MHT CET 2025 PCB Apr 17 Shift 2

Question Paper

Conducted by the State Common Entrance Test Cell, Maharashtra

Time Allowed: 180 Minutes **PCB Group** **Maximum Marks: 200**

General Instructions

(i) This is a **memory-based version** of the **MHT CET 2025 PCB Apr 17 Shift 2** (PCB group), conducted by the **State Common Entrance Test Cell, Maharashtra**. The questions were recalled by candidates who appeared in the exam.

(ii) This edition includes **191 of 200 questions**: **44 Physics**, **47 Chemistry**, **100 Biology**. Original subject question numbers are retained; Physics questions 14, 23, 27, 36, 38, 50; Chemistry questions 63, 74, 100 are unavailable.

(iii) The full PCB exam has **200 questions** and **200 marks**: Section 1 - **Physics and Chemistry** (50 questions each, 100 marks), followed by Section 2 - **Biology** (100 questions, 100 marks). Each section lasts **90 minutes**.

(iv) Candidates cannot switch between sections. Section 1 closes automatically after its 90 minutes, and Section 2 follows.

(v) All questions in the exam are compulsory. Each multiple choice question offers **four options**, of which **exactly one is correct**.

(vi) Each correct answer earns **1 mark**. There is **no negative marking**; unanswered questions carry 0 marks.

(vii) Use rough sheets for calculations and rough work. Calculators, log tables and electronic gadgets are not allowed.

Section 1 · Physics · 44 available questions

1. The period of revolution of planet A around the sun is 27 times that of planet B. The distance of planet A from the sun is how many times greater than that of B from the sun?

(A) 8 (B) 6
(C) 4 (D) 3

2. Identify the WRONG statement from the following. In an intrinsic semiconductor

(A) the number of free electrons increases with temperature.
(B) the number of free electrons is less than that in a conductor.
(C) there are no free electrons at absolute zero temperature.
(D) there are no free electrons at any temperature except absolute zero.

3. Two resistances are connected in two gaps of a meter bridge. The null point is obtained at 20 cm from zero end. A resistance of 15 Ω is connected in series with smaller of the two. The null point shifts to 40 cm. The smaller resistance used in Ω is

(A) 3 (B) 6
(C) 9 (D) 12

4. A flywheel at rest is set into rotation about an axis passing through its centre and perpendicular to its plane, to have an angular velocity of 24 rad/s in 6 second with constant angular acceleration. The total angle made by the flywheel during this interval is

(A) 24 rad (B) 30 rad
(C) 48 rad (D) 72 rad

5. A particle of mass 'm' and charge 'q' is placed at rest in uniform electric field E and then released. The momentum gained by the particle after moving a distance 'y' is $\sqrt{2x}$. Then x is equal to

(A) Eqy (B) $\frac{2Eqy}{m}$
(C) $\sqrt{2mEqy}$ (D) mEqy

6. Two solid spheres of same metal but of mass M and 64 M fall simultaneously through a viscous liquid and their terminal velocities are V and nV respectively then value of n is

(A) 4 (B) 8
(C) 16 (D) 32

7. A body cools from temperature $(3\theta)^\circ$C to $(2\theta)^\circ$C in 10 minute. Then it cools from $(2\theta)^\circ$C to $(\theta_1)^\circ$C in next 10 minute. The room temperature is $(\theta)^\circ$C. Assuming that the Newton's law of cooling is applicable the value of $(\theta_1)^\circ$C is

(A) θ (B) $\frac{5}{4}\theta$
(C) $\frac{4}{3}\theta$ (D) $\frac{3}{2}\theta$

8. At 20°C, the ratio of the density of a fixed mass of an ideal gas to its pressure $\left(\frac{\rho}{P}\right)$ is 'x'. At 100°C, this ratio is

(A) 5 x (B) x
(C) $\frac{373}{293}x$ (D) $\frac{293}{373}x$

9. A beam of photons having incident frequency ν falls a metal plate of work functions W_0, photoelectrons of maximum kinetic energy K are ejected. If frequency of radiation is made four times, the maximum kinetic energy of the ejected photoelectrons will be

(A) $K + h\nu$ (B) $K - 4h\nu$
(C) $K + 5h\nu$ (D) $K + 3h\nu$

10. A wire has mass (0.2 ± 0.002) gram, radius (0.4 ± 0.004) mm and length (6 ± 0.06) cm. The percentage error in the measurement of its density is

(A) 1 % (B) 2 %
(C) 3 % (D) 4 %

11. A parallel plate capacitor with air between the plates has capacitance 9 pF. The separation between the plates becomes thrice and the space between them is filled with a medium of dielectric constant 6. The capacitance becomes 'x' pF. The value of 'x' is

(A) 9 (B) 18
(C) 4.5 (D) 27

12. The equation of trajectory of a projectile is $y = \sqrt{3}x - \frac{g}{8}x^2$ where x, y are in metre and g is in m/s^2. The initial velocity of projectile 'u' is

(A) 2 m/s (B) 4 m/s
(C) 8 m/s (D) 16 m/s

13. Two parallel straight conductors carrying unequal currents in the same direction will

(A) repel each other. (B) attract each other.
(C) neither attract nor repel each other. (D) have rotational motion.

15. Susceptibility of ferromagnetic substance is

(A) 1 (B) -1
(C) > 1 (D) < 1

16. A particle of mass 'm' is performing U.C.M. along a circular path of radius 'r'. Its angular momentum about the axis passing through the centre of the circle and perpendicular to the plane is 'L'. Then kinetic energy of the particle is directly proportional to

(A) $\frac{L^2}{m^2r}$ (B) $\frac{L}{mr^2}$
(C) $\frac{mL}{r}$ (D) $\frac{L^2}{mr^2}$

17. Two whistles A and B have frequencies 660 Hz and 590 Hz respectively. An observer is standing in the middle of the line joining the two sources. Source B and observer are moving towards right with velocity 30 m/s and A is stationary at left side. The number of beats listened by the observer are (Velocity of sound in air = 300 m/s)

(A) 2/s (B) 4/s
(C) 6/s (D) 8/s

18. In the product $\vec{F} = q(\vec{V} \times \vec{B})$, q = charge 1C, $\vec{V} = 2\hat{i} + 4\hat{j} + 6\hat{k}$, $\vec{B} = (B\hat{i} + B\hat{j} + B\hat{k})$ and $\vec{F} = 4\hat{i} - 20\hat{j} + 12\hat{k}$. What will be the complete expression for $\vec{B}$?

(A) $(4\hat{i} + 4\hat{j} - 6\hat{k})$ (B) $(6\hat{i} + 6\hat{j} + 8\hat{k})$
(C) $(-6\hat{i} - 6\hat{j} - 8\hat{k})$ (D) $(-8\hat{i} - 8\hat{j} + 6\hat{k})$

19. A planoconvex lens has the radius of curvature of its spherical surface 25 cm. If the refractive index of a glass is 1.5, then the power of lens is

(A) 0.2 D (B) 2 D
(C) 0.5 D (D) 5 D

20. A Carnot engine with efficiency 40% takes heat from a source at 500 K. To increase the efficiency to 60%, keeping temperature of the sink same, the new temperature of the source will be

(A) 900 K (B) 750 K
(C) 1000 K (D) 450 K

21. An ideal transformer converts 170 V a.c. to 1.70 kV a.c. to transmit a power of 3.4 kW. If primary coil has 500 turns then alternating current in secondary coil is

(A) 2.5 A (B) 1.5 A
(C) 1 A (D) 2 A

22. The excess pressure inside the first soap bubble is three times that inside the second soap bubble. The ratio of volume of the first to that of the second bubble is

(A) 1:27 (B) 9:1
(C) 1:9 (D) 1:3

24. In an ideal gas of density 'ρ', the pressure exerted at a temperature 'T' is 'P'. Then

(A) $P \propto \rho$ (B) $P \propto \frac{1}{\sqrt{\rho}}$
(C) $P \propto \rho^{\circ}$ (D) $P \propto \frac{1}{\rho^2}$

25. The mutual inductance between a primary and secondary circuit is 0.4 H and the resistance in these circuits are 20 Ω and 4 Ω respectively. To produce a current of 0.5 A in the secondary, current in the primary must be changed at the rate of

(A) 0.2 A/s (B) 0.4 A/s
(C) 4 A/s (D) 5 A/s

26. A pipe closed at one end produces a fundamental note of frequency 'ν'. The pipe is cut into two pipes of equal lengths. The fundamental frequencies produced in the two pipes are

(A) $\frac{\nu}{2}, \nu$ (B) $\nu, 2\nu$
(C) $2\nu, \frac{\nu}{2}$ (D) $2\nu, 4\nu$

28. In Young's double slit experiment, a light of wavelength 5000 $\mathring{A}$ is used. A glass plate of refractive index 1.5 and thickness 0.2 mm is introduced in the path of one of the interfering beams. The number of fringes which will shift is

(A) 200 (B) 300
(C) 400 (D) 100

29. Which of the following relations is correct for root means square speed of a gas at temperature T? (m = mass of molecule, K = Boltzmann constant)

(A) $C_{rms} = \sqrt{\frac{3KT}{m}}$ (B) $C_{rms} = \sqrt{\frac{8KT}{\pi m}}$

(C) $C_{rms} = \sqrt{\frac{2KT}{m}}$ (D) $C_{rms} = \sqrt{\frac{KT}{m}}$

30. The instantaneous voltage through a circuit of impedance 10 Ω is $V = 40\sin(50\pi t)$. The effective value of current is

(A) $2\sqrt{2}$ A (B) $4\sqrt{2}$ A

(C) 2 A (D) 4 A

31. A body is suspended from the two light springs separately, the periods of vertical oscillations are T_1 and T_2. The same body is suspended from two springs connected in series first and then in parallel. The periods of oscillations in both cases respectively are

(A) $\sqrt{T_1T_2}, \sqrt{\frac{T_1T_2}{2}}$ (B) $\sqrt{T_1^2+T_2^2}, \frac{T_1T_2}{\sqrt{T_1^2+T_2^2}}$

(C) $\sqrt{\frac{T_1^2+T_2^2}{2}}, \frac{T_1T_2}{2}$ (D) $\sqrt{\frac{T_1^2+T_2^2}{3}}, \frac{2T_1T_2}{T_1^2+T_2^2}$

32. A metal wire is bent in the shape of right angle triangle with sides 3 cm, 4 cm, 5 cm is carrying a current of 1 A. The wire loop is in uniform magnetic field 0.5 T whose direction is parallel to the current in the 5 cm side of the loop. The magnitude of magnetic force on the side 3 cm side will be $\frac{x}{500}$ N. The value of x is

(A) 3 (B) 7

(C) 6 (D) 9

33. A shot put iron ball of mass 3 kg is rolling on a frictionless horizontal surface with velocity 4 m/s. It collides on the free end of an ideal horizontal spring whose other end is fixed to a rigid support. If the spring constant is 32 N/m, the maximum compression produced in the spring will be

(A) $\sqrt{2.5}$ m (B) $\sqrt{1.5}$ m

(C) $\sqrt{7.3}$ m (D) $\sqrt{2.1}$ m

34. The capacity of a parallel plate air capacitor is C_0 and the distance of separation of the plates is d. A dielectric slab of thickness $\frac{4d}{5}$ is introduced between the plates and the new capacity is C. The ratio $C : C_0$ is

(A) 5K : (K + 4) (B) 4K : (K + 5)

(C) (K + 4) : 5K (D) 5K : 4

35. Two radioactive materials A and B have decay constants 6λ and 2λ respectively. If initially they have same number of nuclei, then the ratio of the number of nuclei of A to that of B will be $\frac{1}{e}$ after time

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

(C) $\frac{1}{\lambda}$ (D) $\frac{1}{4\lambda}$

37. Starting with same initial conditions an ideal gas expands from volume V_A to V_B in three different ways. The work done by the gas is 'W_1' if the process is purely adiabatic, 'W_2' if it is purely isobaric and 'W_3' if purely isothermal. Then

(A) $W_1 > W_2 > W_3$ (B) $W_1 < W_2 < W_3$

(C) $W_2 > W_3 > W_1$ (D) $W_2 < W_3 < W_1$

39. A particle starting from extreme position performs S.H.M. The phase difference of the particle between any two successive mean positions is

(A) $\frac{\pi}{4}$ (B) $\frac{\pi}{2}$

(C) π (D) 2π

40. According to Einstein's photoelectric equation, the graph of kinetic energy of the photoelectron emitted from the metal versus the frequency of incident radiation gives a straight line graph whose slope

(A) depends on the nature of the metal only.

(B) depends on the intensity of the incident radiation only.

(C) depends on the nature of the metal and also on the intensity of incident radiation.

(D) is same for all metals and independent of the intensity of the incident radiation.

41. In Young's double slit experiment, the distance of the 4^{th} bright fringe from central band is 3 cm. The distance between slits and screen is 1 m and wavelength of light used is 6000 $\mathring{A}$. The slitwidth is

(A) 80 μm (B) 64 μm

(C) 75 μm (D) 24 μm

42. In L-C-R series resonant circuit, angular frequency at resonance is 'ω'. When the inductance of inductor is made twice and capacitance of the capacitor is made four times, the angular frequency at resonance is 'ω_1'. The ratio of $\omega : \omega_1$ is

(A) $2 : 1$ (B) $2\sqrt{2} : 1$

(C) $1 : \sqrt{2}$ (D) $1 : 2$

43. A tuning fork and a vibrating sonometer wire gives 6 beats per second either with length of the wire 1.0 m or 1.06 m. The frequency of the fork is

(A) 200 Hz (B) 206 Hz

(C) 212 Hz (D) 218 Hz

44. The ratio of energies of photons produced due to transition of electron of hydrogen atom from its (i) second to first energy level and (ii) highest energy level to third level is respectively

(A) 3 : 2 (B) 16 : 3

(C) 27 : 4 (D) 9 : 4

45. In an ammeter, 20 % of main current is passing through the galvanometer. If the resistance of the galvanometer is G, then the shunt resistance in ohm is

(A) $\frac{G}{4}$ (B) $\frac{G}{8}$

(C) $\frac{G}{9}$ (D) $\frac{G}{10}$

46. Two particles 'A' and 'B' perform S.H.M. starting from mean position, with periodic time T and $\frac{3T}{2}$ respectively. The phase difference between the particles when particle 'A' completes one oscillation will be

(A) $\left(\frac{\pi}{4}\right)$ (B) $\left(\frac{\pi}{3}\right)$

(C) $\left(\frac{\pi}{2}\right)$ (D) $\left(\frac{2\pi}{3}\right)$

47. Select the wrong statement in the case of LED.

(A) It emits light only when it is reversed biased.

(B) It emits light only when it is forward biased.

(C) The energy of light emitted is equal to or slightly less than the energy gap of the semi-conductor used.

(D) It is a heavily doped p-n junction.

48. A progressive wave is given by the equation $Y = 0.07\sin(6x - 3t)$ m. The velocity of the wave is (all quantities are in SI units)

(A) 6 m/s (B) 3 m/s

(C) 2 m/s (D) 0.5 m/s

49. A particle carrying a charge equal to 1000 times the charge on an electron, is rotating at one rotation per second in a circular path of radius 0.4 m. The value of the magnetic field produced at the centre will be (in tesla) (μ_0 = permeability of vacuum, e = 1.6×10^{-19} C)

(A) $2\mu_0 \times 10^{-16}$ (B) $\mu_0 \times 10^{-16}$

(C) $\frac{\mu_0}{2} \times 10^{-15}$ (D) $\mu_0 \times 10^{-15}$

51. What mass of H_2 gas is consumed to obtain 21.6 g of elemental boron (Atomic mass of B = 10.8) from BCl_3 and dihydrogen?

(A) 2 g
(B) 4 g
(C) 6 g
(D) 8 g

52. Identify the product when alkyl alkanoate is hydrolysed with dil. HCl obtained when.

(A) Alkanol and Alkanoic acid
(B) Alkanal and Alkanone
(C) Alkanone and Alkanoic acid
(D) Alkanol and Alkanal

53. Identify the correct relationship between pressure (P), density (d), molar mass (M) and Temperature (T) for an ideal gas from the following.

(A) $P = \frac{d \times M \times R}{T}$
(B) $P = \frac{d \times R \times T}{M}$
(C) $P = \frac{M \times R \times T}{d}$
(D) $P = \frac{d \times M \times T}{R}$

54. Which of the following interhalogen compounds is used in the determination of iodine value of an oil?

(A) ICl_3
(B) ICl
(C) IF_3
(D) IF_7

55. Calculate the number of unit cells in 1 cm^3 volume of metal if it forms ccp structure [$a = 3.5 \times 10^{-8}$ cm].

(A) 4.211×10^{22}
(B) 3.281×10^{22}
(C) 1.451×10^{22}
(D) 2.332×10^{22}

56. For the reaction $2A + B \rightarrow A_2B$ find the rate of decrease of [B]

(A) half the rate [A] decreases
(B) same as rate [A] decreases
(C) twice the rate [A] decreases
(D) double the rate of $[A_2B]$ increases

57. Identify the correct decreasing order of thermodynamic stability of complexes from following.

(A) $[Co(NH_3)_6]^{3+} > [Ag(CN)_2]^{-} > [Cu(CN)_4]^{2-}$
(B) $[Co(NH_3)_6]^{3+} > [Cu(CN)_4]^{2-} > [Ag(CN)_2]^{-}$
(C) $[Cu(CN)_4]^{2-} > [Ag(CN)_2]^{-} > [Co(NH_3)_6]^{3+}$
(D) $[Ag(CN)_2]^{-} > [Cu(CN)_4]^{2-} > [Co(NH_3)_6]^{3+}$

58. Identify the monomer used to prepare acrylic glass

(A) Acrylamide
(B) Methylmethacrylate
(C) Butadiene
(D) Vinyl chloride

59. Calculate the change in internal energy of a gas if a gas is compressed adiabatically from 25 dm^3 to 15 dm^3 at constant external pressure of 4 bar.

(A) 30 dm^3 bar
(B) 40 dm^3 bar
(C) 50 dm^3 bar
(D) 56 dm^3 bar

60. Which of the following statement is NOT correct for aromatic compounds?

(A) They contain higher percentage of carbon.
(B) They burn with sooty flame.
(C) They are easily attacked by normal oxidising and reducing agents.
(D) They prefer substitution reactions.

61. Which of the following mixture have the total volume after mixing greater than the sum total volume of components before mixing?

(A) Benzene + toluene
(B) Carbon disulfide + acetone
(C) Phenol + aniline
(D) Chloroform + acetone

62. What is the common name of Benzene-1,2,3-triol?

(A) Phloroglucinol
(B) Pyrogallol
(C) Quinol
(D) Catechol

64. If $E^{\circ}(Cd^{+2}|Cd_{(s)}) = -0.40$ V. What is potential for $Cd_{(s)} \rightarrow Cd^{+2}_{(aq)}(0.01M) + 2e^{-}$ at 298 K?

(A) +0.4592 V
(B) -0.4592 V
(C) +0.3408 V
(D) -0.3408 V

65. Which of the following metals exhibits minimum packing efficiency in its cubic system?

(A) Polonium
(B) Niobium
(C) Silver
(D) Magnesium

66. Identify false statement regarding lithium aluminium hydride?

(A) It is obtained by reaction of lithium hydroxide with aluminium chloride.
(B) It is colourless solid.
(C) It reacts violently with water.
(D) It is used as reducing agent in organic synthesis.

67. What is the total number of donor atoms present in Pentaammineaquacobalt (III) iodide?

(A) 3
(B) 5
(C) 1
(D) 6

68. Which from following is a thermoplastic polymer?

(A) Terylene
(B) Neoprene
(C) Polythene
(D) Bakelite

69. Which from following amines forms corresponding alcohol liberating dinitrogen when treated with mixture of $NaNO_{2(aq)}$ and HCl?

(A) Ethanamine
(B) N-ethylethanamine
(C) Benzenamine
(D) N,N-Dimethylmethanamine

70. Calculate the radius of the second orbit of He^{+}.

(A) 52.9 Pm
(B) 105.8 Pm
(C) 158.7 Pm
(D) 211.6 Pm

71. The depression in freezing point of 0.2 m aqueous solution of an electrolyte is 0.7 K. Calculate its percent degree of dissociation. [K_f for water = 1.86 K kg mol^{-1}; n = 2]

(A) 29 %
(B) 46 %
(C) 60 %
(D) 88 %

72. Identify the name of process so that there is no exchange of heat between system and surroundings.

(A) Isothermal process
(B) Isobaric process
(C) Isochoric process
(D) Adiabatic process

73. Which from following methods of three dimensional representation of molecules uses a long slanting line for $C-C$ single bond?

(A) Fischer projection formula
(B) Sawhorse formula
(C) Newman projection formula
(D) Wedge formula

75. Identify 'A' in the following reaction. A + Chloromethane $\xrightarrow{\text{anhydrous } AlCl_3}$ 1-Chlorotoluene + 4-Chlorotoluene

(A) Benzene
(B) Chlorobenzene
(C) Toluene
(D) Phenol

76. Which of the following molecules have regular geometry without Lone pair of electrons in the valence shell of central atom?

(A) NH_3
(B) PCl_3
(C) BF_3
(D) ICl_3

77. What is the reduction potential of hydrogen gas electrode when pure hydrogen gas is at 1 atmosphere pressure and platinum electrode is in contact with HCl of pH 2 at 298 K?

(A) -0.0296 V
(B) -0.0592 V
(C) -0.1184 V
(D) -0.1592 V

78. Which of the following is true about the decomposition of ozone?

(A) $\Delta H = -ve, \Delta S = +ve$ and $\Delta G = -ve$
(B) $\Delta H = +ve, \Delta S = +ve$ and $\Delta G = -ve$
(C) $\Delta H = -ve, \Delta S = +ve$ and $\Delta G = +ve$
(D) $\Delta H = +ve, \Delta S = -ve$ and $\Delta G = +ve$

79. Which of the following is kinetic property of colloidal solutions?

(A) Brownian motion
(B) Colour of colloidal solution
(C) Electrophoresis
(D) Electroosmosis

80. What is the number of unpaired electrons in Mn at observed electronic configuration?

(A) 2
(B) 3
(C) 4
(D) 5

81. Which of the following is used as green solvent?

(A) H_2O
(B) CH_2Cl_2
(C) $CHCl_3$
(D) CCl_4

82. Which from following tests decides the straight chain structure of glucose?

(A) Glucose forms oxime when treated with hydroxyl amine.
(B) Glucose forms cyanohydrin when treated with HCN.
(C) Glucose forms gluconic acid when treated with Br_2 water.
(D) Glucose forms n-hexane when prolong heated with HI.

83. Which from following the compound in aqueous medium having minimum pH?

(A) NaOH
(B) NH_4Cl
(C) Na_2CO_3
(D) NaCl

84. Calculate the standard entropy change of the surrounding if standard enthalpy of formation of methyl alcohol is -240 kJ mol^{-1}

(A) 706.48 JK^{-1}
(B) 805.37 JK^{-1}
(C) 915.10 JK^{-1}
(D) 612.16 JK^{-1}

85. Identify the use of BHT from following:

(A) As antioxidant
(B) As analgesics
(C) As antimicrobials
(D) As antibiotics

86. Identify product 'X' of the following reaction. Benzoyl chloride $\xrightarrow{H_2O} X$

(A) Benzyl alcohol
(B) Benzaldehyde
(C) Benzoic acid
(D) Benzophenone

87. Which of the following reagent is used for conversion of alkyl halide into nitrile?

(A) AgCN alcoholic
(B) KCN alcoholic
(C) $K^+O^- - N = 0$
(D) $Ag - O - N = 0$

88. Which of the following is neopentyl chloride?

(A) 1-Chloro-2,2-dimethylpropane
(B) 2-Chloro-2-methylbutane
(C) 2-2-dichloro-3-methylpentane
(D) 1-Chloro-2-2-dimethylpentane

89. Consider the following half cell reactions with corresponding standard reduction potentials.
$Cl_{2(g)} + 2e^- \rightarrow 2Cl^-_{(aq)}, E^\circ = +1.36$ V
$Al^{+3}_{(aq)} + 3e^- \rightarrow Al_{(s)}, E^\circ = -1.66$ V
$Na^+_{(aq)} + e^- \rightarrow Na_{(s)}, E^\circ = -2.71$ V
$Cu^{+2}_{(aq)} + 2e^- \rightarrow Cu_{(s)}, E^\circ = +0.377$ V The strongest oxidising and reducing agents respectively are -

(A) Al^{+3} and Na^+
(B) Na^+ and Cl_2
(C) Cl_2 and Na
(D) Cu^{+2} and Al^{+3}

90. Solubility product of $Mg(OH)_2$ is 1.08×10^{-10} What is it's solubility in mol dm^{-3}?

(A) 3×10^{-4}
(B) 9×10^{-4}
(C) 6×10^{-4}
(D) 8×10^{-4}

91. Find the total number of tetrahedral and octahedral voids formed in 1 mole of a compound forming hcp structure.

(A) 1.204×10^{24}
(B) 1.807×10^{24}
(C) 2.402×10^{24}
(D) 3.012×10^{24}

92. What is the average oxidation number of sulphur in tetrathionate ion?

(A) 0
(B) +1.5
(C) +2.5
(D) +3.0

93. For the reaction, $N_{2(g)} + 3H_{2(g)} \rightarrow 2NH_{3(g)}$ $N_{2(g)}$ disappears at a rate of 2×10^{-4} mol $dm^{-3}s^{-1}$. Calculate rate of disappearance of H_2?

(A) $\underset{-1}{1} \times 10^{-4}$ mol $dm^{-3}s$
(B) $\underset{-1}{6} \times 10^{-4}$ mol $dm^{-3}s$
(C) $\underset{-1}{2} \times 10^{-4}$ mol $dm^{-3}s$
(D) $\underset{-3}{2.5} \times 10^{-4}$ mol $dm^{-3}s^{-1}$

94. Which from following is NOT a transition element?

(A) Mo
(B) Co
(C) Ho
(D) Ti

95. Which among the following compound has highest boiling point?

(A) $n - C_4H_9OH$
(B) $n - C_4H_9NH_2$
(C) C_2H_5COOH
(D) $C_2H_5CH(CH_3)_2$

96. A first order reaction takes 10 minute for 30% completion. Find rate constant of the reaction.

(A) 0.0177 $minute^{-1}$
(B) 0.0357 $minute^{-1}$
(C) 0.0526 $minute^{-1}$
(D) 0.0713 $minute^{-1}$

97. Which from following aminoacids contains heterocyclic ring at a side chain (R) group?

(A) Arginine (B) Phenylalanine

(C) Leucine (D) Tryptophan

98. What is the pH of buffer solution prepared by mixing 0.2 M NH_4OH and 0.4 M NH_4Cl solution (pK_b of NH_4OH = 4.620)

(A) 4.025 (B) 7.035

(C) 9.079 (D) 8.450

99. The 'x' g nonvolatile solute having molar mass 196 $gmol^{-1}$ is dissolved in 3 dm^3 water. Calculate the value of 'x' if resulting solution has osmotic pressure 0.8 atm at 300 K ($R = 0.0821$ dm^3 atm K^{-1} mol^{-1})

(A) 19.1 g (B) 9.8 g

(C) 14.7 g (D) 29.4 g

101. The primer extension during PCR cycle requires the temperature range of

(A) $70 - 75^{\circ}C$ (B) $90 - 98^{\circ}C$

(C) $65 - 85^{\circ}C$ (D) $35 - 40^{\circ}C$

102. Plants usually absorb Nitrogen in the form of nitrates because Nitrogen is _____

(A) very reactive (B) non reactive

(C) not very essential (D) has a strong triple covalent bond

103. ECG helps in diagnosis of following abnormalities in conducting pathways EXCEPT

(A) enlargement of heart chambers (B) damage to cardiac muscles

(C) reduction in blood supply to cardiac muscles (D) leucopenia

104. The abscissic acid acts as antitranspirant in plants by the following processes EXCEPT

(A) making the guard cells hypotonic (B) making the guard cells turgid

(C) prevents uptake of K^+ ions by guard cells during night time (D) efflux of K^+ ions from guard cells during day time

105. Oligouria condition in children is when, the urine output is less than _____

(A) 3.5ml/kg/h (B) 2.5ml/kg/h

(C) 1.5ml/kg/h (D) 0.5ml/kg/h

106. Identify the correct ratio of male gametes, vegetative cells, generative cells and microspore mother cells produced in a microsporangium if 80 pollen grains are released from it.

(A) 1 : 1 : 1 : 1 (B) 1 : 4 : 4 : 8

(C) 2 : 1 : 1 : 4 (D) 8 : 4 : 4 : 1

107. Acetyl Co-A reacts with _____ to begin Krebs cycle.

(A) Succinate (B) Fumarate

(C) Oxaloacetate (D) Malate

108. Identify the INCORRECT statement regarding nuclein.

(A) It has high phosphorus content. (B) It shows acidic properties.

(C) It is a mixture of lipids and nucleic acids. (D) It was isolated from white blood cells in the pus.

109. Name the disease in which a child shows symptoms like low BMR, thick tongue, prolonged neonatal jaundice, lethargy and constipation.

(A) Myxoedema (B) Cushing's disease

(C) Addison's disease (D) Cretinism

110. The efficiency index of growth in plants represents

(A) total increase in growth per unit time (B) the increase in number of cells only

(C) growth of a particular system only (D) permanent change in the structure of cells only

111. What is the significance of using unleaded petrol in motor vehicles with catalytic converter?

(A) Lead in petrol activates catalyst in catalytic converter. (B) Lead in petrol inactivates the catalyst in catalytic converter.

(C) Unleaded petrol is cheaper than lead-containing petrol. (D) Unleaded petrol is more combustible than leaded petrol.

112. Given below are the steps involved in plant breeding program. Identify the correct sequence of these steps.

i. collection of variabilities

ii. hybridization

iii. evaluation and selection of parents

iv. testing, release and commercialization of new cultivars.

v. selection and testing of superior recombinants.

(A) i, ii, iii, v and iv (B) i, iii, ii, v and iv

(C) i, ii, iii, vi and v (D) v, i, ii, iii and iv

113. Which one of the following is considered as molecular scissors in modern biotechnology?

(A) Reverse transcriptases
(B) Taq polymerases
(C) Alkaline phosphatases
(D) Restriction endonucleases

114. A physical place or set of environmental conditions around the organism to which it must adapt to survive and prosper is _____

(A) Niche
(B) Ecosystem
(C) Habitat
(D) Biome

115. Class of cytokines released by cells infected with viruses and certain WBC's to protect from viral infection are _____

(A) spermines
(B) interferons
(C) mannose binding proteins
(D) Alpha - 1 - acid glycoprotein

116. Proprioceptors are present in _____

(A) retina of eye and semi-circular canal.
(B) joints, muscles and tendons.
(C) taste buds, olfactory epithelium.
(D) wall of venae cavae and carotid sinus

117. Select the group of CORRECT statements.
I. If phenotype of offsprings shows only the dominant trait then the parent plants are heterozygous.
II. A true breeding line shows stable trait inheritance and expression for several generations.
III. In mendelian experiment material, contrasting characters can be easily recognized.
IV. When a single gene controls two (or more) different traits, it is called polygene.
V. When interactions occur between the alleles of different genes present on the same or different chromosome it is called intragenic interaction.

(A) III and V only
(B) II and III only
(C) III and IV only
(D) I and V only

118. With reference to the oxyhaemoglobin dissociation curve, select the INCORRECT statement / statements.
I. 100 % saturation is very common.
II. 95 - 97 % saturation takes place at $ppO_2 = 100$ mm Hg in alveoli.
III. At 30 mm Hg of ppO_2, only 50% saturation can be maintained.
IV. The oxyhaemoglobin dissociation curve is J-shaped.

(A) I and IV only
(B) II and III only
(C) I, II and III only
(D) IV only

119. Only mode of excretion in marine bony fishes and desert amphibians is _____

(A) Diffusion
(B) Tubular secretion
(C) glomerular filtration
(D) selective reabsorption

120. The compatibility and incompatibility of the pollen-pistil interaction is determined by _____

(A) sugars
(B) nucleotides
(C) fats
(D) special proteins

121. Which of the following condition can be improved by intake of more roughage, sufficient fluids in diet and exercise?

(A) Constipation
(B) Vomitting
(C) Jaundice
(D) Diarrhoea

122. Codon on mRNA and anticodon on tRNA are _____

(A) triplet of same nucleotides
(B) triplet of complementary nucleotides
(C) set of any two complementary nitrogen bases
(D) set of only two similar nucleotides

123. Cytochromes, the electron carriers in ETS are _____

(A) Glycoproteins
(B) Glycolipids
(C) Sulphur containing proteins
(D) Iron containing proteins

124. Which one of the following present in plants is mineral in origin?

(A) Carbon
(B) Oxygen
(C) Hydrogen
(D) Nitrogen

125. Select the correct statement regarding spinal cord.

(A) It lies within the central canal of vertebral column.
(B) The bunch of nerves in the hind part is called cauda equina.
(C) It shows neural canal in the centre.
(D) Butterfly shaped area on the inner side shows presence of white matter.

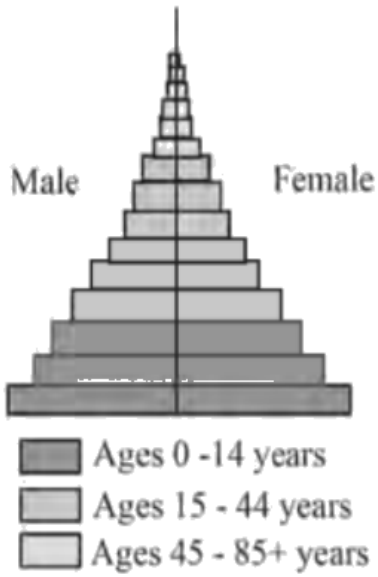
126. Given below are two statements. Statement I - Most of the blood proteins are acidic proteins. Statement II - Derived proteins are not found in nature. In the light of above statements, Select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

127. Which of the following blood corpuscles secrete serotonin?
I. Basophils II. Thrombocytes III. Monocytes IV. Eosinophils V. Lymphocytes

(A) I and III only
(B) III and V only
(C) II and IV only
(D) I and IV only

128. Observe the following diagram of Age pyramid carefully and identify the type of population growth rate seen.



(A) Rapid growth
(B) Zero growth
(C) Slow growth
(D) Negative growth

129. Vehicle DNA in rDNA technology is the common name given to _____

(A) r-DNA
(B) Cloning vector
(C) c-DNA
(D) Passenger DNA

130. Which one of the following pair of plant hormones inhibit flowering in some plants?

(A) Auxin and Ethylene
(B) Cytokinin and Ethylene
(C) Ethylene and abscissic acid
(D) Gibberellin and abscissic acid

131. Which hypothalamic hormones directly act on kidney tubules and uterus respectively?

(A) Vasopressin and GnRH
(B) Vasopressin and Adreno Corticotropin releasing hormone.
(C) Vasopressin and oxytocin
(D) Oxytocin and Adreno corticotropin releasing hormone

132. Nitrates of soil are also leached deep into the earth by _____

(A) amination
(B) amidation
(C) transamination
(D) sedimentation

133. Given below are two statements. Statement I - In the population, every person shows unusual sequences of 20 - 100 base pairs, which are repeated several times and are termed as VNTRs Statement II - VNTRs are same in each individual and hence is the key factor in DNA profiling. In the light of above statements, Select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

134. Urethral external sphincter present between urinary bladder and urethra is made up of _____ muscles, and is _____ in nature.

(A) skeletal, involuntary
(B) smooth, involuntary
(C) skeletal, voluntary
(D) smooth, voluntary

135. Match the Column I with Column II.
Column I (Animals): i. Spider; ii. Coelenterates; iii. Frog; iv. Fishes
Column II (Respiratory organs / surface): a. Internal gills; b. Book lungs; c. Plasma membrane; d. Lungs; e. External gills
Choose the correct option

(A) i - b, ii - c, iii - d, iv - e
(B) i - b, ii - c, iii - d, iv - a
(C) i - c, ii - e, iii - a, iv - b
(D) i - e, ii - c, iii - d, iv - a

136. In homeotherms, the enzymatic reaction occurs best at _____ °C.

(A) 25
(B) 35
(C) 27
(D) 37

137. Given below are two statements. Statement I - During respiration the respiratory substrate directly unite with oxygen. Statement II - The primary process of respiration consists of removal of hydrogen from the respiratory substrate. In the light of above statements, Select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

138. Which hormone facilitates contraction of fallopian tube and uterus to assist movement of sperms towards ampulla?

(A) LH
(B) GnRH
(C) Estrogen
(D) Oxytocin

139. Comparatively a large amount of pollen grains are wasted during _____

(A) hydrophily
(B) anemophily
(C) ornithophily
(D) chiropterophily

140. Digestion of maltose results in formation of _____

(A) glucose only
(B) glucose and fructose
(C) glucose and galactose
(D) fructose only

141. Transfer of antibodies from mother to infant through colostrum after birth provides _____ to the baby.

(A) natural acquired active immunity
(B) natural acquired passive immunity
(C) artificial acquired active immunity
(D) artificial acquired passive immunity

142. Which of the following microbe is used in the manufacturing of Vitamin C?

(A) Neurospora gossypii
(B) Eremothecium ashbyi
(C) Pseudomonas denitrificans
(D) Aspergillus niger

143. Match the ecological terms given in Column I with its correct explanation in Column II.
Column I (Terms): i. Stratification; ii. Zonation; iii. Productivity; iv. Decomposition
Column II (Explanation): a. Horizontal distribution of different species; b. Rate of generation of Biomass in an ecosystem; c. Breakdown of detritus; d. Vertical distribution of different species
Choose the correct option

(A) i - d, ii - c, iii - a, iv - b
(B) i - d, ii - a, iii - b, iv - c
(C) i - c, ii - d, iii - a, iv - b
(D) i - d, ii - a, iii - d, iv - b

144. The 'cry' gene transferred from Bacillus thuringiensis to a crop plant provides it with _____ properties.

(A) herbicidal
(B) insecticidal
(C) fungicidal
(D) medicinal

145. Which one of the following is measured in Dobson units (DU)?

(A) Thermal pollution of water
(B) Thickness of ozone in a column of air
(C) Biochemical oxygen Demand
(D) Biomagnification of DDT and Mercury

146. The common antibiotic Streptomycin is obtained from _____

(A) Streptomyces griseus
(B) Streptomyces venezuelae
(C) Streptomyces erythreus
(D) Streptomyces aurifaciens

147. Specific gravity of CSF is _____

(A) 1.5
(B) 1.005
(C) 1.02
(D) 1.815

148. Water is the best _____ medium for all biochemical reactions occurring in the cells.

(A) inert organic
(B) aqueous
(C) acidic
(D) alkaline

149. Flippers of penguin and dolphins is an example of _____

(A) Convergent evolution
(B) Industrial melanism
(C) Natural selection
(D) Adaptive radiation

150. Lymphedema, i.e. accumulation of lymph fluid in tissue causing swelling is seen in _____

(A) Amoebiasis
(B) Malaria
(C) Filariasis
(D) Ascariasis

151. Which one of the following is CORRECT regarding struvite stones in kidney?
I. These are formed in response to bacterial infection.
II. It is a genetic disorder.
III. These grow quickly and become quite large.
IV. Occurs in people who consume high protein diet.
V. Affected people excrete too much of certain amino acid.

(A) I and III only
(B) I and II only
(C) III and IV only
(D) IV and V only

152. The number of pollen sacs in dithecous anther is _____

(A) one
(B) three
(C) two
(D) four

153. Identify the INCORRECT statement regarding glycolysis.

(A) It occurs in cytoplasm
(B) It is common to aerobic and anaerobic respiration.
(C) Glucose undergoes partial oxidation to form 2 molecules of pyruvic acid.
(D) The process is completed in a single phase through ten steps.

154. Select the correct statement from the following regarding second trimester of pregnancy.

(A) Heart beats can be heard for first time.
(B) Human chorionic gonadotropin declines.
(C) As uterus expands, abdominal organs are displaced and compressed.
(D) Pregnant lady may feel urge for frequent urination.

155. Which one of the following is INCORRECT about homologous chromosomes?

(A) They are morphologically similar.
(B) They synapse during meiosis.
(C) Have identical gene loci bearing alleles.
(D) Both the homologous chromosomes are usually inherited from mother.

156. During CO_2 transport, movement of chloride ions across the membrane of RBCs from plasma is called _____

(A) Bohr effect
(B) Haldane effect
(C) Hamburger's phenomenon
(D) Sewall Wright effect

157. Given below are two statements. Statement I - The amount of energy available in an ecosystem increases at each successive trophic level. Statement II - Transfer of energy from one trophic level to the other follows 10% law. In the light of above statements, select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

158. From which one of the following, the melatonin is derived?

(A) Tyrosine
(B) Methionine
(C) Tryptophan
(D) Mevalonic acid

159. Pyruvate is converted to Acetyl CoA by the process of _____

(A) Oxidative Carboxylation
(B) Oxidative decarboxylation
(C) Acetylation and Carboxylation
(D) Reductive decarboxylation

160. Given below are two statements. Statement I - In artificial method of plant propagation like cutting, vegetative part used for propagation contains one or more buds. Statement II - In artificial method of vegetative propagation like budding, a vegetative part of stem contains only one bud. In the light of above statements, select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

161. Water retention in body is assisted by _____ hormone.

(A) renin
(B) calcitriol
(C) erythropoietin
(D) ADH

162. Match the Column I and Column II with respect to menstrual cycle.
Column I: i. Menstrual phase; ii. Follicular phase; iii. Ovulatory phase; iv. Secretory phase
Column II: a. Rapid secretion of LH; b. Development of primary follicle; c. Secretion of inhibin; d. Secretion of estrogen
Choose the correct option

(A) i - a, ii - b, iii - d, iv - c
(B) i - b, ii - d, iii - a, iv - c
(C) i - c, ii - d, iii - b, iv - a
(D) i - d, ii - c, iii - b, iv - a

163. Nucleosomes are the repeating units of chromatin the part between adjacent nucleosomes is called _____

(A) cDNA
(B) tandem repeats
(C) linker DNA
(D) recombination nodules

164. Given below are two statements. Statement I - Presence of capillary water is essential. Statement II - High concentration of solutes in soil water reduces the rate of absorption of water. In the light of above statements, select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

165. Which one of the following is NOT a second messenger?

(A) IP_3
(B) Ca^{++}
(C) cGMP
(D) Mg^{++}

166. Time is a crucial factor for _____

(A) ecological succession
(B) stratification
(C) zonation
(D) eutrophication

167. Which one of the following is NOT a bio-herbicide of bacterial origin?

(A) Pseudomonas spp
(B) Xanthomonas spp
(C) Fusarium spp
(D) Agrobacterium spp

168. Which one of the following Indian institution got the U.S. patent cancelled for haldi (turmeric)?

(A) OECD
(B) CSIR
(C) EPO
(D) GEAC

169. Given below are two statements. Statement I - In disruptive natural selection individuals acquire peripheral character value at both the ends of distribution curve. Statement II - Industrial melanism is an example of disruptive selection. In the light of above statements, select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

170. Two monosaccharides are held together by _____ bond.

(A) disulphide
(B) hydrogen
(C) phospodiester
(D) glycosidic

171. Secretion of salivary gland performs following functions EXCEPT

(A) acts as antibacterial agent that prevents infections.
(B) partial digestion of complex carbohydrates
(C) lubrication of food
(D) digestion of disaccharides

172. The process of gametogenesis is initiated by _____ and _____ hormones respectively.

(A) GnRH, LH
(B) FSH, LH
(C) LH, FSH
(D) GnRH, FSH

173. Which one of the following is a termination codon?

(A) AUG
(B) UGU
(C) UAG
(D) UUA

174. In plants, active absorption usually does NOT occur when _____

(A) stomata are open
(B) stomata are closed
(C) transpiration stops
(D) it is night time

175. Given below are two statements. Statement I - Smaller the food chain, more is the available energy at each trophic level. Statement II - Pyramid of energy can also be sometimes inverted. In the light of above statements, Select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

176. Protozoan like Nosema locustae is used for controlling the target pests like _____

(A) Grasshopper and crickets
(B) Wasp, beetles and ants
(C) mealy bugs and mites
(D) caterpillars and cabbage worm

177. Which one of the following statement is INCORRECT regarding competition?

(A) Resources need not always be limiting for competition to occur.
(B) Only related species compete with each other.
(C) Feeding efficiency of one species is reduced due to interference of other species.
(D) Fitness of one species is significantly lower in presence of another species.

178. In which country was AIDS first detected?

(A) India
(B) United States of America
(C) Canada
(D) China

179. A bundle of axons inside the central nervous system is _____.

(A) nerve fibre
(B) nerve net
(C) nerve tract
(D) neurofibril

180. According to capillarity theory _____ alone causes ascent of sap in plants.

(A) hydrostatic pressure
(B) osmotic pressure
(C) transpiration pull
(D) physical forces and dead cells

181. Given below are two statements. Statement I - Lactose on hydrolysis converts in to glucose and galactose. Statement II - Galactose also plays same role as glucose in respiration. In the light of above statements, select the correct option given below:

(A) Both statement I and statement II are correct.
(B) Both statement I and statement II are incorrect.
(C) Statement I is correct but statement II is incorrect.
(D) Statement I is incorrect but statement II is correct.

182. Angiotensinogen is secreted by _____.

(A) Beta cells of pancreas
(B) Alpha cells of islets of Langerhans
(C) Kupffer cells of Liver
(D) Hepatocytes of Liver

183. Which one of the following is an example of pleiotropy?

(A) Haemophilia
(B) Thalassemia
(C) Sickle cell anaemia
(D) Colour blindness

184. Which of the following is NOT a characteristics feature of open circulation?

(A) Presence of haemocoel
(B) Blood flows with low pressure
(C) Absence of respiratory pigment
(D) Blood flows through vessels

185. Which of the following characteristic is NOT acquired by man in the course of evolution?

(A) Increase in cranial capacity
(B) Bipedal locomotion
(C) Lengthening of forelimbs
(D) Broadening of pelvic girdle

186. Government of Maharashtra has adopted Japanese method of tree plantation.

(A) Kawasaki
(B) Kurosowa
(C) Miyawaki
(D) Gibberella

187. Which of the following are the pulse points of the lower limb?
I. Brachial
II. Posterior tibial
III. Femoral
IV. Radial
V. Dorsalis pedis
VI. Popliteal

(A) I, III and VI only
(B) II, IV and V only
(C) III, IV, V and VI only
(D) II, III and V only

188. Extra embryonic membrane that immediately surrounds and protects the embryo is

(A) chorion
(B) amnion
(C) yolk sac
(D) trophoblast

189. Usually digestion of cellulose in herbivorous animals takes place in _____

(A) Duodenum
(B) Jejunum
(C) Stomach
(D) Vermiform appendix

190. Aneuploidy refers to

(A) addition or deletion of one or more chromosomes to the total number.
(B) addition of entire set of chromosome to the primary basic number.
(C) haploid set of chromosomes.
(D) tetraploid set of chromosomes.

191. Select a correct pair of cells with identical set of chromosomes.

(A) Secondary oocyte and spermatid.
(B) First polar body and primary spermatocyte.
(C) 2^{nd} polar body and primary oocyte.
(D) Secondary spermatocyte and spermatogonia.

192. Association between clown fish and sea anemone is _____

(A) mutualism
(B) amensalism
(C) commensalism
(D) parasitism

193. The volume of air that is present in the respiratory tract (from nose to the terminal bronchioles) but not involved in gaseous exchange is called _____

(A) residual volume
(B) reserve volume
(C) dead space
(D) vital capacity

194. In Maharashtra a 24-hour toll free helpline number 1926 has been set up to provide information regarding _____

(A) Covid-19 cases
(B) atrocities against women and girl child
(C) tree plantation, protection and mass awareness
(D) emergency ambulance service

195. Genetic drift occurs due to _____.

(A) Natural selection
(B) Sudden elimination of particular allele
(C) Continuous gene movement
(D) Mutation

196. Match the parts of brain in Column I with their inclusions in Column II.
Column I: i. Telencephalon; ii. Rhinencephalon; iii. Mesencephalon; iv. Metencephalon
Column II: a. Olfactory lobes; b. Cerebellum and pons varolli; c. Crura cerebri and corpora quadrigemina; d. Cerebrum
Choose the correct option

(A) i - a, ii - d, iii - c, iv - b
(B) i - b, ii - c, iii - d, iv - a
(C) i - d, ii - a, iii - c, iv - b
(D) i - c, ii - d, iii - b, iv - a

197. Considering the concept of multiple alleles, one individual can have only _____ alleles for that character.

(A) one
(B) three
(C) two
(D) four

198. Mucosa forms _____ in stomach and _____ in intestine respectively.

(A) a - rugae, b - villi
(B) a - villi, b - rugae
(C) a - gastric glands, b - villi
(D) a - gastric glands, b - rugae

199. Match the name of the scientist in Column I with the name of the theory in Column II.
Column I: i. August Weisman; ii. Hugo de Vries; iii. Charles Darwin; iv. Oparin Haldane
Column II: a. Theory of origin of species; b. Theory of chemical evolution; c. Theory of continuity of germplasm; d. Mutation theory
Choose the correct option

(A) i - d, ii - b, iii - a, iv - c
(B) i - c, ii - d, iii - a, iv - b
(C) i - a, ii - d, iii - b, iv - c
(D) i - c, ii - a, iii - e, iv - d

200. Clones are produced by asexual reproduction and resulting individuals are identical _____.

(A) morphologically only
(B) genetically only
(C) anatomically only
(D) morphologically and genetically

- End of Question Paper -