MedicNEET

NEET 2021 — Previous Year Question Paper

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Physics · 50 Qs

1. Two charged spherical conductors of radii R_1 and R_2 are connected by a wire. Then the ratio of the surface charge densities of the spheres (σ_1/σ_2) is

   (1) $(R_1/R_2)^2$

   (2) R_2^2/R_1^2

   (3) R_1/R_2

   (4) R_2/R_1

2. Polar molecules are the molecules:

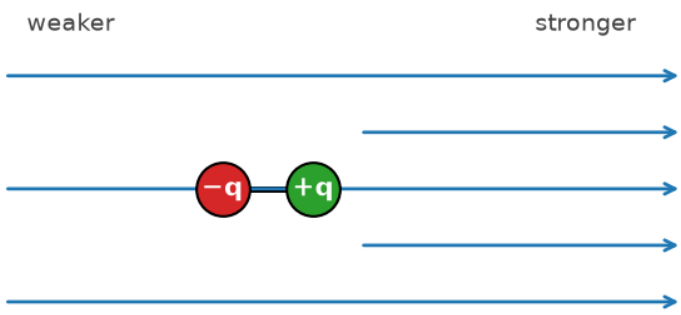
   (1) that acquire a dipole moment only when a magnetic field is absent

   (2) having a permanent electric dipole moment

   (3) having zero dipole moment

   (4) in which an electric field is present due to the displacement of charges

3. A dipole is placed in a non-uniform electric field as shown. In which direction will it move?



(1) towards the left as its potential energy will decrease

(2) towards the right as its potential energy will increase

(3) towards the left as its potential energy will increase

(4) towards the right as its potential energy will decrease

4. A screw gauge gives the following readings when used to measure the diameter of a wire: Main scale reading: 0 mm; Circular scale reading: 52 divisions. Given that 1 mm on the main scale corresponds to 100 divisions on the circular scale, the diameter of the wire is:

(1) 0.26 cm

(2) 0.052 cm

(3) 0.52 cm

(4) 0.026 cm

5. If force [F], acceleration [A] and time [T] are chosen as the fundamental physical quantities, find the dimensions of energy.

(1) $[F][A][T^{-1}]$

(2) $[F][A^{-1}][T]$

(3) $[F][A][T]$

(4) $[F][A][T^{2}]$

6. If E and G respectively denote energy and gravitational constant, then E/G has the dimensions of:

(1) $[M][L^{0}][T^{0}]$

(2) $[M^{2}][L^{-2}][T^{-1}]$

(3) $[M^{2}][L^{-1}][T^{0}]$

(4) $[M][L^{-1}][T^{-1}]$

7. A parallel plate capacitor has a uniform electric field 'E' in the space between the plates. If the distance between the plates is 'd' and the area of each plate is 'A' the energy stored in the capacitor is: (ε_0 = permittivity of free space)

(1) $(1/2)\ \varepsilon_0\ E^2\ A\ d$

(2) $\varepsilon_0\ E^2\ A\ d$

(3) $(1/2)\ \varepsilon_0\ E^2$

(4) $\varepsilon_0\ E\ A\ d$

8. Two charged spherical conductors of radius R1 and R2 are connected by a wire. Then the ratio of surface charge densities of the sphere (sigma1/sigma2) is:

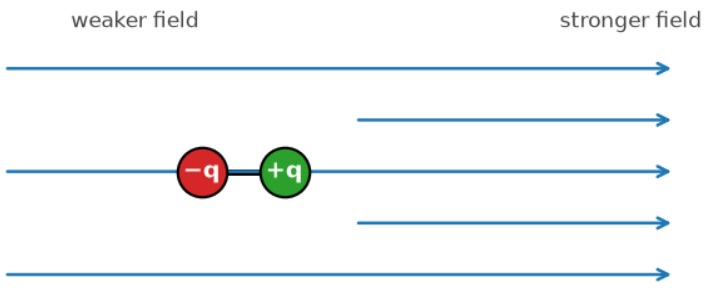
(1) R_1/R_2

(2) R_2^2/R_1^2

(3) R_1^2/R_2^2

(4) R_2/R_1

9. A dipole is placed in an electric field as shown. In which direction will it move?



(1) Towards the left as its potential energy will decrease

(2) Towards the right as its potential energy will increase

(3) Towards the left as its potential energy will increase

(4) Towards the right as its potential energy will decrease

10. Twenty seven drops of same size are charged at 220 V each. They combine to form a bigger drop. Calculate the potential of the bigger drop.

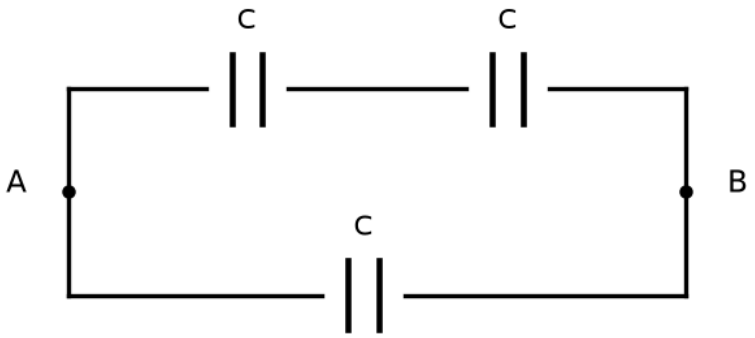
(1) 1520 V

(2) 1980 V

(3) 660 V

(4) 1320 V

11. The equivalent capacitance of the combination shown in the figure is:



(1) C/2

(2) 3C/2

(3) 3C

(4) 2C

12. A small block slides down from the top of a smooth inclined plane starting from rest at t = 0. If S_n is the distance travelled by it from t = (n-1) s to t = n s, the ratio $\frac{S_n}{S_{n+1}}$ is:

(1) $\frac{2n+1}{2n-1}$

(2) $\frac{2n-1}{2n+1}$

(3) $\frac{2n-1}{2n}$

(4) $\frac{2n}{2n+1}$

13. In the product $\vec{F} = q\,\vec{v} \times \vec{B}$, for $q = 1$, $\vec{v} = 2\hat{i} + 4\hat{j} + 6\hat{k}$ and $\vec{F} = 4\hat{i} - 20\hat{j} + 12\hat{k}$, the complete expression for $\vec{B}$ is:

(1) $8\hat{i} + 8\hat{j} - 6\hat{k}$

(2) $6\hat{i} + 6\hat{j} - 8\hat{k}$

(3) $-8\hat{i} - 8\hat{j} - 6\hat{k}$

(4) $-6\hat{i} - 6\hat{j} - 8\hat{k}$

14. A car starts from rest and accelerates at $5\ \text{m/s}^2$. At $t = 4$ s a ball is dropped out of a window by a person sitting in the car. What are the velocity and acceleration of the ball at $t = 6$ s? (Take $g = 10\ \text{m/s}^2$)

(1) $20\sqrt{2}\ \text{m/s},\ 0$

(2) $20\sqrt{2}\ \text{m/s},\ 10\ \text{m/s}^2$

(3) $20\ \text{m/s},\ 5\ \text{m/s}^2$

(4) $20\ \text{m/s},\ 0$

15. A particle moving in a circle of radius R with uniform speed takes a time T to complete one revolution. If this particle is projected with the same speed at an angle θ to the horizontal, the maximum height attained equals $4R$. The angle of projection θ is given by:

(1) $\theta = \sin^{-1}\sqrt{\dfrac{2\pi R}{gT^2}}$

(2) $\theta = \sin^{-1}\sqrt{\dfrac{2gT^2}{\pi^2 R}}$

(3) $\theta = \cos^{-1}\sqrt{\dfrac{gT^2}{\pi R}}$

(4) $\theta = \cos^{-1}\sqrt{\dfrac{2R}{\pi g T^2}}$

16. A ball of mass 0.15 kg is dropped from a height of 10 m, strikes the ground and rebounds to the same height. The magnitude of the impulse imparted to the ball is nearly (g = 10 m/s²):

(1) 21 kg·m/s

(2) 1.4 kg·m/s

(3) 0 kg·m/s

(4) 4.2 kg·m/s

17. In the product F = q(v × B) = q(v_x î + v_y ĵ + v_z k̂) × (B_x î + B_y ĵ + B_z k̂), for q = 1 and v = 2î + 4ĵ + 6k̂ and F = 4î – 20ĵ + 12k̂, what will be the complete expression for B?

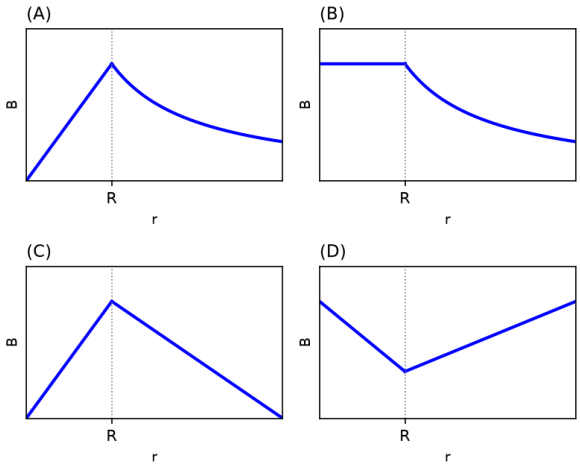
(1) 8î + 8ĵ – 6k̂

(2) 6î + 6ĵ – 8k̂

(3) –8î – 8ĵ – 6k̂

(4) –6î – 6ĵ – 8k̂

18. A thick current cable of radius R carries current 'I' uniformly distributed across its cross-section. The variation of magnetic field B(r) due to the cable with the distance 'r' from the axis of the cable is represented by:



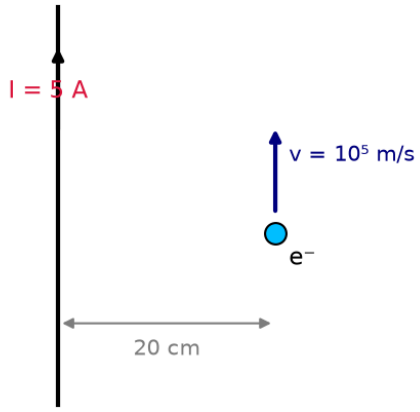
(1) (A)

(2) (B)

(3) (C)

(4) (D)

19. An infinitely long straight conductor carries a current of 5 A as shown. An electron is moving with a speed of 10^5 m/s parallel to the conductor. The perpendicular distance between the electron and the conductor is 20 cm at an instant. Calculate the magnitude of the force experienced by the electron at the instant.



(1) $4\pi \times 10^{-20}$ N

(2) 8×10^{-20} N

(3) 4×10^{-20} N

(4) $8\pi \times 10^{-20}$ N

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20. A uniform conducting wire of length 12a and resistance 'R' is wound up as a current carrying coil in the shape of (i) an equilateral triangle of side 'a'. (ii) a square of side 'a'. The magnetic dipole moments of the coil in each case respectively are:

(1) 3 Ia^2 and 4 Ia^2

(2) 4 Ia^2 and 3 Ia^2

(3) $\sqrt{3}$ Ia^2 and 3 Ia^2

(4) $\sqrt{3}$ Ia^2 and Ia^2

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21. Water falls from a height of 60 m at the rate of 15 kg/s to operate a turbine. The losses due to frictional force are 10% of the input energy. How much power is generated by the turbine? ($g=10$ m/s^2)

(1) 12.3 kW

(2) 7.0 kW

(3) 10.2 kW

(4) 8.1 kW

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22. A particle is released from height S from the surface of the Earth. At a certain height its kinetic energy is three times its potential energy. The height from the surface of the Earth and the speed of the particle at that instant are respectively

(1) 3S/4, $\sqrt{(3gS/2)}$

(2) S/4, $\sqrt{(3gS/2)}$

(3) S/4, 3gS/2

(4) 3S/4, 3gS/2

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23. Two conducting circular loops of radii R1 and R2 are placed in the same plane with their centres coinciding. If R1 >> R2, the mutual inductance M between them will be directly proportional to:

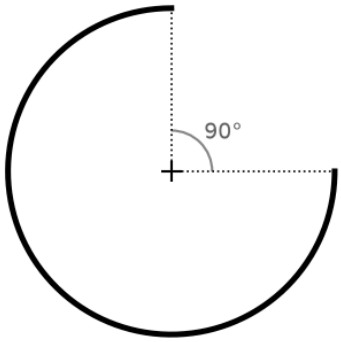
(1) R_1^2 / R_2^2

(2) R_2^2 / R_1

(3) R_1 / R_2

(4) R_2 / R_1

24. From a circular ring of mass M and radius R, an arc corresponding to a 90° sector is removed. The moment of inertia of the remaining part about an axis through the centre and perpendicular to the plane is $K \cdot MR^2$. Then K is:

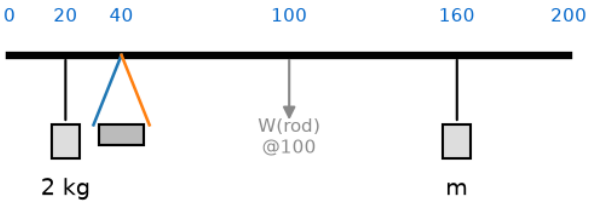


Ring mass M, radius R; a 90° arc removed. Axis perp. to plane through centre.

(1) 1/4 **(2)** 1/8

(3) 3/4 **(4)** 7/8

25. A uniform rod (200 cm, 500 g) is balanced on a wedge at the 40 cm mark. A 2 kg mass hangs at the 20 cm mark and an unknown mass m hangs at the 160 cm mark. For equilibrium, m is: ($g = 10\ m/s^2$)



Uniform rod 200 cm, 500 g on wedge @40 cm; 2 kg @20 cm, m @160 cm

(1) 1/6 kg **(2)** 1/12 kg

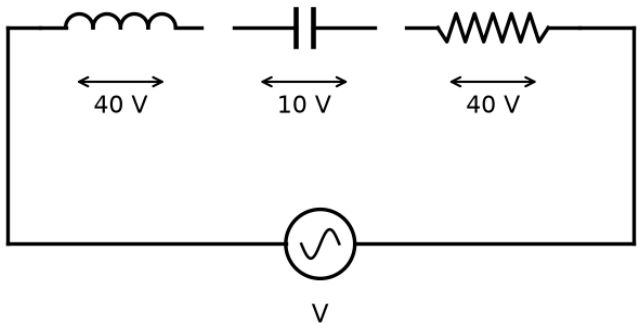
(3) 1/2 kg **(4)** 1/3 kg

26. A series LCR circuit containing 5.0 H inductor, 80 μF capacitor and 40 Ω resistor is connected to 230 V variable frequency ac source. The angular frequencies of the source at which power transferred to the circuit is half the power at the resonant angular frequency are likely to be:

(1) 46 rad/s and 54 rad/s **(2)** 42 rad/s and 58 rad/s

(3) 25 rad/s and 75 rad/s **(4)** 50 rad/s and 25 rad/s

27. An inductor of inductance L, a capacitor of capacitance C and a resistor of resistance 'R' are connected in series to an ac source of potential difference 'V' volts as shown in figures. Potential difference across L, C and R is 40 V, 10 V and 40 V, respectively. The amplitude of current flowing through LCR series circuit is $10\sqrt{2}$. The impedance of the circuit is :



(1) 4 Ω

(2) 5 Ω

(3) $4\sqrt{2}$ Ω

(4) $5/\sqrt{2}$ Ω

28. A step down transformer connected to an ac mains supply of 220 V is made to operate at 11 V, 44 W lamp. Ignoring power losses in the transformer, what is the current in the primary circuit?

(1) 2 A

(2) 4 A

(3) 0.2 A

(4) 0.4 A

29. The escape velocity from the earth's surface is v. The escape velocity from the surface of another planet of radius four times that of earth and the same mean density is:

(1) 3v

(2) 4v

(3) v

(4) 2v

30. A particle is released from rest at height S above the earth's surface. At a certain height its kinetic energy is three times its potential energy (taking the surface as reference). The height above the surface and the speed at that instant are respectively:

(1) 3S/4 and $\sqrt{(3gS/2)}$

(2) S/4 and $\sqrt{(3gS/2)}$

(3) S/2 and $\sqrt{(3gS/2)}$

(4) S/4 and $\sqrt{(3gS)}$

31. A particle of mass m is projected with velocity $u = k \cdot v_e$ ($k < 1$) from the earth's surface (v_e = escape velocity). The maximum height above the surface reached by the particle is:

(1) $Rk^2/(1+k)$

(2) $Rk^2/(1-k^2)$

(3) $R(k/(1-k))^2$

(4) $R(k/(1+k))^2$

32. A capacitor of capacitance C is connected across an ac source of voltage V given by $V = V_0 \sin \omega t$. The displacement current between the plates of the capacitor would then be given by

(1) $I_d = (V_0/\omega C) \sin \omega t$

(2) $I_d = V_0 \omega C \sin \omega t$

(3) $I_d = V_0 \omega C \cos \omega t$

(4) $I_d = (V_0/\omega C) \cos \omega t$

33. For a plane electromagnetic wave propagating in the +x-direction, which one of the following combinations gives a correct possible pair of directions for the electric field (E) and magnetic field (B) respectively?

(1) $+\hat{j}-\hat{k}$, $-\hat{j}-\hat{k}$

(2) $-\hat{j}+\hat{k}$, $-\hat{j}+\hat{k}$

(3) $+\hat{j}+\hat{k}$, $\hat{j}+\hat{k}$

(4) $-\hat{j}+\hat{k}$, $-\hat{j}-\hat{k}$

34. The effective resistance of four identical wires in parallel is 0.25 Ω. Their effective resistance in series is:

(1) 1 Ω

(2) 4 Ω

(3) 0.25 Ω

(4) 0.5 Ω

35. In a potentiometer, a cell of emf 1.5 V balances at 36 cm. If a 2.5 V cell replaces it, the balance length is:

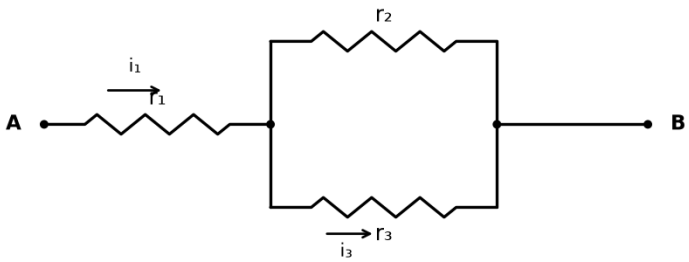
(1) 64 cm

(2) 62 cm

(3) 60 cm

(4) 21.6 cm

36. Three resistors r_1, r_2, r_3 are connected as shown. The ratio i_3/i_1 of currents in terms of the resistances is:



(1) $r_1/(r_1+r_2)$

(2) $r_2/(r_1+r_3)$

(3) $r_1/(r_2+r_3)$

(4) $r_2/(r_2+r_3)$

37. The electron concentration in an n-type semiconductor equals the hole concentration in a p-type. An electric field is applied across each. Compare the currents:

(1) n-type > p-type

(2) only n-type conducts

(3) n-type = p-type

(4) p-type > n-type

38. Match Column-I with Column-II:

Column-I
(A) Drift velocity
(B) Electrical resistivity
(C) Relaxation period
(D) Current density

Column-II
(P) $m/(ne^2\rho)$
(Q) $ne \cdot v_d$
(R) $(eE/m)\tau$
(S) E/J

Choose the correct match:

(1) A-R, B-P, C-S, D-Q

(2) A-R, B-Q, C-S, D-P

(3) A-R, B-S, C-P, D-Q

(4) A-R, B-S, C-Q, D-P

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39. The velocity of a small ball of mass M and density d, when dropped in a container filled with glycerine, becomes constant after some time. If the density of glycerine is d/2, then the viscous force acting on the ball will be:

(1) (3/2) Mg

(2) 2 Mg

(3) Mg/2

(4) Mg

---

40. A lens of large focal length and large aperture is best suited as an objective of an astronomical telescope since

(1) A large aperture contributes to the quality and visibility of the images

(2) A large area of the objective ensures better light gathering power

(3) A large aperture provides a better resolution

(4) All of the above

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41. A convex lens 'A' of focal length 20 cm and a concave lens 'B' of focal length 5 cm are kept along the same axis with a distance 'd' between them. If a parallel beam of light falling on 'A' leaves 'B' as a parallel beam, then the distance 'd' in cm will be

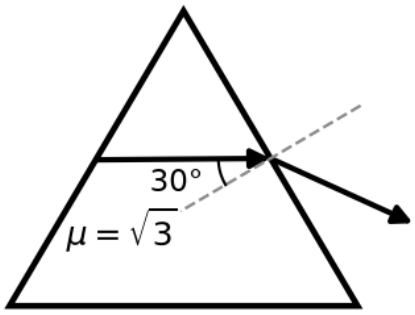
(1) 50

(2) 30

(3) 25

(4) 15

42. Find the value of the angle of emergence from the prism shown in the figure. The refractive index of the glass is √3 and the ray strikes the exit face of the prism at an internal angle of 30° to the normal.



(1) 45°

(2) 90°

(3) 60°

(4) 30°

43. A point object is placed at a distance of 60 cm from a convex lens of focal length 30 cm. If a plane mirror were put perpendicular to the principal axis of the lens and at a distance of 40 cm from it, the final image would be formed at a distance of

(1) 30 cm from the plane mirror, and it would be a virtual image

(2) 20 cm from the plane mirror, and it would be a virtual image

(3) 20 cm from the lens, and it would be a real image

(4) 30 cm from the lens, and it would be a real image

44. A cup of coffee cools from 90 °C to 80 °C in t minutes when the room temperature is 20 °C. The time taken by a similar cup of coffee to cool from 80 °C to 60 °C at the same room temperature (20 °C) is:

(1) (10/13) t

(2) (5/13) t

(3) (13/10) t

(4) (13/5) t

45. The number of photons per second on an average emitted by the source of monochromatic light of wavelength 600 nm, when it delivers the power of 3.3×10^{-3} W will be: ($h = 6.6 \times 10^{-34}$ J·s)

(1) 10^{16}

(2) 10^{15}

(3) 10^{18}

(4) 10^{17}

46. An electromagnetic wave of wavelength λ is incident on a photosensitive surface of negligible work function. If a photoelectron of mass m emitted from the surface has de Broglie wavelength λ_d, then:

(1) $\lambda = (2mc/h)\lambda_d^2$

(2) $\lambda = (2h/mc)\lambda_d^2$

(3) $\lambda = (m/hc)\lambda_d^2$

(4) $\lambda = (mc/h)\lambda_d^2$

47. Match Column-I with Column-II and choose the correct match from the given choices:

Column-I
(A) Root mean square speed of gas molecules
(B) Pressure exerted by ideal gas
(C) Average kinetic energy of a molecule
(D) Total internal energy of 1 mole of a diatomic gas

Column-II
(i) ⅓ n m v²_rms
(ii) √(3RT/M)
(iii) (5/2) RT
(iv) (3/2) k_B T

Choose the correct match:

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

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

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

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

48. A nucleus with mass number 240 breaks into two fragments each of mass number 120. The binding energy per nucleon of the unfragmented nucleus is 7.6 MeV while that of each fragment is 8.5 MeV. The total gain in the binding energy in the process is:

(1) 804 MeV

(2) 216 MeV

(3) 0.9 MeV

(4) 9.4 MeV

49. The half-life of a radioactive nuclide is 100 hours. The fraction of original activity that will remain after 150 hours is: (Out of syllabus)

(1) 2/3

(2) 1/(3√2)

(3) 1/2

(4) 1/(2√2)

50. A body executes simple harmonic motion with frequency n. The frequency of variation of its potential energy is

(1) 3n

(2) 4n

(3) n

(4) 2n

Chemistry · 42 Qs

51. The following solutions were prepared by dissolving 10 g glucose ($C_6H_{12}O_6$) in 250 mL of water (P1), 10 g of urea (CH_4N_2O) in 250 mL of water (P2) and 10 g of sucrose ($C_{12}H_{22}O_{11}$) in 250 mL of water (P3). The right option for the decreasing order of osmotic pressure of these solutions is:

(1) P2 > P3 > P1

(2) P3 > P1 > P2

(3) P2 > P1 > P3

(4) P1 > P2 > P3

52. The correct option for the value of vapour pressure of a solution at 45 °C with benzene to octane in molar ratio 3 : 2 is: [At 45 °C vapour pressure of benzene is 280 mm Hg and that of octane is 420 mm Hg. Assume ideal solution]

(1) 336 mm of Hg

(2) 350 mm of Hg

(3) 160 mm of Hg

(4) 168 mm of Hg

53. An organic compound contains 78\% (by wt.) carbon and the remaining percentage of hydrogen. The empirical formula of the compound is [at. wt.: C = 12, H = 1]

(1) CH_3 **(2)** CH_4

(3) CH **(4)** CH_2

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54. The molar conductances of $NaCl$, HCl and CH_3COONa at infinite dilution are 126.45, 426.16 and $91.0\ S\ cm^2\ mol^{-1}$ respectively. The molar conductance of CH_3COOH at infinite dilution is. Choose the right option for your answer.

(1) $698.28\ S\ cm^2\ mol^{-1}$ **(2)** $540.48\ S\ cm^2\ mol^{-1}$

(3) $201.28\ S\ cm^2\ mol^{-1}$ **(4)** $390.71\ S\ cm^2\ mol^{-1}$

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55. The molar conductivity of $0.007\ M$ acetic acid is $20\ S\ cm^2\ mol^{-1}$. What is the dissociation constant of acetic acid? Choose the correct option.
$\lambda^\circ(\ce{H+}) = 350\ S\ cm^2\ mol^{-1}$, $\lambda^\circ(\ce{CH3COO-}) = 50\ S\ cm^2\ mol^{-1}$

(1) $1.75 \times 10^{-5}\ mol\ L^{-1}$ **(2)** $2.50 \times 10^{-5}\ mol\ L^{-1}$

(3) $1.75 \times 10^{-4}\ mol\ L^{-1}$ **(4)** $2.50 \times 10^{-4}\ mol\ L^{-1}$

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56. A particular station of All India Radio, New Delhi, broadcasts on a frequency of 1368 kHz (kilohertz). The wavelength of the electromagnetic radiation emitted by the transmitter is: [Speed of light, $c = 3 \times 10^8$ m s^{-1}]

(1) 2192 m **(2)** 21.92 cm

(3) 219.3 m **(4)** 219.2 m

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57. Tritium, a radioactive isotope of hydrogen, emits which of the following particles?

(1) Gamma (γ) **(2)** Neutron (n)

(3) Beta (β^-) **(4)** Alpha (α)

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58. From the following pairs of ions, which one is NOT an iso-electronic pair?

(1) Mn^{2+}, Fe^{3+} **(2)** Fe^{2+}, Mn^{2+}

(3) O^{2-}, F^- **(4)** Na^+, Mg^{2+}

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59. The slope of the Arrhenius plot ($\ln k$ vs $1/T$) of a first-order reaction is -5×10^3 K. The value of E_a of the reaction is (Given $R = 8.314\ J\ K^{-1}mol^{-1}$):

(1) $166\ kJ\ mol^{-1}$ **(2)** $-83\ kJ\ mol^{-1}$

(3) $41.5\ kJ\ mol^{-1}$ **(4)** $83.0\ kJ\ mol^{-1}$

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60. Zr ($Z = 40$) and Hf ($Z = 72$) have similar atomic and ionic radii because of:

(1) lanthanoid contraction **(2)** having similar chemical properties

(3) belonging to same group **(4)** diagonal relationship

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61. From the following pairs of ions, which one is NOT an isoelectronic pair?

(1) Mn^{2+}, Fe^{3+} **(2)** Fe^{2+}, Mn^{2+}

(3) O^{2-}, F^- **(4)** Na^+, Mg^{2+}

62. BF_3 is planar and an electron-deficient compound. The hybridization and number of electrons around the central atom, respectively, are:

(1) sp^2 and 6

(2) sp^3 and 8

(3) sp^3 and 4

(4) sp^3 and 6

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63. Match List-I with List-II.
List-I: (a) PCl_5, (b) SF_6, (c) BrF_5, (d) BF_3
List-II: (i) Square pyramidal, (ii) Trigonal planar, (iii) Octahedral, (iv) Trigonal bipyramidal

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

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

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

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

---

64. The correct sequence of bond enthalpy of the C-X bond is:

(1) $CH_3-F > CH_3-Cl > CH_3-Br > CH_3-I$

(2) $CH_3-Cl > CH_3-F > CH_3-Br > CH_3-I$

(3) $CH_3-F > CH_3-Cl > CH_3-I > CH_3-Br$

(4) $CH_3-I > CH_3-Br > CH_3-Cl > CH_3-F$

---

65. Statement I: Acid strength increases in the order $HF < HCl < HBr < HI$.
Statement II: As the size of the elements F, Cl, Br, I increases down the group, the bond strength of HF, HBr and HI decreases and so the acid strength increases.
In the light of the above statements, choose the correct answer from the options given below:

(1) Statement I is correct but Statement II is false

(2) Statement I is incorrect but Statement II is true

(3) Both Statement I and Statement II are true

(4) Both Statement I and Statement II are false

---

66. Which of the following molecules is non-polar in nature?

(1) $SbCl_5$

(2) NO_2

(3) $POCl_3$

(4) CH_2O

---

67. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not correct about diborane?

(1) There are two 3-centre-2-electron bonds.

(2) The four terminal B–H bonds are two-centre two-electron bonds.

(3) The four terminal hydrogen atoms and the two boron atoms lie in one plane.

(4) Both the boron atoms are sp^2 hybridised.

---

68. Zr (Z = 40) and Hf (Z = 72) have similar atomic and ionic radii because of:

(1) lanthanoid contraction.

(2) having similar chemical properties.

(3) belonging to same group.

(4) diagonal relationship.

---

69. The incorrect statement among the following is:

(1) Lanthanoids are good conductors of heat and electricity.

(2) Actinoids are highly reactive metals, especially when finely divided.

(3) Actinoid contraction is greater for element to element than lanthanoid contraction.

(4) Most of the trivalent lanthanoid ions are colourless in the solid state.

70. Ethylenediaminetetraacetate (EDTA) ion is:

(1) Bidentate ligand with two “N” donor atoms

(2) Tridentate ligand with three “N” donor atoms

(3) Hexadentate ligand with four “O” and two “N” donor atoms

(4) Unidentate ligand

---

71. Match List - I with List - II.

List-I
(a) $[Fe(CN)_6]^{3-}$
(b) $[Fe(H_2O)_6]^{3+}$
(c) $[Fe(CN)_6]^{4-}$
(d) $[Fe(H_2O)_6]^{2+}$

List-II
(i) 5.92 BM
(ii) 0 BM
(iii) 4.90 BM
(iv) 1.73 BM

Choose the correct answer from the options given below.

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

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

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

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

---

72. The major product of the following reaction is:
$(CH_3)_2CH-CH=CH_2 + HBr \xrightarrow{(C_6H_5CO)_2O_2} ?$

(1) $(CH_3)_2CH-CHBr-CH_3$

(2) $(CH_3)_2CBr-CH_2-CH_3$

(3) $(CH_3)_2CH-CH_2-CH_2Br$

(4) $(CH_3)_2CH-CH_2-CH_2-COCH_3$

---

73. The major product formed in the dehydrohalogenation of 2-bromopentane is pent-2-ene. This product formation is based on:

(1) Hofmann Rule

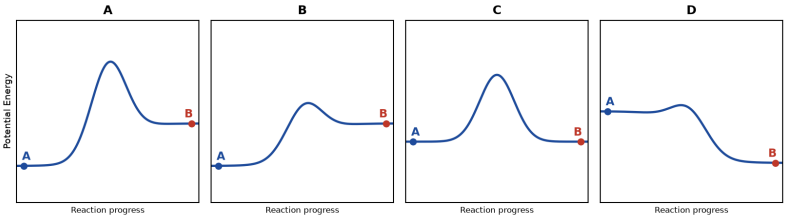
(2) Huckel's Rule

(3) Saytzeff's Rule

(4) Hund's Rule

---

74. For a reaction $A \longrightarrow B$, the enthalpy of reaction is $-4.2\ kJ\ mol^{-1}$ and the enthalpy of activation is $9.6\ kJ\ mol^{-1}$. The correct potential energy profile for the reaction is shown in which option?



(1) PE profile: A at low energy, curve rises to a high peak, B comes down to a level higher than A (endothermic, large barrier).

(2) PE profile: A at low energy, curve rises over a barrier, B settles at a level higher than A (endothermic).

(3) PE profile: A and B at roughly the same energy level with a barrier in between (approximately thermoneutral).

(4) PE profile: A at higher energy, curve rises over a small barrier, B settles at a level lower than A (exothermic, ΔH negative).

75. For the irreversible expansion of an ideal gas under isothermal conditions, the correct option is:

(1) $\Delta U = 0, \Delta S_{total} \neq 0$

(2) $\Delta U \neq 0, \Delta S_{total} = 0$

(3) $\Delta U = 0, \Delta S_{total} = 0$

(4) $\Delta U \neq 0, \Delta S_{total} \neq 0$

---

76. The compound which shows metamerism is

(1) C_3H_6O

(2) $C_4H_{10}O$

(3) C_5H_{12}

(4) C_3H_8O

---

77. What is the IUPAC name of the organic compound formed in the following chemical reaction?

\ce{CH3COCH3 ->[\text{(i) } C2H5MgBr,\ \text{dry ether}][\text{(ii) } H2O,\ H+] Product}

(1) pentan-3-ol

(2) 2-methylbutan-2-ol

(3) 2-methylpropan-2-ol

(4) pentan-2-ol

---

78. What is the IUPAC name of the organic compound formed in the following reaction?
\ce{CH3COCH3 ->[{(i) C2H5MgBr, dry ether}][{(ii) H2O, H+}] Product}

(1) pentan-3-ol

(2) 2-methylbutan-2-ol

(3) 2-methylpropan-2-ol

(4) pentan-2-ol

---

79. The intermediate compound X in the following reaction is:

$$C_6H_5-CH_3 \xrightarrow[CS_2]{CrO_2Cl_2} X \xrightarrow{H_3O^+} C_6H_5-CHO$$

(1) $C_6H_5-CHCl_2$

(2) $C_6H_5-CH_2Cl$

(3) $C_6H_5-CH(OCrOHCl_2)_2$

(4) $C_6H_5-CH(OCOCH_3)_2$

---

80. Match List-I with List-II and choose the correct answer.

List-I:

(a) \ce{C6H6 ->[{CO, HCl}][{Anhy. AlCl3, CuCl}] C6H5-CHO}

(b) $R-CO-CH_3 \xrightarrow{NaOX} R-COO^- + CHX_3$

(c) \ce{R-CH2-OH + R'COOH ->[{Conc. H2SO4}] }

(d) \ce{R-CH2-COOH ->[{(i) X2/Red P}][{(ii) H2O}] }

List-II:

(i) Hell-Volhard-Zelinsky reaction

(ii) Gattermann-Koch reaction

(iii) Haloform reaction

(iv) Esterification

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

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

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

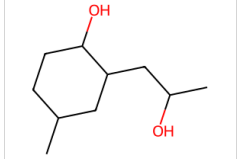
(4) (a)-(iii), (b)-(ii), (c)-(i), (d)-(iv)

81. The product formed in the following reaction is:

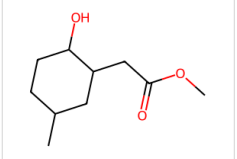
\ce{4-methyl-2-(2-methoxy-2-oxoethyl)cyclohexan-1-one ->[{NaBH4}][{C2H5OH}] ?}

(A cyclohexanone ring bearing a $-CH_2COOCH_3$ methyl-ester side chain and a CH_3 substituent.)

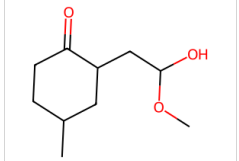
(A)



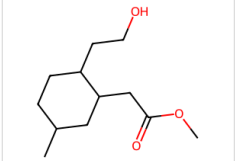
(B)



(C)



(D)



(1) (A)

(2) (B)

(3) (C)

(4) (D)

---

82. Consider the reaction:

$$CH_3CH_2COONa \xrightarrow[\Delta]{NaOH+?} CH_3CH_3 + Na_2CO_3$$

Identify the missing reagent.

(1) CaO

(2) DIBAL-H

(3) B_2H_6

(4) red phosphorus

---

83. Which of the following reactions is a metal displacement reaction? Choose the right option.

(1) $Fe + 2\,HCl \longrightarrow FeCl_2 + H_2\uparrow$

(2) $2\,Pb(NO_3)_2 \xrightarrow{\Delta} 2\,PbO + 4\,NO_2 + O_2\uparrow$

(3) $2\,KClO_3 \xrightarrow{\Delta} 2\,KCl + 3\,O_2$

(4) $Cr_2O_3 + 2\,Al \xrightarrow{\Delta} Al_2O_3 + 2\,Cr$

---

84. Identify the compound that will react with Hinsberg's reagent to give a solid which dissolves in alkali.

(1) $(CH_3)_2CH-NH_2$ (isopropylamine, a primary amine)

(2) an N-methyl branched tertiary amine, $(CH_3)_2N-CH_3$

(3) $(CH_3)_2CH-NO_2$ (2-nitropropane)

(4) $(CH_3)_3N$ (trimethylamine, a tertiary amine)

---

85. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not correct?

(1) Insulin maintains sugar level in the blood of a human body

(2) Ovalbumin is a simple food reserve in egg-white

(3) Blood proteins thrombin and fibrinogen are involved in blood clotting

(4) Denaturation makes the proteins more active

86. Deficiency of red blood cells (pernicious anaemia) is the deficiency disease of

(1) Vitamin B1 **(2)** Vitamin B2

(3) Vitamin B12 **(4)** Vitamin B6

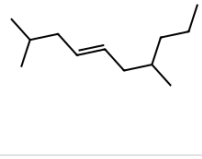
87. An organic compound contains 78% (by wt.) carbon and the remaining percentage of hydrogen. The empirical formula of this compound is: [Atomic wt. of C = 12, H = 1]

(1) CH_3 **(2)** CH_4

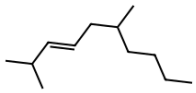
(3) CH **(4)** CH_2

88. Choose the correct skeletal structure for 2,6-dimethyldec-4-ene.

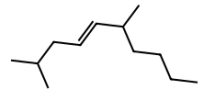
(A)



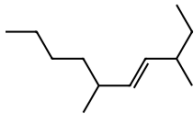
(B)



(C)



(D)



(1) (A) **(2)** (B)

(3) (C) **(4)** (D)

89. What is the IUPAC name of the organic compound formed in the following reaction?

$$CH_3-CO-CH_3 \xrightarrow[\text{(ii) } H_2O/H^+]{\text{(i) } C_2H_5MgBr,\ \text{dry ether}} \text{Product}$$

(1) pentan-3-ol **(2)** 2-methylbutan-2-ol

(3) 2-methylpropan-2-ol **(4)** pentan-2-ol

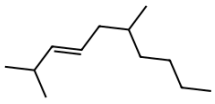
90. The dihedral angle of the least stable conformer of ethane is:

(1) 60° **(2)** 0°

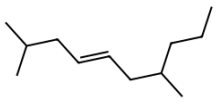
(3) 120° **(4)** 180°

91. Which of the following is the correct structure of 2,6-dimethyldec-4-ene?

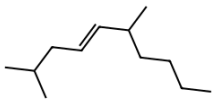
(A)



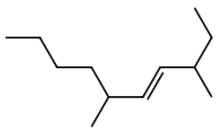
(B)



(C)



(D)



(1) (A)

(2) (B)

(3) (C)

(4) (D)

92. Identify the missing reagent/chemical in the reaction: $CH_3CH_2COONa \xrightarrow[\Delta]{NaOH,\ ?} CH_3CH_3 + Na_2CO_3$

(1) CaO

(2) DIBAL-H

(3) B_2H_6

(4) Red Phosphorus

Biology · 90 Qs

93. A typical angiosperm embryo sac at maturity is

(1) 7-nucleate and 7-celled

(2) 8-nucleate and 8-celled

(3) 8-nucleate and 7-celled

(4) 7-nucleate and 8-celled

94. In some members of which of the following pairs of families, pollen grains retain their viability for months after release ?

(1) Poaceae ; Solanaceae

(2) Rosaceae ; Leguminosae

(3) Poaceae ; Rosaceae

(4) Poaceae ; Leguminosae

95. The term used for transfer of pollen grains from anthers of one plant to stigma of a different plant which, during pollination, brings genetically different types of pollen grains to stigma, is:

(1) Chasmogamy

(2) Cleistogamy

(3) Xenogamy

(4) Geitonogamy

96. [NEET 2019 · NEET 2019 Odisha · NEET 2021 · ReNEET 2026] Which of the following statements is incorrect?

(1) Morels and truffles are edible delicacies.

(2) Claviceps is a source of many alkaloids and LSD.

(3) Conidia are produced exogenously and ascospores endogenously.

(4) Yeasts have filamentous bodies with long thread-like hyphae.

97. [NEET 2017 · NEET 2018 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 1] Which of the following statements is correct

(1) Lichens do not grow in polluted areas.
(2) Algal component of lichens is called mycobiont.
(3) Fungal component of lichens is called phycobiont
(4) Lichens are not good pollution indicators.

98. Which of the following secretes the hormone, relaxin, during the later phase of pregnancy?

(1) Foetus
(2) Uterus
(3) Graafian follicle
(4) Corpus luteum

99. Receptors for sperm binding in mammals are present on

(1) Perivitelline space
(2) Zona pellucida
(3) Corona radiata
(4) Vitelline membrane

100. Which of these is not an important component of initiation of parturition in humans?

(1) Release of Oxytocin
(2) Release of Prolactin
(3) Increase in estrogen and progesterone ratio
(4) Synthesis of prostaglandins

101. Which of the following algae produce Carrageen?

(1) Red Algae
(2) Blue-Green Algae
(3) Green Algae
(4) Brown Algae

102. Which of the following algae contains mannitol as reserve food material?

(1) Volvox
(2) Ulothrix
(3) Ectocarpus
(4) Gracilaria

103. Which of the following plants is monoecious?

(1) Marchantia polymorpha
(2) Cycas circinalis
(3) Carica papaya
(4) Chara

104. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2] Which of the following statements is true?

(1) Most algal genera are diplontic
(2) Most bryophytes do not have haplo-diplontic life cycle
(3) All pteridophytes exhibit haplo-diplontic pattern
(4) Seed bearing plants follow haplontic pattern

105. Gemmae are present in:

(1) Some Gymnosperms
(2) Some Liverworts
(3) Mosses
(4) Pteridophytes

106. Genera like Selaginella and Salvinia produce two kinds of spores. Such plants are known as:

(1) Homosporous
(2) Heterosporous
(3) Homosorus
(4) Heterosorus

107. Which one of the following is an example of Hormone releasing IUD?

(1) Cu 7

(2) Multiload 375

(3) CuT

(4) LNG 20

108. Match list I with list II.

List I
(a) Vaults
(b) IUDs
(c) Vasectomy
(d) Tubectomy

List II
(i) Entry of sperm through Cervix is blocked
(ii) Removal of Vas deferens
(iii) Phagocytosis of sperms within the Uterus
(iv) Removal of fallopian tube

Choose the correct answer from the options given below.

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

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

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

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

109. Match List I with List II.

List I
(a) Metamerism
(b) Canal system
(c) Comb plates
(d) Cnidoblasts

List II
(i) Coelenterata
(ii) Ctenophora
(iii) Annelida
(iv) Porifera

Choose the correct option from those given below.

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

(2) (a)-(iv); (b)-(i); (c)-(ii); (d)-(iii)

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

(4) (a)-(iii); (b)-(iv); (c)-(i); (d)-(ii)

110. Read the following statements.

Statements:
(a) Metagenesis is observed in Helminths.
(b) Echinoderms are triploblastic and coelomate animals.
(c) Round worms have organ-system level of body organization.
(d) Comb plates present in ctenophores help in digestion.
(e) Water vascular system is characteristic of Echinoderms.

Choose the correct answer from the options given below.

(1) (a), (d) and (e) are correct
(2) (b), (c) and (e) are correct
(3) (c), (d) and (e) are correct
(4) (a), (b) and (c) are correct

111. Persons with "AB" blood group are called as "Universal recipients". This is due to:

(1) Presence of antibodies, anti-A and anti-B, on RBCs
(2) Absence of antibodies, anti-A and anti-B, in plasma
(3) Absence of antigens A and B on the surface of RBCs
(4) Absence of antigens A and B in plasma

112. The production of gametes by the parents, the formation of zygotes, the F1 and F2 plants, can be understood using

(1) Pie diagram
(2) A pyramid diagram
(3) Punnet square
(4) Wenn diagram

113. The production of gametes by the parents, formation of zygotes, the F1 and F2 plants can be understood from a diagram called

(1) Punnett square
(2) Net square
(3) Bullet square
(4) Punch square

114. In a cross between a male and female, both heterozygous for sickle cell anaemia gene, what percentage of the progeny will be diseased?

(1) 25%
(2) 100%
(3) 50%
(4) 75%

115. What is the role of RNA polymerase III in the process of transcription in eukaryotes?

(1) Transcribes precursor of mRNA
(2) Transcribes only snRNAs
(3) Transcribes rRNAs (28S, 18S and 5.8S)
(4) Transcribes tRNA, 5s rRNA and snRNA

116. Which is the "Only enzyme" that has "Capability" to catalyse Initiation, Elongation and Termination in the process of transcription in prokaryotes?

(1) DNA Ligase
(2) DNase
(3) DNA dependent DNA polymerase
(4) DNA dependent RNA polymerase

117. Complete the flow chart on central dogma.

(a) ____
(b) ____
(c) ____
(d) ____

(The flow chart shows DNA, with a self-directed arrow (a) back to DNA, an arrow (b) from DNA to RNA, an arrow (c) from RNA to (d).)

a. (a)-Replication; (b)-Transcription; (c)-Translation; (d)-Protein
b. (a)-Transduction; (b)-Translation; (c)-Replication; (d)-Protein
c. (a)-Replication; (b)-Transcription; (c)-Transduction; (d)-Protein
d. (a)-Translation; (b)-Replication; (c)-Transcription; (d)-Transduction

(1) -Replication; (b)-Transcription; (c)-Translation; (d)-Protein

(2) -Transduction; (b)-Translation; (c)-Replication; (d)-Protein

(3) -Replication; (b)-Transcription; (c)-Transduction; (d)-Protein

(4) -Translation; (b)-Replication; (c)-Transcription; (d)-Transduction

---

118. If Adenine makes 30% of the DNA molecule, what will be the percentage of Thymine, Guanine and Cytosine in it?

(1) T : 30; G : 20; C : 20

(2) T : 20; G : 25; C : 25

(3) T : 20; G : 30; C : 20

(4) T : 20; G : 20; C : 30

---

119. Identify the correct statement.

a. The coding strand in a transcription unit is copied to an mRNA
b. Split gene arrangement is characteristic of prokaryotes
c. In capping, methyl guanosine triphosphate is added to the 3' end of hnRNA.
d. RNA polymerase binds with Rho factor to terminate the process of transcription in bacteria.

(1) The coding strand in a transcription unit is copied to an mRNA

(2) Split gene arrangement is characteristic of prokaryotes

(3) In capping, methyl guanosine triphosphate is added to the 3' end of hnRNA.

(4) RNA polymerase binds with Rho factor to terminate the process of transcription in bacteria.

---

120. DNA fingerprinting involves identifying differences in some specific regions in DNA sequence, called as:

(1) Single nucleotides

(2) Polymorphic DNA

(3) Satellite DNA

(4) Repetitive DNA

---

121. Which of the following RNAs is not required for the synthesis of protein?

(1) rRNA

(2) siRNA

(3) mRNA

(4) tRNA

---

122. Match the floral formulae in List I with the families in List II.

List I (Floral formula)
(a) % ♂ K(5) C1+2+(2) A(9)+1 G1
(b) ⊕ ♂ K(5) C(5) A5 G(2)
(c) ⊕ ♂ P(3+3) A(3+3) G(3)
(d) ⊕ ♂ K2+2 C4 A2+4 G(2)

List II (Family)
(i) Brassicaceae
(ii) Liliaceae
(iii) Fabaceae
(iv) Solanaceae

Choose the correct answer from the options given below.

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

(2) (a)-(iv); (b)-(ii); (c)-(i); (d)-(iii)

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

(4) (a)-(i); (b)-(ii); (c)-(iii); (d)-(iv)

---

123. Diadelphous stamens are found in:

(1) Pea

(2) China rose and citrus

(3) China rose

(4) Citrus

---

124. Match List-I with List-II.

List-I:
(a) Cells with active cell division capacity
(b) Tissue having all cells similar in structure and function
(c) Tissue having different type of cells
(d) Dead cells with highly thickened walls and narrow lumen

List-II:
(i) Vascular Tissues
(ii) Meristematic tissues
(iii) Sclereids
(iv) Simple Tissue

Choose the correct answer:

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

(2) (a)-(iii); (b)-(ii); (c)-(iv); (d)-(i)

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

(4) (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i)

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125. (Out of syllabus but asked in last 3 years) Match List-I with List-II.

List-I:
(a) Lenticels
(b) Cork cambium
(c) Secondary cortex
(d) Cork

List-II:
(i) Phellogen
(ii) Suberin deposition
(iii) Exchange of gases
(iv) Phelloderm

Choose the correct answer:

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

(2) (a)-(iv); (b)-(ii); (c)-(i); (d)-(iii)

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

(4) (a)-(iii); (b)-(i); (c)-(iv); (d)-(ii)

126. (Out of syllabus but asked in last 3 years) Select the correct pair.

(1) Cells of medullary rays that form part of cambial ring - Interfascicular cambium

(2) Loose parenchyma cells rupturing the epidermis and forming a lens-shaped opening in bark - Spongy parenchyma

(3) Large colorless empty cells in the epidermis of grass leaves - Subsidiary cells

(4) In dicot leaves, vascular bundles are surrounded by large thick-walled cells - Conjunctive tissue

127. The factor that leads to Founder effect in a population is:

(1) Mutation

(2) Genetic drift

(3) Natural selection

(4) Genetic recombination

128. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not true ?

(1) Analogous structures are a result of convergent evolution

(2) Sweet potato and potato is an example of analogy

(3) Homology indicates common ancestry

(4) Flippers of penguins and dolphins are a pair of homologous organs

129. Match list I with list II.
List I | List II
(a) Adaptive radiation | (i) Selection of resistant varieties due to excessive use of herbicides and pesticides
(b) Convergent evolution | (ii) Bones of forelimbs in Man and Whale
(c) Divergent evolution | (iii) Wings of butterfly and birds
(d) Evolution by anthropogenic action | (iv) Darwin Finches
Choose the correct answer from the options given below

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

(2) (a)-(i); (b)-(iv); (c)-(iii); (d)-(ii)

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

(4) (a)-(iii); (b)-(ii); (c)-(i); (d)-(iv)

130. Now a days it is possible to detect the mutated gene causing cancer by allowing radioactive probe to hybridise its complementary DNA in a clone of cells, followed by its detection using autoradiography because:

(1) mutated gene does not appear on a Photographic film as the probe has no complementarity with it

(2) mutated gene does not appear on Photographic film as the probe has complementarity with it

(3) mutated gene partially appears on a photographic film

(4) mutated gene completely and clearly appears on a photographic film.

131. Chronic auto immune disorder affecting neuromuscular junction leading to fatigue, weakening and paralysis of skeletal muscle is called as:

(1) Myasthenia gravis

(2) Gout

(3) Arthritis

(4) Muscular dystrophy

132. Match list I with list II.

List I
(a) Filariasis
(b) Amoebiasis
(c) Pneumonia
(d) Ringworm

List II
(i) Haemophilus influenzae
(ii) Trichophyton
(iii) Wuchereria bancrofti
(iv) Entamoeba histolytica

(1) - (i); (b) - (ii); (c) - (iv);(d) - (iii)

(2) - (ii); (b) - (iii); (c) - (i);(d) - (iv)

(3) - (iv); (b) - (i); (c) - (iii);(d) - (ii)

(4) - (iii); (b) - (iv); (c) - (i);(d) - (ii)

133. Which of the following statements wrongly represents the nature of smooth muscle?

(a) Communication among the cells is performed by intercalated discs
(b) These muscles are present in the wall of blood vessels
(c) These muscle have no striations
(d) They are involuntary muscles

Choose the correct answer:

(1) Communication among the cells is performed by intercalated discs

(2) These muscles are present in the wall of blood vessels

(3) These muscle have no striations

(4) They are involuntary muscles

134. Identify the types of cell junctions that help to stop the leakage of the substances across a tissue and facilitation of communication with neighbouring cells via rapid transfer of ions and molecules

(1) Adhering junctions and Tight junctions, respectively

(2) Adhering junctions and Gap junctions, respectively

(3) Gap junctions and Adhering junctions, respectively

(4) Tight junctions and Gap junctions, respectively

135. Following are the statements about prostomium of earthworm.

(a) It serves as a covering for mouth
(b) It helps to open cracks in the soil into which it can crawl
(c) It is one of the sensory structures
(d) It is the first body segment

Choose the correct answer from the options given below

(Out of syllabus but asked in last 3 years)

(1) a **(2)** b

(3) c **(4)** d

---

136. Which of the following characteristics is incorrect with respect to cockroach?

(Out of syllabus but asked in last 3 years)

(1) In females, 7th-9th sterna together form a genital pouch

(2) 10th abdominal segment in both sexes, bears a pair of anal cerci

(3) A ring of gastric caeca is present at the junction of midgut and hind gut

(4) Hypopharynx lies within the cavity enclosed by the mouth parts.

---

137. Match List-I with List-II:

List I
(a) Cristae
(b) Thylakoid
(c) Centromere
(d) Cisternae

List II
(i) Primary constriction in chromosome
(ii) Disc-shaped sacs in Golgi apparatus
(iii) Infoldings in mitochondria
(iv) Flattened membranous sacs in stroma of plastids

Choose the correct answer from the options given below:

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

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

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138. The organelles that are included in the endomembrane system are

(1) Golgi complex, Mitochondria, Ribosomes and Lysosomes

(2) Golgi complex, Endoplasmic reticulum, Mitochondria and Lysosomes

(3) Endoplasmic reticulum, Mitochondria, Ribosomes and Lysosomes

(4) Endoplasmic reticulum, Golgi complex, Lysosomes and Vacuoles

139. [NEET 2016 Phase 1 · NEET 2017 · NEET 2019 · NEET 2019 Odisha · NEET 2020 · NEET 2021 · NEET 2023 Phase 2]
Which of the following statements is not correct?

(1) Lysosomes have numerous hydrolytic enzymes

(2) The hydrolytic enzymes of lysosomes are active under acidic pH

(3) Lysosomes are membrane bound structures

(4) Lysosomes are formed by the process of packaging in the endoplasmic reticulum

140. Match list I with list II.
List I (Microorganism) — List II (Product):
(a) Aspergillus niger
(b) Acetobacter aceti
(c) Clostridium butylicum
(d) Lactobacillus
(i) Acetic Acid
(ii) Lactic Acid
(iii) Citric Acid
(iv) Butyric Acid

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

(2) (a)-(iv); (b)-(ii); (c)-(i); (d)-(iii)

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

(4) (a)-(i); (b)-(ii); (c)-(iii); (d)-(iv)

141. Match list I with list II.
List I: (a) Protein; (b) Unsaturated fatty acid; (c) Nucleic acid; (d) Polysaccharide
List II: (i) C=C double bonds; (ii) Phosphodiester bonds; (iii) Glycosidic bonds; (iv) Peptide bonds

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

(2) (a)-(iv); (b)-(iii); (c)-(i); (d)-(ii)

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

(4) (a)-(i); (b)-(iv); (c)-(iii); (d)-(ii)

142. Following are the statements with reference to 'lipids'.
(a) Lipids having only single bonds are called unsaturated fatty acids.
(b) Lecithin is a phospholipid.
(c) Trihydroxy propane is glycerol.
(d) Palmitic acid has 20 carbon atoms including carboxyl carbon.
(e) Arachidonic acid has 16 carbon atoms.
Choose the correct answer from the options given below

(1) and (c) only

(2) and (e) only

(3) and (b) only

(4) and (d) only

143. Identify the incorrect pair.

(1) Lectins - Concanavalin A

(2) Drugs - Ricin

(3) Alkaloids - Codeine

(4) Toxin - Abrin

144. Which of the following are not secondary metabolites in plants?

(1) Vinblastin, curcumin

(2) Rubber, gums

(3) Morphine, codeine

(4) Amino acids, glucose

145. Which of the following is a correct sequence of steps in a PCR (Polymerase Chain Reaction) ?

(1) Extension, Denaturation, Annealing

(2) Annealing, Denaturation, Extension

(3) Denaturation, Annealing, Extension

(4) Denaturation, Extension, Annealing

---

146. Which of the following is not an application of PCR (Polymerase Chain Reaction)

(1) Purification of isolated protein

(2) Detection of gene mutation

(3) Molecular diagnosis

(4) Gene amplification

---

147. Plasmid pBR322 has PsI restriction enzyme site within gene ampR that confers ampicillin resistance. If this enzyme is used for inserting a gene for β-galactoside production and the recombinant plasmid is inserted in a E.coli strain

(1) it will lead to lysis of host cell.

(2) it will be able to produce a novel protein with dual ability

(3) it will not be able to confer ampicillin resistance to the host cell

(4) the transformed cells will have the ability to resist ampicillin as well as produce β-galactoside

---

148. A specific recognition sequence identified by endonucleases to make cuts at specific positions within the DNA is:

(1) Palindromic Nucleotide sequences

(2) Poly(A) tail sequences

(3) Degenerate primer sequence

(4) Okazaki sequences

---

149. During the purification process for recombinant DNA technology, addition of chilled ethanol precipitates out

(1) RNA

(2) DNA

(3) Histones

(4) Polysaccharides

---

150. [NEET 2019 · NEET 2019 Odisha · NEET 2021 · ReNEET 2026] Which or the following statements is incorrect?

(1) Most commonly used bio-reactors are of stirring type.

(2) Bio-reactors are used to produce small scale bacterial cultures.

(3) Bio-reactors have an agitator system, an oxygen delivery system and foam control system.

(4) A bio-reactor provides optimal growth conditions for achieving the desired product.

---

151. With regard to insulin choose correct options.
(a) C-peptide is not present in mature insulin.
(b) The insulin produced by rDNA technology has C-peptide.
(c) The pro-insulin has C-peptide.
(d) A-peptide and B-peptide of insulin are interconnected by disulphide bridges
Choose the correct answer from the options given below.

(1) (a), (c) and (d) only

(2) and (d) only

(3) and (d) only

(4) and (c) only

---

152. When gene targetting involving gene amplification is attempted in an individual's tissue to treat disease, it is known as:

(1) Molecular diagnosis

(2) Safety testing

(3) Biopiracy

(4) Gene therapy

153. The Adenosine deaminase deficiency results into:

(1) Digestive disorder

(2) Addison's disease

(3) Dysfunction of Immune system

(4) Parkinson's disease

154. For effective treatment of the disease, early diagnosis and understanding its pathophysiology is very important. Which of the following molecular diagnostic techniques is very useful for early detection?

(1) ELISA Technique

(2) Hybridization Technique

(3) Western Blotting Technique

(4) Southern Blotting Technique

155. When the centromere is situated in the middle of two equal arms of chromosomes, the chromosome is referred as:

(1) Sub-metacentric

(2) Acrocentric

(3) Metacentric

(4) Telocentric

156. Which of the following stages of meiosis involves division of centromere?

(1) Metaphase I

(2) Metaphase II

(3) Anaphase II

(4) Telophase

157. The fruit fly has 8 chromosomes (2n) in each cell. During interphase of Mitosis if the number of chromosomes at G1 phase is 8, what would be the number of chromosomes after S phase?

(1) 4

(2) 32

(3) 8

(4) 16

158. The centriole undergoes duplication during:

(1) Metaphase

(2) G2 phase

(3) S-phase

(4) Prophase

159. Which stage of meiotic prophase shows terminalisation of chiasmata as its distinctive feature?

(1) Diakinesis

(2) Pachytene

(3) Leptotene

(4) Zygotene

160. Match List-I with List-II:

List-I
(a) S phase
(b) G2 phase
(c) Quiescent stage
(d) G1 phase

List-II
(i) Proteins are synthesized
(ii) Inactive phase
(iii) Interval between mitosis and initiation of DNA replication
(iv) DNA replication

Choose the correct answer from the options given below:

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

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

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

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

---

161. Amensalism can be represented as :

(1) Species A (-) ; Species B (-)

(2) Species A (+) ; Species B (0)

(3) Species A (-) ; Species B (0)

(4) Species A (+) ; Species B (+)

---

162. Inspite of interspecific competition in nature, which mechanism the competing species might have evolved for their survival?

(1) Mutualism

(2) Predation

(3) Resource partitioning

(4) Competitive release

---

163. In the exponential growth equation Nt = N0e^rt, e represents:

(1) The base of natural logarithms

(2) The base of geometric logarithms

(3) The base of number logarithms

(4) The base of exponential logarithms

---

164. (Out of NEET 2026 syllabus — rationalised 'adaptations' topic)

Given below are two statements labelled as Assertion (A) and Reason (R):

Assertion (A): A person goes to high altitude and experiences 'altitude sickness' with symptoms like breathing difficulty and heart palpitations.
Reason (R): Due to low atmospheric pressure at high altitude, the body does not get sufficient oxygen.

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

(1) is true but (R) is false

(2) is false but (R) is true

(3) Both (A) and (R) are true and (R) is the correct explanation of (A)

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

---

165. (Out of NEET 2026 syllabus — rationalised 'adaptations' topic)

Match List I with List II:

List I
A. Allen's Rule
B. Physiological adaptation
C. Behavioural adaptation
D. Biochemical adaptation

List II
I. Kangaroo rat
II. Desert lizard
III. Marine fish at depth
IV. Polar seal

Choose the correct answer from the options given below:

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

(2) (a)- (iv); (b) - (iii); (c) - (ii); (d) - (i)

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

(4) (a)- (iv); (b) - (i); (c) - (iii); (d) - (ii)

---

166. The first stable product of CO_2 fixation in sorghum is:

(1) Succinic acid

(2) Phosphoglyceric acid

(3) Pyruvic acid

(4) Oxaloacetic acid

---

167. [NEET 2019 · NEET 2019 Odisha · NEET 2021 · ReNEET 2026] Which out of the following statements is incorrect?

(1) Both ATP and NADPH + H+ are synthesised during non-cyclic photophosphorylation.

(2) Stroma lamellae lack PS II and NADP reductase

(3) Grana lamellae have both PS I and PS II

(4) Cyclic photophosphorylation involves both PS I and PS II

---

168. In the equation GPP - R = NPP R represents

(1) Environment factor

(2) Respiration losses

(3) Radiant energy

(4) Retardation factor

---

169. The amount of nutrients such as carbon, nitrogen, phosphorus and calcium present in the soil at any given time, is referred to as the

(1) Standing state

(2) Standing crop

(3) Climax

(4) Climax community

---

170. The plant hormone used to destroy weeds in a field is

(1) 2, 4-D

(2) IBA

(3) IAA

(4) NAA

171. Plants follow different pathways in response to environment or phases of life to form different kinds of structures. This ability is called

(1) Plasticity

(2) Maturity

(3) Elasticity

(4) Flexibility

---

172. The partial pressures (in mm Hg) of oxygen (O2) and carbon dioxide. (CO2) at alveoli (the site of diffusion) are:

(1) pO2 = 95 and pCO2 = 40

(2) pO2 = 159 and pCO2 = 0.3

(3) pO2 = 104 and pCO2 = 40

(4) pO2 = 40 and pCO2 = 45

---

173. Given below are two statements:

Assertion (A): A person goes to high altitude and experiences “Altitude Sickness” with symptoms like breathing difficulty and heart palpitations.

Reason (R): Due to low atmospheric pressure at high altitude, the body does not get sufficient oxygen.

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

(1) Both (A) and (R) are true and (R) is the correct explanation of (A)

(2) Both (A) and (R) are true but (R) is not the correct explanation of (A)

(3) is true but (R) is false

(4) is false but (R) is true

---

174. Assertion (A): A person goes to high altitude and experiences 'altitude sickness' with symptoms like breathing difficulty and heart palpitations.

Reason (R): Due to low atmospheric pressure at high altitude, the body does not get sufficient oxygen.

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

(1) is true but (R) is false

(2) is false but (R) is true

(3) Both (A) and (R) are true and (R) is the correct explanation of (A)

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

---

175. Select the favourable conditions required for the formation of oxyhaemoglobin at the alveoli.

(1) High pO2, high pCO2, less H+, higher temperature

(2) Low pO2, low pCO2, more H+, higher temperature

(3) High pO2, low pCO2, less H+, lower temperature

(4) Low pO2, high pCO2, more H+, higher temperature

---

176. Erythropoietin hormone which stimulates R.B.C. formation is produced by

(1) The cells of bone marrow

(2) Juxtaglomerular cells of the kidney

(3) Alpha cells of pancreas

(4) The cells of rostral adenohypophysis

---

177. Which enzyme is responsible for the conversion of inactive fibrinogens to fibrins?

(1) Epinephrine

(2) Thrombokinase

(3) Thrombin

(4) Renin

178. Match List I with List II.

List I
(a) Scapula
(b) Cranium
(c) Sternum
(d) Vertebral column

List II
(i) Cartilaginous joints
(ii) Flat bones
(iii) Fibrous joints
(iv) Triangular flat bone

Choose the correct answer from the options given below:

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

(2) (a)-(iv); (b)-(iii); (c)-(ii); (d)-(i)

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

(4) (a)-(ii); (b)-(iii); (c)-(iv); (d)-(i)

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179. During the muscular contraction which of the following events occur?
(a) 'H' zone disappears
(b) 'A' band widens
(c) 'I' band reduces in width
(d) Myosine hydrolyzes ATP, releasing the ADP and Pi.
(e) Z-lines attached to actins are pulled inwards.

Choose the correct answer from the options given below.

(1) ,(c),(d),(e) only

(2) ,(d),(e),(a) only

(3) ,(c),(d),(e) only

(4) ,(b),(c),(d) only

---

180. Which of the following statements wrongly represents the nature of smooth muscle?

(1) Communication among the cells is performed by intercalated discs

(2) These muscles are present in the wall of blood vessels

(3) These muscle have no striations

(4) They are involuntary muscles

---

181. (Out of NEET 2026 syllabus — rationalised 'adaptations' topic)

Given below are two statements labelled as Assertion (A) and Reason (R):

Assertion (A): A person goes to high altitude and experiences 'altitude sickness' with symptoms like breathing difficulty and heart palpitations.
Reason (R): Due to low atmospheric pressure at high altitude, the body does not get sufficient oxygen.

In the light of the above statements, choose the correct answer from the options given below: (NEET 2021)

(1) is true but (R) is false

(2) is false but (R) is true

(3) Both (A) and (R) are true and (R) is the correct explanation of (A)

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

---

182. (Out of NEET 2026 syllabus — rationalised 'adaptations' topic)

Match List I with List II:

List I
A. Allen's Rule
B. Physiological adaptation
C. Behavioural adaptation
D. Biochemical adaptation

List II
I. Kangaroo rat
II. Desert lizard
III. Marine fish at depth
IV. Polar seal

Choose the correct answer from the options given below: (NEET 2021)

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

(2) (a)- (iv); (b) - (iii); (c) - (ii); (d) - (i)

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

(4) (a)- (iv); (b) - (i); (c) - (iii); (d) - (ii)

Answer Key

1.D	**2**.B	**3**.D	**4**.B	**5**.D	**6**.C	**7**.A	**8**.D	**9**.D	**10**.B	**11**.D
12.B	**13**.D	**14**.B	**15**.B	**16**.D	**17**.D	**18**.A	**19**.B	**20**.C	**21**.D	**22**.B
23.B	**24**.C	**25**.B	**26**.A	**27**.B	**28**.C	**29**.B	**30**.B	**31**.B	**32**.C	**33**.D
34.B	**35**.C	**36**.D	**37**.A	**38**.C	**39**.C	**40**.D	**41**.D	**42**.C	**43**.B	**44**.D
45.A	**46**.A	**47**.A	**48**.B	**49**.D	**50**.D	**51**.C	**52**.A	**53**.A	**54**.D	**55**.A
56.C	**57**.C	**58**.B	**59**.C	**60**.A	**61**.B	**62**.A	**63**.C	**64**.A	**65**.C	**66**.A
67.D	**68**.A	**69**.D	**70**.C	**71**.B	**72**.C	**73**.C	**74**.D	**75**.A	**76**.B	**77**.B
78.B	**79**.C	**80**.B	**81**.B	**82**.A	**83**.D	**84**.A	**85**.D	**86**.C	**87**.A	**88**.C
89.B	**90**.B	**91**.C	**92**.A	**93**.C	**94**.B	**95**.C	**96**.D	**97**.A	**98**.D	**99**.B
100.B	**101**.A	**102**.C	**103**.D	**104**.C	**105**.B	**106**.B	**107**.D	**108**.D	**109**.A	**110**.B
111.B	**112**.C	**113**.A	**114**.A	**115**.D	**116**.D	**117**.A	**118**.A	**119**.D	**120**.D	**121**.B
122.C	**123**.A	**124**.C	**125**.D	**126**.A	**127**.B	**128**.D	**129**.C	**130**.A	**131**.A	**132**.D
133.A	**134**.D	**135**.C	**136**.C	**137**.A	**138**.D	**139**.D	**140**.C	**141**.C	**142**.A	**143**.B
144.D	**145**.C	**146**.A	**147**.C	**148**.A	**149**.B	**150**.B	**151**.A	**152**.D	**153**.C	**154**.A
155.C	**156**.C	**157**.C	**158**.C	**159**.A	**160**.A	**161**.C	**162**.C	**163**.A	**164**.C	**165**.A
166.D	**167**.D	**168**.B	**169**.A	**170**.A	**171**.A	**172**.C	**173**.A	**174**.C	**175**.C	**176**.B
177.C	**178**.B	**179**.C	**180**.A	**181**.C	**182**.A					