left(\frac{2}{3}\right)$

Scan or tap for the full solution

Q.35 The intensity at the maximum in a Young's double slit experiment is I_0. Distance between two slits is $d = 5\lambda$, where λ is the wavelength of light used in the experiment. What will be the intensity in front of one of the slits on the screen placed at a distance $D = 10d$? [NEET 2016 (Phase 1)]

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

Scan or tap for the full solution

Q.36 An astronomical telescope has objective and eyepiece of focal lengths 40 cm and 4 cm respectively. To view an object 200 cm away from the objective, the lenses must be separated by a distance [NEET 2016 (Phase 1)]

(1) 50.0 cm (2) 54.0 cm
(3) 37.3 cm (4) 46.0 cm

Scan or tap for the full solution

Q.37 The angle of incidence for a ray of light at a refracting surface of a prism is 45°. The angle of prism is 60°. If the ray suffers minimum deviation through the prism, the angle of minimum deviation and refractive index of the material of the prism respectively, are [NEET 2016 (Phase 1)]

(1) 45°; $\sqrt{2}$ (2) 30°; $\frac{1}{\sqrt{2}}$
(3) 45°; $\frac{1}{\sqrt{2}}$ (4) 30°; $\sqrt{2}$

Scan or tap for the full solution

Q.38 An electron of mass m and a photon have same energy E. The ratio of de-Broglie wavelengths associated with them is [NEET 2016 (Phase 1)]

(1) $c(2mE)^{\frac{1}{2}}$ (2) $\frac{1}{c}\left(\frac{2m}{E}\right)^{\frac{1}{2}}$
(3) $\frac{1}{c}\left(\frac{E}{2m}\right)^{\frac{1}{2}}$ (4) $\left(\frac{E}{2m}\right)^{\frac{1}{2}}$

Scan or tap for the full solution

Q.39 When a metallic surface is illuminated with radiation of wavelength λ, the stopping potential is V. If the same surface is illuminated with radiation of wavelength 2λ, the stopping potential is $\frac{V}{4}$. The threshold wavelength for the metallic surface is [NEET 2016 (Phase 1)]

(1) $\frac{5}{2}\lambda$ (2) 3λ (3) 4λ (4) 5λ

Scan or tap for the full solution

Q.40 Given the value of Rydberg constant is $10^7\ m^{-1}$, the wave number of the last line of the Balmer series in hydrogen spectrum will be [NEET 2016 (Phase 1)]

(1) $0.25 \times 10^7\ m^{-1}$ (2) $2.5 \times 10^7\ m^{-1}$
(3) $0.025 \times 10^4\ m^{-1}$ (4) $0.5 \times 10^7\ m^{-1}$

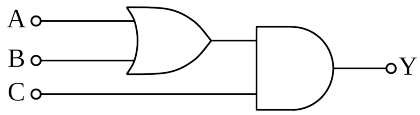
Scan or tap for the full solution

Q.41 When an α-particle of mass m moving with velocity v bombards on a heavy nucleus of charge Ze, its distance of closest approach from the nucleus depends on m as [NEET 2016 (Phase 1)]

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

Scan or tap for the full solution

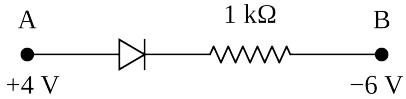
Q.42 To get output 1 for the following circuit, the correct choice for the input is [NEET 2016 (Phase 1)]



(1) A = 1, B = 1, C = 0 (2) A = 1, B = 0, C = 1
(3) A = 0, B = 1, C = 0 (4) A = 1, B = 0, C = 0

Scan or tap for the full solution

Q.43 Consider the junction diode as ideal. The value of current flowing through AB is [NEET 2016 (Phase 1)]



(1) 10^{-1} A (2) 10^{-3} A (3) 0 A (4) 10^{-2} A

Scan or tap for the full solution

Q.44 A siren emitting a sound of frequency 800 Hz moves away from an observer towards a cliff at a speed of $15\ m\ s^{-1}$. Then, the frequency of sound that the observer hears in the echo reflected from the cliff is
(Take velocity of sound in air = $330\ m\ s^{-1}$)
[NEET 2016 (Phase 1)]

(1) 838 Hz (2) 885 Hz (3) 765 Hz (4) 800 Hz

Scan or tap for the full solution

Q.45 A npn transistor is connected in common emitter configuration in a given amplifier. A load resistance of 800 Ω is connected in the collector circuit and the voltage drop across it is 0.8 V. If the current amplification factor is 0.96 and the input resistance of the circuit is 192 Ω, the voltage gain and the power gain of the amplifier will respectively be [NEET 2016 (Phase 1)]

(1) 4, 4 (2) 4, 3.69 (3) 4, 3.84 (4) 3.69, 3.84

Scan or tap for the full solution

Q.46 Two electrons occupying the same orbital are distinguished by [NEET 2016 (Phase 1)]

(1) azimuthal quantum number

(2) spin quantum number

(3) principal quantum number

(4) magnetic quantum number

Scan or tap for the full solution

Q.47 In which of the following options the order of arrangement does not agree with the variation of property indicated against it ? [NEET 2016 (Phase 1)]

(1) I < Br < Cl < F (increasing electron gain enthalpy)

(2) Li < Na < K < Rb (increasing metallic radius)

(3) $Al^{3+} < Mg^{2+} < Na^{+} < F^{-}$ (increasing ionic size)

(4) B < C < N < O (increasing first ionisation enthalpy)

Scan or tap for the full solution

Q.48 Consider the molecules CH_4, NH_3 and H_2O. Which of the given statements is false? [NEET 2016 (Phase 1)]

(1) The H − O − H bond angle in H_2O is smaller than the H − N − H bond angle in NH_3.

(2) The H − C − H bond angle in CH_4 is larger than the H − N − H bond angle in NH_3.

(3) The H − C − H bond angle in CH_4, the H − N − H bond angle in NH_3, and the H − O − H bond angle in H_2O are all greater than 90°.

(4) The H − O − H bond angle in H_2O is larger than the H − C − H bond angle in CH_4.

Scan or tap for the full solution

Q.49 Predict the correct order among the following : [NEET 2016 (Phase 1)]

(1) bond pair - bond pair > lone pair - bond pair > lone pair - lone pair

(2) lone pair - bond pair > bond pair - bond pair > lone pair - lone pair

(3) lone pair - lone pair > lone pair - bond pair > bond pair - bond pair

(4) lone pair - lone pair > bond pair - bond pair > lone pair - bond pair

Scan or tap for the full solution

Q.50 The correct thermodynamic conditions for the spontaneous reaction at all temperatures is [NEET 2016 (Phase 1)]

(1) $\Delta H < 0$ and $\Delta S > 0$ (2) $\Delta H < 0$ and $\Delta S < 0$

(3) $\Delta H < 0$ and $\Delta S = 0$ (4) $\Delta H > 0$ and $\Delta S < 0$

Scan or tap for the full solution

Q.51 Consider the following liquid-vapour equilibrium.

Liquid $\rightleftharpoons$ Vapour

Which of the following relations is correct ? [NEET 2016 (Phase 1)]

(1) $\frac{d\ln P}{dT^2} = \frac{-\Delta H_v}{T^2}$ (2) $\frac{d\ln P}{dT} = \frac{\Delta H_v}{RT^2}$

(3) $\frac{d\ln G}{dT^2} = \frac{\Delta H_v}{RT^2}$ (4) $\frac{d\ln P}{dT} = \frac{-\Delta H_v}{RT}$

Scan or tap for the full solution

Q.52 MY and NY_3, two nearly insoluble salts, have the same K_{sp} values of 6.2×10^{-13} at room temperature. Which statement would be true in regard to MY and NY_3? [NEET 2016 (Phase 1)]

(1) The salts MY and NY_3 are more soluble in 0.5 M KY than in pure water.

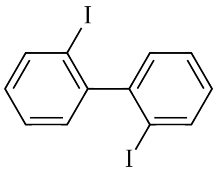
(2) The addition of the salt of KY to solution of MY and NY_3 will have no effect on their solubilities.

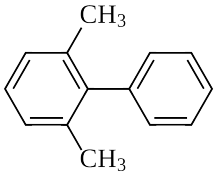
(3) The molar solubilities of MY and NY_3 in water are identical.

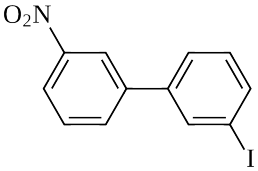
(4) The molar solubility of MY in water is less than that of NY_3.

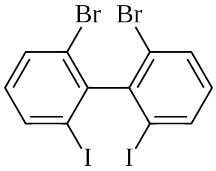
Scan or tap for the full solution

Q.53 Which of the following biphenyls is optically active ? [NEET 2016 (Phase 1)]

(1) 

(2) 

(3) 

(4) 

Scan or tap for the full solution

Q.54 For the following reactions :

(A)

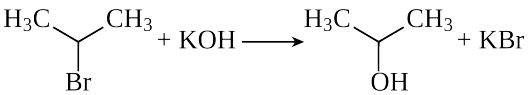
$CH_3CH_2CH_2Br + KOH \longrightarrow CH_3CH{=}CH_2 + KBr + H_2O$

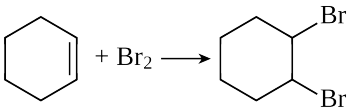
(B)

(C)

Which of the following statements is correct?

[NEET 2016 (Phase 1)]





(1) (A) is elimination, (B) and (C) are substitution reactions.

(2) (A) is substitution, (B) and (C) are addition reactions.

(3) (A) and (B) are elimination reactions and (C) is addition reaction.

(4) (A) is elimination, (B) is substitution and (C) is addition reaction.

Scan or tap for the full solution

Q.55 The correct statement regarding the comparison of staggered and eclipsed conformations of ethane, is

[NEET 2016 (Phase 1)]

(1) the eclipsed conformation of ethane is more stable than staggered conformation even though the eclipsed conformation has torsional strain

(2) the staggered conformation of ethane is more stable than eclipsed conformation, because staggered conformation has no torsional strain

(3) the staggered conformation of ethane is less stable than eclipsed conformation, because staggered conformation has torsional strain

(4) the eclipsed conformation of ethane is more stable than staggered conformation, because eclipsed conformation has no torsional strain.

Scan or tap for the full solution

Q.56 Consider the nitration of benzene using mixed conc. H_2SO_4 and HNO_3. If a large amount of $KHSO_4$ is added to the mixture, the rate of nitration will be

[NEET 2016 (Phase 1)]

(1) unchanged (2) doubled

(3) faster (4) slower

Scan or tap for the full solution

Q.57 The pair of electrons in the given carbanion, $CH_3C{\equiv}C^-$, is present in which of the following orbitals?

[NEET 2016 (Phase 1)]

(1) sp^2 (2) sp (3) 2p (4) sp^3

Scan or tap for the full solution

Q.58 In the reaction

$$H{-}C{\equiv}CH \xrightarrow[\text{(ii) } CH_3CH_2Br]{\text{(i) } NaNH_2/\text{liq. } NH_3} X \xrightarrow[\text{(ii) } CH_3CH_2Br]{\text{(i) } NaNH_2/\text{liq. } NH_3} Y,$$

X and Y are

[NEET 2016 (Phase 1)]

(1) X = 2-Butyne, Y = 2-Hexyne

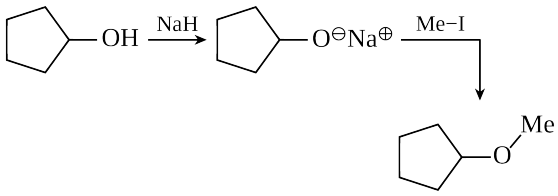
(2) X = 1-Butyne, Y = 2-Hexyne

(3) X = 1-Butyne, Y = 3-Hexyne

(4) X = 2-Butyne, Y = 3-Hexyne

Scan or tap for the full solution

Q.59 The reaction



can be classified as

[NEET 2016 (Phase 1)]

(1) dehydration reaction

(2) Williamson alcohol synthesis reaction

(3) Williamson ether synthesis reaction

(4) alcohol formation reaction.

Scan or tap for the full solution

Q.60 Which of the following reagents would distinguish cis-cyclopentane-1,2-diol from the trans-isomer? [NEET 2016 (Phase 1)]

(1) MnO_2
(2) Aluminium isopropoxide
(3) Acetone
(4) Ozone

Scan or tap for the full solution

Q.61 The correct statement regarding a carbonyl compound with a hydrogen atom on its alpha-carbon, is [NEET 2016 (Phase 1)]

(1) a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as carbonylation
(2) a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as keto-enol tautomerism
(3) a carbonyl compound with a hydrogen atom on its alpha-carbon never equilibrates with its corresponding enol
(4) a carbonyl compound with a hydrogen atom on its alpha-carbon rapidly equilibrates with its corresponding enol and this process is known as aldehyde-ketone equilibration.

Scan or tap for the full solution

Q.62 The correct statement regarding the basicity of arylamines is [NEET 2016 (Phase 1)]

(1) arylamines are generally more basic than alkylamines because of aryl group
(2) arylamines are generally more basic than alkylamines, because the nitrogen atom in arylamines is sp-hybridised
(3) arylamines are generally less basic than alkylamines because the nitrogen lone-pair electrons are delocalised by interaction with the aromatic ring π-electron system
(4) arylamines are generally more basic than alkylamines because the nitrogen lone-pair electrons are not delocalised by interaction with the aromatic ring π-electron system.

Scan or tap for the full solution

Q.63 The product formed by the reaction of an aldehyde with a primary amine is [NEET 2016 (Phase 1)]

(1) carboxylic acid (2) aromatic acid
(3) Schiff's base (4) ketone

Scan or tap for the full solution

Q.64 The correct statement regarding RNA and DNA, respectively is [NEET 2016 (Phase 1)]

(1) The sugar component in RNA is arabinose and the sugar component in DNA is ribose
(2) The sugar component in RNA is 2'-deoxyribose and the sugar component in DNA is arabinose
(3) The sugar component in RNA is arabinose and the sugar component in DNA is 2'-deoxyribose
(4) The sugar component in RNA is ribose and the sugar component in DNA is 2'-deoxyribose.

Scan or tap for the full solution

Q.65 In a protein molecule various amino acids are linked together by [NEET 2016 (Phase 1)]

(1) peptide bond (2) dative bond
(3) α-glycosidic bond (4) β-glycosidic bond.

Scan or tap for the full solution

Q.66 Which one given below is a non-reducing sugar? [NEET 2016 (Phase 1)]

(1) Glucose (2) Sucrose
(3) Maltose (4) Lactose

Scan or tap for the full solution

Q.67 Which of the following statements about the composition of the vapour over an ideal 1 : 1 molar mixture of benzene and toluene is correct? Assume that the temperature is constant at 25°C. (Given, vapour pressure data at 25°C, benzene = 12.8 kPa, toluene = 3.85 kPa) [NEET 2016 (Phase 1)]

(1) The vapour will contain equal amounts of benzene and toluene.
(2) Not enough information is given to make a prediction.
(3) The vapour will contain a higher percentage of benzene.
(4) The vapour will contain a higher percentage of toluene

Scan or tap for the full solution

Q.68 At 100°C the vapour pressure of a solution of 6.5 g of a solute in 100 g water is 732 mm. If K_b = 0.52, the boiling point of this solution will be [NEET 2016 (Phase 1)]

(1) 102°C (2) 103°C (3) 101°C (4) 100°C

Scan or tap for the full solution

Q.69 The pressure of H_2 required to make the potential of H_2-electrode zero in pure water at 298 K is [NEET 2016 (Phase 1)]

(1) 10^{-10} atm (2) 10^{-4} atm
(3) 10^{-14} atm (4) 10^{-12} atm

Scan or tap for the full solution

Q.70 The rate of first-order reaction is 0.04 mol L^{-1} s^{-1} at 10 seconds and 0.03 mol L^{-1} s^{-1} at 20 seconds after initiation of the reaction. The half-life period of the reaction is [NEET 2016 (Phase 1)]

(1) 44.1 s (2) 54.1 s (3) 24.1 s (4) 34.1 s

Scan or tap for the full solution

Q.71 The addition of a catalyst during a chemical reaction alters which of the following quantities? [NEET 2016 (Phase 1)]

(1) Enthalpy (2) Activation energy
(3) Entropy (4) Internal energy

Scan or tap for the full solution

Q.72 Match the compounds given in **column I** with the hybridisation and shape given in **column II** and mark the correct option [NEET 2016 (Phase 1)]

Column I		Column II	
a.	XeF_6	i.	distorted octahedral
b.	XeO_3	ii.	square planar
c.	$XeOF_4$	iii.	pyramidal
d.	XeF_4	iv.	square pyramidal

(1) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
(2) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
(3) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)
(4) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)

Scan or tap for the full solution

Q.73 Which is the correct statement for the given acids? [NEET 2016 (Phase 1)]

(1) Phosphinic acid is a monoprotic acid while phosphonic acid is a diprotic acid.
(2) Phosphinic acid is a diprotic acid while phosphonic acid is a monoprotic acid.
(3) Both are diprotic acids.
(4) Both are triprotic acids.

Scan or tap for the full solution

Q.74 Which one of the following orders is correct for the bond dissociation enthalpy of halogen molecules? [NEET 2016 (Phase 1)]

(1) $Br_2 > I_2 > F_2 > Cl_2$ (2) $F_2 > Cl_2 > Br_2 > I_2$
(3) $I_2 > Br_2 > Cl_2 > F_2$ (4) $Cl_2 > Br_2 > F_2 > I_2$

Scan or tap for the full solution

Q.75 When copper is heated with conc. HNO_3 it produces [NEET 2016 (Phase 1)]

(1) $Cu(NO_3)_2$, NO and NO_2
(2) $Cu(NO_3)_2$ and N_2O
(3) $Cu(NO_3)_2$ and NO_2
(4) $Cu(NO_3)_2$ and NO

Scan or tap for the full solution

Q.76 Among the following the correct order of acidity is [NEET 2016 (Phase 1)]

(1) $HClO_2 < HClO < HClO_3 < HClO_4$
(2) $HClO_4 < HClO_2 < HClO < HClO_3$
(3) $HClO_3 < HClO_4 < HClO_2 < HClO$
(4) $HClO < HClO_2 < HClO_3 < HClO_4$

Scan or tap for the full solution

Q.77 Which one of the following statements is correct when SO_2 is passed through acidified $K_2Cr_2O_7$ solution? [NEET 2016 (Phase 1)]

(1) SO_2 is reduced.
(2) Green $Cr_2(SO_4)_3$ is formed.
(3) The solution turns blue.
(4) The solution is decolourised.

Scan or tap for the full solution

Q.78 The electronic configuration of Eu (Atomic No. 63), Gd (Atomic No. 64) and Tb (Atomic No. 65) are [NEET 2016 (Phase 1)]

(1) $[Xe]4f^6\ 5d^1\ 6s^2$, $[Xe]4f^7\ 5d^1\ 6s^2$ and $[Xe]4f^8\ 5d^1\ 6s^2$
(2) $[Xe]4f^7\ 6s^2$, $[Xe]4f^7\ 5d^1\ 6s^2$ and $[Xe]4f^9\ 6s^2$
(3) $[Xe]4f^7\ 6s^2$, $[Xe]4f^8\ 6s^2$ and $[Xe]4f^8\ 5d^1\ 6s^2$
(4) $[Xe]4f^6\ 5d^1\ 6s^2$, $[Xe]4f^7\ 5d^1\ 6s^2$ and $[Xe]4f^9\ 6s^2$

Scan or tap for the full solution

Q.79 Which of the following has longest C − O bond length? (Free C − O bond length in CO is 1.128 Å.) [NEET 2016 (Phase 1)]

(1) $[Fe(CO)_4]^{2-}$ (2) $[Mn(CO)_6]^+$
(3) $Ni(CO)_4$ (4) $[Co(CO)_4]^-$

Scan or tap for the full solution

Q.80 Equal moles of hydrogen and oxygen gases are placed in a container with a pin-hole through which both can escape. What fraction of the oxygen escapes in the time required for one-half of the hydrogen to escape? [NEET 2016 (Phase 1)]

(1) 3/8 (2) 1/2 (3) 1/8 (4) 1/4

Scan or tap for the full solution

Q.81 Which of the following statements about hydrogen is incorrect? [NEET 2016 (Phase 1)]

(1) Hydronium ion, H_3O^+ exists freely in solution.

(2) Dihydrogen does not act as a reducing agent.

(3) Hydrogen has three isotopes of which tritium is the most common.

(4) Hydrogen never acts as cation in ionic salts.

Scan or tap for the full solution

Q.82 Which of the following statements is false? [NEET 2016 (Phase 1)]

(1) Ca^{2+} ions are not important in maintaining the regular beating of the heart.

(2) Mg^{2+} ions are important in the green parts of the plants.

(3) Mg^{2+} ions form a complex with ATP.

(4) Ca^{2+} ions are important in blood clotting.

Scan or tap for the full solution

Q.83 The product obtained as a result of a reaction of nitrogen with CaC_2 is [NEET 2016 (Phase 1)]

(1) $CaCN_2$ (2) Ca_2CN

(3) $Ca(CN)_2$ (4) CaCN

Scan or tap for the full solution

Q.84 Natural rubber has [NEET 2016 (Phase 1)]

(1) alternate cis- and trans-configuration

(2) random cis- and trans-configuration

(3) all cis-configuration

(4) all trans-configuration.

Scan or tap for the full solution

Q.85 Lithium has a bcc structure. Its density is 530 kg m^{-3} and its atomic mass is 6.94 g mol^{-1}. Calculate the edge length of a unit cell of lithium metal. ($N_A = 6.02 \times 10^{23}$ mol^{-1}) [NEET 2016 (Phase 1)]

(1) 527 pm (2) 264 pm (3) 154 pm (4) 352 pm

Scan or tap for the full solution

Q.86 The ionic radii of A^+ and B^- ions are 0.98×10^{-10} m and 1.81×10^{-10} m. The coordination number of each ion in AB is [NEET 2016 (Phase 1)]

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

Scan or tap for the full solution

Q.87 Fog is a colloidal solution of [NEET 2016 (Phase 1)]

(1) solid in gas (2) gas in gas

(3) liquid in gas (4) gas in liquid.

Scan or tap for the full solution

Q.88 Which one of the following characteristics is associated with adsorption? [NEET 2016 (Phase 1)]

(1) ΔG and ΔH are negative but ΔS is positive.

(2) ΔG and ΔS are negative but ΔH is positive.

(3) ΔG is negative but ΔH and ΔS are positive.

(4) ΔG, ΔH and ΔS all are negative.

Scan or tap for the full solution

Q.89 Match items of **Column I** with the items of **Column II** and assign the correct code : [NEET 2016 (Phase 1)]

Column I		Column II	
a.	Cyanide process	i.	Ultrapure Ge
b.	Froth floatation process	ii.	Dressing of ZnS
c.	Electrolytic reduction	iii.	Extraction of Al
d.	Zone refining	iv.	Extraction of Au
		v.	Purification of Ni

(1) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

(2) (a)-(iii), (b)-(iv), (c)-(v), (d)-(i)

(3) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

(4) (a)-(ii), (b)-(iii), (c)-(i), (d)-(v)

Scan or tap for the full solution

Q.90 Which of the following is an analgesic? [NEET 2016 (Phase 1)]

(1) streptomycin (2) chloromycetin

(3) Novalgin (4) Penicillin

Scan or tap for the full solution

Q.91 Nomenclature is governed by certain universal rules. Which one of the following is contrary to the rules of nomenclature? [NEET 2016 (Phase 1)]

(1) The names are written in Latin and are italicised.
(2) When written by hand the names are to be underlined.
(3) Biological names can be written in any language.
(4) The first word in a biological name represents the genus name and the second is a specific epithet.

Scan or tap for the full solution

Q.92 The primitive prokaryotes responsible for the production of biogas from the dung of ruminant animals, include the [NEET 2016 (Phase 1)]
(1) methanogens (2) eubacteria
(3) halophiles (4) thermoacidophiles.

Scan or tap for the full solution

Q.93 Which one of the following statements is wrong? [NEET 2016 (Phase 1)]
(1) Eubacteria are also called false bacteria.
(2) Phycomycetes are also called algal fungi.
(3) Cyanobacteria are also called blue-green algae.
(4) Golden algae are also called desmids.

Scan or tap for the full solution

Q.94 Which of the following statements is wrong for viroids? [NEET 2016 (Phase 1)]
(1) They cause infections.
(2) Their RNA is of high molecular weight.
(3) They lack a protein coat.
(4) They are smaller than viruses.

Scan or tap for the full solution

Q.95 One of the major components of cell wall of most fungi is [NEET 2016 (Phase 1)]
(1) cellulose (2) hemicellulose
(3) chitin (4) peptidoglycan.

Scan or tap for the full solution

Q.96 Chrysophytes, Euglenoids, Dinoflagellates and Slime moulds are included in the Kingdom [NEET 2016 (Phase 1)]
(1) Fungi (2) Animalia
(3) Monera (4) Protista.

Scan or tap for the full solution

Q.97 Select the correct statement [NEET 2016 (Phase 1)]
(1) *Sequoia* is one of the tallest trees.
(2) The leaves of gymnosperms are not well adapted to extremes of climate.
(3) Gymnosperms are both homosporous and heterosporous.
(4) *Salvinia*, *Ginkgo* and *Pinus* all are gymnosperms.

Scan or tap for the full solution

Q.98 In bryophytes and pteridophytes, transport of male gametes requires [NEET 2016 (Phase 1)]
(1) birds (2) water (3) wind (4) insects.

Scan or tap for the full solution

Q.99 Which of the following is not a stem modification? [NEET 2016 (Phase 1)]
(1) Tendrils of cucumber
(2) Flattened structures of *Opuntia*
(3) Pitcher of *Nepenthes*
(4) Thorns of *Citrus*

Scan or tap for the full solution

Q.100 Stems modified into flat green organs performing the functions of leaves are known as [NEET 2016 (Phase 1)]
(1) phylloclades (2) scales
(3) cladodes (4) phyllodes.

Scan or tap for the full solution

Q.101 Cotyledon of maize grain is called [NEET 2016 (Phase 1)]
(1) coleoptile (2) scutellum
(3) plumule (4) coleorhiza.

Scan or tap for the full solution

Q.102 Tricarpellary, syncarpous gynoecium is found in flowers of [NEET 2016 (Phase 1)]
(1) Fabaceae (2) Poaceae
(3) Liliaceae (4) Solanaceae

Scan or tap for the full solution

Q.103 The standard petal of a papilionaceous corolla is also called [NEET 2016 (Phase 1)]
(1) vexillum (2) corona
(3) carina (4) pappus.

Scan or tap for the full solution

Q.104 A typical fat molecule is made up of [NEET 2016 (Phase 1)]

(1) one glycerol and one fatty acid molecule
(2) three glycerol and three fatty acid molecules
(3) three glycerol molecules and one fatty acid molecule
(4) one glycerol and three fatty acid molecules.

Scan or tap for the full solution

Q.105 Which one of the following statements is wrong? [NEET 2016 (Phase 1)]

(1) Uracil is a pyrimidine.
(2) Glycine is a sulphur containing amino acid.
(3) Sucrose is a disaccharide.
(4) Cellulose is a polysaccharide.

Scan or tap for the full solution

Q.106 Spindle fibres attach on to [NEET 2016 (Phase 1)]

(1) centromere of the chromosome
(2) kinetosome of the chromosome
(3) telomere of the chromosome
(4) kinetochore of the chromosome.

Scan or tap for the full solution

Q.107 Which of the following is not a characteristic feature during mitosis in somatic cells? [NEET 2016 (Phase 1)]

(1) Chromosome movement
(2) Synapsis
(3) Spindle fibres
(4) Disappearance of nucleolus

Scan or tap for the full solution

Q.108 In meiosis crossing over is initiated at [NEET 2016 (Phase 1)]

(1) zygotene (2) diplotene
(3) pachytene (4) leptotene.

Scan or tap for the full solution

Q.109 Water vapour comes out from the plant leaf through the stomatal opening. Through the same stomatal opening carbon dioxide diffuses into the plant during photosynthesis. Reason out the above statements using one of following options. [NEET 2016 (Phase 1)]

(1) The above processes happen only during night time.
(2) One process occurs during day time and the other at night.
(3) Both processes cannot happen simultaneously.
(4) Both processes can happen together because the diffusion coefficient of water and CO_2 is different.

Scan or tap for the full solution

Q.110 In a chloroplast the highest number of protons are found in [NEET 2016 (Phase 1)]

(1) intermembrane space
(2) antennae complex
(3) stroma
(4) lumen of thylakoids.

Scan or tap for the full solution

Q.111 Emerson's enhancement effect and Red drop have been instrumental in the discovery of [NEET 2016 (Phase 1)]

(1) photophosphorylation and cyclic electron transport
(2) oxidative phosphorylation
(3) photophosphorylation and non-cyclic electron transport
(4) two photosystems operating simultaneously.

Scan or tap for the full solution

Q.112 A plant in your garden avoids photorespiratory losses, has improved water use efficiency, shows high rates of photosynthesis at high temperatures and has improved efficiency of nitrogen utilisation. In which of the following physiological groups would you assign this plant? [NEET 2016 (Phase 1)]

(1) CAM (2) Nitrogen fixer
(3) C_3 (4) C_4

Scan or tap for the full solution

Q.113 Water soluble pigments found in plant cell vacuoles are [NEET 2016 (Phase 1)]

(1) carotenoids (2) anthocyanins
(3) xanthophylls (4) chlorophylls.

Scan or tap for the full solution

Q.114 The *Avena* curvature is used for bioassay of [NEET 2016 (Phase 1)]

(1) IAA (2) ethylene
(3) ABA (4) GA_3.

Scan or tap for the full solution

Q.115 The coconut water from tender coconut represents [NEET 2016 (Phase 1)]

(1) free nuclear proembryo
(2) free nuclear endosperm
(3) endocarp
(4) fleshy mesocarp.

Scan or tap for the full solution

Q.116 Which one of the following statements is not true? [NEET 2016 (Phase 1)]

(1) Pollen grains of many species cause severe allergies.
(2) Stored pollen in liquid nitrogen can be used in the crop breeding programmes.
(3) Tapetum helps in the dehiscence of anther.
(4) Exine of pollen grains is made up of sporopollenin.

Scan or tap for the full solution

Q.117 Seed formation without fertilisation in flowering plants involves the process of [NEET 2016 (Phase 1)]

(1) somatic hybridisation
(2) apomixis
(3) sporulation
(4) budding.

Scan or tap for the full solution

Q.118 Proximal end of the filament of stamen is attached to the [NEET 2016 (Phase 1)]

(1) placenta (2) thalamus or petal
(3) anther (4) connective.

Scan or tap for the full solution

Q.119 Which of the following statements is not correct? [NEET 2016 (Phase 1)]

(1) Pollen germination and pollen tube growth are regulated by chemical components of pollen interacting with those of the pistil.
(2) Some reptiles have also been reported as pollinators in some plant species.
(3) Pollen grains of many species can germinate on the stigma of a flower, but only one pollen tube of the same species grows into the style.
(4) Insects that consume pollen or nectar without bringing about pollination are called pollen/nectar robbers.

Scan or tap for the full solution

Q.120 A cell at telophase stage is observed by a student in a plant brought from the field. He tells his teacher that this cell is not like other cells at telophase stage. There is no formation of cell plate and thus the cell is containing more number of chromosomes as compared to other dividing cells. This would result in - [NEET 2016 (Phase 1)]

(1) Polyteny (2) Aneuploidy
(3) Polyploidy (4) Somaclonal variation

Scan or tap for the full solution

Q.121 Pick out the **correct** statements :

A. Haemophilia is a sex-linked recessive disease.
B. Down's syndrome is due to aneuploidy.
C. Phenylketonuria is an autosomal recessive gene disorder.
D. Sickle cell anaemia is an X-linked recessive gene disorder. [NEET 2016 (Phase 1)]

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

Scan or tap for the full solution

Q.122 A tall true breeding garden pea plant is crossed with a dwarf true breeding garden pea plant. When the F_1 plants were selfed the resulting genotypes were in the ratio of - [NEET 2016 (Phase 1)]

(1) 3 : 1 :: Tall : Dwarf
(2) 1 : 2 : 1 :: Tall heterozygous : Tall homozygous : Dwarf
(3) 1 : 2 : 1 :: Tall homozygous : Tall heterozygous : Dwarf
(4) 3 : 1 :: Dwarf : Tall

Scan or tap for the full solution

Q.123 Match the terms in **Column-I** with their description in **Column-II** and choose the correct option : [NEET 2016 (Phase 1)]

Column-I		Column-II	
a.	Dominance	i.	Many genes govern a single character
b.	Codominance	ii.	In a heterozygous organism only one allele expresses itself
c.	Pleiotropy	iii.	In a heterozygous organism both alleles express themselves fully

Column-I		Column-II	
d.	Polygenic inheritance	iv.	A single gene influences many characters

(1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
(2) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
(3) (a)-(ii), (b)-(ii), (c)-(iv), (d)-(iii)
(4) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

Scan or tap for the full solution

Q.124 In a testcross involving F_1 dihybrid flies, more parental-type offspring were produced than the recombinant-type offspring. This indicates [NEET 2016 (Phase 1)]

(1) Both of the characters are controlled by more than one gene
(2) The two genes are linked and present on the same chromosome
(3) The two genes are located on two different chromosomes
(4) Chromosomes failed to separate during meiosis

Scan or tap for the full solution

Q.125 Which of the following most appropriately describes haemophilia ? [NEET 2016 (Phase 1)]

(1) Chromosomal disorder
(2) X-linked recessive gene disorder
(3) Dominant gene disorder
(4) Recessive gene disorder

Scan or tap for the full solution

Q.126 Which one of the following is the starter codon ? [NEET 2016 (Phase 1)]

(1) AUG (2) UAG (3) UAA (4) UGA

Scan or tap for the full solution

Q.127 Which of the following is required as inducer(s) for the expression of Lac operon? [NEET 2016 (Phase 1)]

(1) lactose (2) lactose and galactose
(3) glucose (4) galactose

Scan or tap for the full solution

Q.128 A complex of ribosomes attached to a single strand of RNA is known as : [NEET 2016 (Phase 1)]

(1) Polypeptide (2) Okazaki fragment
(3) Polysome (4) Polymer

Scan or tap for the full solution

Q.129 Which of the following is wrongly matched in the given table? [NEET 2016 (Phase 1)]

(1) Microbe - *Streptococcus*, Product - Streptokinase, Application - Removal of clot from blood vessel
(2) Microbe - *Trichoderma polysporum*, Product - Cyclosporin A, Application - Immunosuppressive drug
(3) Microbe - *Monascus purpureus*, Product - Statins, Application - Lowering of blood cholesterol
(4) Microbe - *Clostridium butylicum*, Product - Lipase, Application - Removal of oil stains

Scan or tap for the full solution

Q.130 Which of the following is not required for any of the techniques of DNA fingerprinting available at present? [NEET 2016 (Phase 1)]

(1) DNA – DNA hybridization
(2) Polymerase chain reaction
(3) Zinc finger analysis
(4) Restriction enzymes

Scan or tap for the full solution

Q.131 It is much easier for a small animal to run uphill than for a large animal, because - [NEET 2016 (Phase 1)]

(1) The efficiency of muscles in large animals is less than in the small animals
(2) Smaller animals have a higher metabolic rate
(3) It is easier to carry a small body weight
(4) Small animals have a lower O_2 requirement

Scan or tap for the full solution

Q.132 When does the growth rate of a population following the logistic model equal zero?
The logistic model is given as $dN/dt = rN(1–N/K)$ [NEET 2016 (Phase 1)]

(1) When death rate is greater than birth rate.
(2) When N/K equals zero.
(3) When N/K is exactly one.
(4) When N nears the carrying capacity of the habitat.

Scan or tap for the full solution

Q.133 Gause's principle of competitive exclusion states that - [NEET 2016 (Phase 1)]

(1) Larger organisms exclude smaller ones through competition
(2) More abundant species will exclude the less abundant species through competition
(3) Competition for the same resources excludes species having different food preferences
(4) No two species can occupy the same niche indefinitely for the same limiting resources

Scan or tap for the full solution

Q.134 Which of the following would appear as the pioneer organisms on bare rocks? [NEET 2016 (Phase 1)]

(1) Lichens (2) Green algae
(3) Liverworts (4) Mosses

Scan or tap for the full solution

Q.135 Which one of the following is a characteristic feature of cropland ecosystem ? [NEET 2016 (Phase 1)]

(1) Absence of weeds
(2) Absence of soil organisms
(3) Ecological succession
(4) Least genetic diversity

Scan or tap for the full solution

Q.136 The term ecosystem was coined by : [NEET 2016 (Phase 1)]

(1) E.P. Odum (2) E. Haeckel
(3) E. Warming (4) A.G. Tansley

Scan or tap for the full solution

Q.137 Which is the National Aquatic Animal of India ? [NEET 2016 (Phase 1)]

(1) River dolphin (2) Sea-horse
(3) Gangetic shark (4) Blue whale

Scan or tap for the full solution

Q.138 Which of the following is the most important cause of animals and plants being driven to extinction ? [NEET 2016 (Phase 1)]

(1) Co-extinctions
(2) Over-exploitation
(3) Alien species invasion
(4) Habitat loss and fragmentation

Scan or tap for the full solution

Q.139 Specialised epidermal cells surrounding the guard cells are called - [NEET 2016 (Phase 1)]

(1) Lenticels (2) Complementary cells
(3) Bulliform cells (4) Subsidiary cells

Scan or tap for the full solution

Q.140 Mitochondria and chloroplast are-
Which one of the following options is correct?
A. semi-autonomous organelles
B. formed by division of pre-existing organelles and they contain DNA but lack protein synthesising machinery [NEET 2016 (Phase 1)]

(1) Both A and B are false
(2) Both A and B are correct
(3) B is true but A is false
(4) A is true but B is false

Scan or tap for the full solution

Q.141 Microtubules are the constituents of [NEET 2016 (Phase 1)]

(1) Cilia, Flagella and Peroxisomes
(2) Centrosome, Nucleosome and Centrioles
(3) Spindle fibres, Centrioles and Cilia
(4) Centrioles, spindle fibres and chromatin

Scan or tap for the full solution

Q.142 Which one of the following cell organelles is enclosed by a single membrane? [NEET 2016 (Phase 1)]

(1) Mitochondria (2) Chloroplasts
(3) Lysosomes (4) Nuclei

Scan or tap for the full solution

Q.143 In which of the following all three are macronutrients? [NEET 2016 (Phase 1)]

(1) Molybdenum, magnesium, manganese
(2) Nitrogen, phosphorus, sulphur
(3) Boron, Zinc, manganese
(4) Iron, copper, molybdenum

Scan or tap for the full solution

Q.144 A system of rotating crops with legume or grass pasture to improve soil structure and fertility is called - [NEET 2016 (Phase 1)]

(1) Shifting agriculture (2) Strip farming
(3) Ley farming (4) Contour farming

Scan or tap for the full solution

Q.145 Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancers [NEET 2016 (Phase 1)]

(1) Methane (2) Ozone
(3) Nitrous oxide (4) Ammonia

Scan or tap for the full solution

Q.146 Joint Forest Management Concept was introduced in India during : [NEET 2016 (Phase 1)]

(1) 1990s (2) 1970s (3) 1960s (4) 1980s

Scan or tap for the full solution

Q.147 A river with an inflow of domestic sewage rich in organic waste may result in - [NEET 2016 (Phase 1)]

(1) Death of fish due to lack of oxygen
(2) Increased population of aquatic food web organisms
(3) Drying of the river very soon due to algal bloom
(4) An increased production of fish due to biodegradable nutrients

Scan or tap for the full solution

Q.148 Which of the following characteristic features always holds true for the corresponding group of animals? [NEET 2016 (Phase 1)]

(1) Possess a mouth with an upper and a lower jaw – Chordata
(2) 3-chambered heart with one incompletely divided ventricle – Reptilia
(3) Cartilaginous endoskeleton – Chondrichthyes
(4) Viviparous – Mammalia

Scan or tap for the full solution

Q.149 Which one of the following characteristics is not shared by birds and mammals? [NEET 2016 (Phase 1)]

(1) Viviparity
(2) Warm blooded nature
(3) Ossified endoskeleton
(4) Breathing using lungs

Scan or tap for the full solution

Q.150 Which of the following features is not present in the Phylum Arthropoda? [NEET 2016 (Phase 1)]

(1) Parapodia
(2) Jointed appendages
(3) Chitinous exoskeleton
(4) Metameric segmentation

Scan or tap for the full solution

Q.151 Reduction in pH of blood will [NEET 2016 (Phase 1)]

(1) decrease the affinity of haemoglobin with oxygen
(2) release bicarbonate ions by the liver
(3) reduce the rate of heart beat
(4) reduce the blood supply to the brain.

Scan or tap for the full solution

Q.152 Name the chronic respiratory disorder caused mainly by cigarette smoking. [NEET 2016 (Phase 1)]

(1) Respiratory acidosis (2) Respiratory alkalosis
(3) Emphysema (4) Asthma

Scan or tap for the full solution

Q.153 Asthma may be attributed to [NEET 2016 (Phase 1)]

(1) inflammation of the trachea
(2) accumulation of fluid in the lungs
(3) bacterial infection of the lungs
(4) allergic reaction of the mast cells in the lungs.

Scan or tap for the full solution

Q.154 Blood pressure in the pulmonary artery is [NEET 2016 (Phase 1)]

(1) more than that in the pulmonary vein
(2) less than that in the venae cavae
(3) same as that in the aorta
(4) more than that in the carotid.

Scan or tap for the full solution

Q.155 In mammals, which blood vessel would normally carry largest amount of urea? [NEET 2016 (Phase 1)]

(1) Hepatic Vein (2) Hepatic Portal Vein
(3) Renal Vein (4) Dorsal Aorta

Scan or tap for the full solution

Q.156 Lack of relaxation between successive stimuli in sustained muscle contraction is known as [NEET 2016 (Phase 1)]

(1) tetanus (2) tonus (3) spasm (4) fatigue.

Scan or tap for the full solution

Q.157 Which of the following pairs of hormones are not antagonistic (having opposite effects) to each other? [NEET 2016 (Phase 1)]

(1) Aldosterone – Atrial Natriuretic Factor
(2) Relaxin – Inhibin
(3) Parathormone – Calcitonin
(4) Insulin – Glucagon

Scan or tap for the full solution

Q.158 The amino acid tryptophan is the precursor for the synthesis of [NEET 2016 (Phase 1)]
(1) estrogen and progesterone
(2) cortisol and cortisone
(3) melatonin and serotonin
(4) thyroxine and triiodothyronine.

Scan or tap for the full solution

Q.159 Changes in GnRH pulse frequency in females is controlled by circulating levels of [NEET 2016 (Phase 1)]
(1) progesterone only
(2) progesterone and inhibin
(3) estrogen and progesterone
(4) estrogen and inhibin.

Scan or tap for the full solution

Q.160 Fertilisation in humans is practically feasible only if [NEET 2016 (Phase 1)]
(1) the ovum and sperms are transported simultaneously to ampullary-isthmic junction of the cervix
(2) the sperms are transported into cervix within 48 hrs of release of ovum in uterus
(3) the sperms are transported into vagina just after the release of ovum in Fallopian tube
(4) the ovum and sperms are transported simultaneously to ampullary-isthmic junction of the Fallopian tube.

Scan or tap for the full solution

Q.161 Select the incorrect statement. [NEET 2016 (Phase 1)]
(1) LH and FSH decrease gradually during the follicular phase.
(2) LH triggers secretion of androgen from the Leydig cells.
(3) FSH stimulates the Sertoli cells which help in spermiogenesis.
(4) LH triggers ovulation in ovary.

Scan or tap for the full solution

Q.162 Identify the correct statement on 'inhibin'. [NEET 2016 (Phase 1)]
(1) Is produced by granulosa cells in ovary and inhibits the secretion of LH
(2) Is produced by nurse cells in testes and inhibits the secretion of LH
(3) Inhibits the secretion of LH, FSH and prolactin
(4) Is produced by granulosa cells in ovary and inhibits the secretion of FSH

Scan or tap for the full solution

Q.163 Which of the following approaches does not give the defined action of contraceptive ? [NEET 2016 (Phase 1)]
(1) Intra uterine devices $\longrightarrow$ Increase phagocytosis of sperms, suppress sperm motility and fertilizing capacity of sperm
(2) Barrier methods $\longrightarrow$ Prevent fertilization
(3) Hormonal contraceptives $\longrightarrow$ Prevent/retard entry of sperm, prevent ovulation and fertilization
(4) Vasectomy $\longrightarrow$ Prevents spermatogenesis

Scan or tap for the full solution

Q.164 In context of Amniocentesis, which of the following statements is incorrect ? [NEET 2016 (Phase 1)]
(1) It can be used for detection of Down syndrome
(2) It is usually done when a woman is between 14-16 weeks pregnant
(3) It is used for prenatal sex determination
(4) It can be used for detection of Cleft palate

Scan or tap for the full solution

Q.165 Which of the following structures is homologous to the wing of a bird ? [NEET 2016 (Phase 1)]
(1) Wing of a Moth (2) Dorsal fin of a Shark
(3) Flipper of Whale (4) Hindlimb of Rabbit

Scan or tap for the full solution

Q.166 Analogous structures are a result of : [NEET 2016 (Phase 1)]
(1) Divergent evolution (2) Convergent evolution
(3) Stabilizing selection (4) Shared ancestry

Scan or tap for the full solution

Q.167 Following are the two statements regarding the origin of life -
Of the above statements which one of the following options is correct ?
A. The earliest organisms that appeared on the earth were non-green and presumably anaerobes

B. The first autotrophic organisms were the chemoautotrophs that never released oxygen [NEET 2016 (Phase 1)]

(1) Both A and B are false
(2) Both A and B are correct
(3) B is correct but A is false
(4) A is correct but B is false

Scan or tap for the full solution

Q.168 Antivenom injection contains preformed antibodies while polio drops that are administered into the body contain - [NEET 2016 (Phase 1)]

(1) Attenuated pathogens
(2) Activated pathogens
(3) Harvested antibodies
(4) Gamma globulin

Scan or tap for the full solution

Q.169 Which of the following statements is not true for cancer cells in relation to mutations ? [NEET 2016 (Phase 1)]

(1) Mutations inhibit production of telomerase
(2) Mutations in proto-oncogenes accelerate the cell cycle
(3) Mutations destroy telomerase inhibitor
(4) Mutations inactivate the cell control

Scan or tap for the full solution

Q.170 In higher vertebrates, the immune system can distinguish self-cells and non-self. If this property is lost due to genetic abnormality and it attacks self-cells, then it leads to [NEET 2016 (Phase 1)]

(1) Active immunity (2) Allergic response
(3) Graft rejection (4) Auto-immune disease

Scan or tap for the full solution

Q.171 Which of the following is not a feature of the plasmids ? [NEET 2016 (Phase 1)]

(1) Single-stranded
(2) Transferable
(3) Independent replication
(4) Circular structure

Scan or tap for the full solution

Q.172 The taq polymerase enzyme is obtained from [NEET 2016 (Phase 1)]

(1) *Thermus aquaticus*
(2) *Bacillus subtilis*
(3) *Pseudomonas putida*
(4) *Thiobacillus ferrooxidans*

Scan or tap for the full solution

Q.173 Which of the following is a restriction endonuclease ? [NEET 2016 (Phase 1)]

(1) DNase I (2) Hind II
(3) RNase I (4) Protease

Scan or tap for the full solution

Q.174 The two polypeptides of human insulin are linked together by [NEET 2016 (Phase 1)]

(1) Hydrogen bonds (2) Covalent bond
(3) Disulphide bridges (4) Phosphodiester bond

Scan or tap for the full solution

Q.175 Which part of the tobacco plant is infected by *Meloidogyne incognita* ? [NEET 2016 (Phase 1)]

(1) Flower (2) Stem (3) Leaf (4) Root

Scan or tap for the full solution

Q.176 Which type of tissue correctly matches with its locations ? [NEET 2016 (Phase 1)]

(1) Tissue $\longrightarrow$ Smooth muscle , Location $\longrightarrow$ Wall of intestine
(2) Tissue $\longrightarrow$ Areolar tissue, Location $\longrightarrow$ Tendons
(3) Tissue $\longrightarrow$ Cuboidal epithelium, Location $\longrightarrow$ Lining of stomach
(4) Tissue $\longrightarrow$ Transitional epithelium, Location $\longrightarrow$ Tip of nose

Scan or tap for the full solution

Q.177 Which of the following features is not present in *Periplaneta americana*? [NEET 2016 (Phase 1)]

(1) Indeterminate and radial cleavage during embryonic development
(2) Schizocoelom as body cavity
(3) Metamerically segmented body
(4) Exoskeleton composed of N-acetylglucosamine

Scan or tap for the full solution

Q.178 Which of the following guards the opening of hepatopancreatic duct into the duodenum? [NEET 2016 (Phase 1)]

(1) Pyloric sphincter (2) Sphincter of Oddi
(3) Semilunar valve (4) Ileocaecal valve

Scan or tap for the full solution

Q.179 In the stomach, gastric acid is secreted by the [NEET 2016 (Phase 1)]

(1) peptic cells
(2) acidic cells
(3) gastrin secreting cells
(4) parietal cells.

Scan or tap for the full solution

Q.180 Photosensitive compound in human eye is made up of [NEET 2016 (Phase 1)]

(1) opsin and retinol
(2) transducin and retinene
(3) guanosine and retinol
(4) opsin and retinal.

Scan or tap for the full solution

ANSWER KEY

Ques.	1	2	3	4	5	6	7
Ans.	1	4	1	4	3	2	2
Ques.	8	9	10	11	12	13	14
Ans.	4	4	3	3	4	2	1
Ques.	15	16	17	18	19	20	21
Ans.	2	2	4	4	1	1	4
Ques.	22	23	24	25	26	27	28
Ans.	2	1	2	3	1	3	3
Ques.	29	30	31	32	33	34	35
Ans.	3	4	2	2	3	2	2
Ques.	36	37	38	39	40	41	42
Ans.	2	4	3	2	1	3	2
Ques.	43	44	45	46	47	48	49
Ans.	4	1	3	2	1, 4	4	3
Ques.	50	51	52	53	54	55	56
Ans.	1, 3	2	4	4	4	2	4
Ques.	57	58	59	60	61	62	63
Ans.	2	3	3	3	2	3	3
Ques.	64	65	66	67	68	69	70
Ans.	4	1	2	3	3	3	3
Ques.	71	72	73	74	75	76	77
Ans.	2	3	1	4	3	4	2
Ques.	78	79	80	81	82	83	84
Ans.	2	1	3	2, 3	1	1	3
Ques.	85	86	87	88	89	90	91
Ans.	4	3	3	4	3	3	3
Ques.	92	93	94	95	96	97	98
Ans.	1	1	2	3	4	1	2

Ques.	99	100	101	102	103	104	105
Ans.	3	1	2	3	1	4	2
Ques.	106	107	108	109	110	111	112
Ans.	4	2	3	4	4	4	4
Ques.	113	114	115	116	117	118	119
Ans.	2	1	2	3	2	2	3
Ques.	120	121	122	123	124	125	126
Ans.	3	1	3	1	2	2	1
Ques.	127	128	129	130	131	132	133
Ans.	1	3	4	3	2	3	4
Ques.	134	135	136	137	138	139	140
Ans.	1	4	4	1	4	4	4
Ques.	141	142	143	144	145	146	147
Ans.	3	3	2	3	2	4	1
Ques.	148	149	150	151	152	153	154
Ans.	3	1	1	1	3	4	1
Ques.	155	156	157	158	159	160	161
Ans.	1	1	2	3	3	4	1
Ques.	162	163	164	165	166	167	168
Ans.	4	4	4	3	2	2	1
Ques.	169	170	171	172	173	174	175
Ans.	1	4	1	1	2	3	4
Ques.	176	177	178	179	180		
Ans.	1	1	2	4	4		