प्रा. मोटेगावकर सरांचे

RCC

NEET : 2022 | **PCB Test : 5** | **Time : 03 Hours**

Question Booklet Version	Roll Number	Question Booklet Sr. No.
11 (Write this number on your Answer Sheet)	0	

This is to certify that, the entries of RCC-2022 Roll No. and Answer Sheet No. have been correctly written and verified.

Candidate's Signature

Invigilator's Signature

NTA UPDATED QUESTION PAPER PATTERN

Sr. No.	Subject(s)	Section(s)	No. Of Question(s)	Mark(s)* *(Each Question Carries 04 (Four Marks))	Type Of Question(s)
1.	PHYSICS	SECTION A	35	140	MCQ (Multiple Choice Questions)
		SECTION B	15	40	
2.	CHEMISTRY	SECTION A	35	140	
		SECTION B	15	40	
3.	BOTONY	SECTION A	35	140	
		SECTION B	15	40	
4.	ZOOLOGY	SECTION A	35	140	
		SECTION B	15	40	
		TOTAL MARKS		720	

Note: ■ Correct option marked will be given (4) Marks and incorrect option marked will be minus one (-1) mark. Unattempted/Unonswered Questions will be given no marks.

■ Section B will have 15 questions, out of these 15 Questions, candidates can choose to attempt any10 Questions.

• *Test Syllabus* •

Physics : (11^{th} + 12^{th}) Complete Syllabus

Chemistry : (11^{th} + 12^{th}) Complete Syllabus

Biology : (11^{th} + 12^{th}) Complete Syllabus

Section 'A' : Physics

Section 'A'

1. $4\hat{i}+0.8\hat{j}+c\hat{k}$ **represents a unit vector when** c **is**

1) –0.2   b) $\sqrt{0.2}$
3) $\sqrt{0.8}$ 4) 0

2. A physical quantity is measured and its value is found to be nu **where** n **= numerical value and** u **= unit. Then which of the following relations is true.**

1) $n \propto u^2$ 2) $n \propto u$
3) $n \propto \sqrt{u}$ 4) $n \propto \frac{1}{u}$

3. If mass is measure in units of α kg, length in β m and time γs then calorie would be

1) $4.2\ \alpha\beta^2\gamma^{-2}$ 2) $4.2\ \alpha^{-1}\beta^2\gamma^2$
3) $4.2\ \alpha^{-1}\beta^{-2}\gamma^2$ 4) $4.2\ \alpha^{-2}\beta^{-1}\gamma^{-2}$

4. A particle moves along a semicircle of radius 10 m in 5 seconds. The average velocity of the particle is

1) 2 π ms^{-1} 2) 4 π ms^{-1}
3) 2 ms^{-1} 4) 4 ms^{-1}

5. A body moves for a total of nine second starting from rest with uniform acceleration and then with uniform retardation which is twice the value of acceleration and then stops. The duration of uniform acceleration

1) 3 s   2) 4.5 s
3) 5 s   4) 6 s

6. The average resisting force that must act on a 5 kg mass to reduce its speed from 65 cm/s to 15 cm/s in 0.2 s is

1) 12.5 N   2) 25 N
3) 50 N   4) 100 N

7. A gun fires N **bullets per second, each of mass** m **with velocity** v**. The force exerted by the bullets on the gun is**

1) $vN\,m$ 2) $\frac{mv}{N}$
3) $mv\,N^2$ 4) $\frac{mv^2}{N}$

8. The relation between the time of flight of a projectile T_f **and the time to reach the maximum height** t_m **is**

1) $T_f = 2t_m$ 2) $T_f = t_m$
3) $T_f = \frac{t_m}{2}$ 4) $T_f = \sqrt{2}(t_m)$

9. A stone is thrown at an angle θ to the horizontal reaches a maximum height H**. Then the time of flight of stone will be**

1) $\sqrt{\frac{2H}{g}}$ 2) $2\sqrt{\frac{2H}{g}}$
3) $\frac{2\sqrt{2H\sin\theta}}{g}$ 4) $\frac{\sqrt{2H\sin\theta}}{g}$

10. A ball is released from the top of a tower. The ratio of work done by force of gravity in first, second and third second of the motion of the ball is

1) 1 : 2 : 3   2) 1 : 4 : 9
3) 1 : 3 : 5   4) 1 : 5 : 3

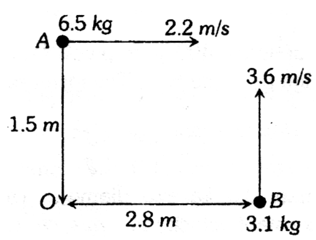
11. The potential energy of a body is given by, $U = A - Bx^2$ **(Where** x **is the displacement). The magnitude of force acting on the particle is**

1) Constant
2) Proportional to x
3) Proportional to x^2
4) Inversely proportional to x

Space For Rough Work

12. **A ballet dancer, dancing on a smooth floor is spinning about a vertical axis with her arms folded with an angular velocity of 20 rad/s. When she stretches her arms fully, the spinning speed decrease in 10 rad/s. If I is the initial moment of inertia of the dancer, the new moment of inertia is**
1) $2I$ 2) $3I$
3) $I/2$ 4) $I/3$

13. **Two particles A and B are moving as shown in figure. Their total angular momentum about the point O is**



1) 9.8 kg m^2/s 2) Zero
3) 52.7kg m^2/s 4) 37.9 kg m^2/s

14. **If the acceleration due to gravity, g, is 10 m/s^2 at the surface of the earth (radius 6400 km), then at a height of 1600 km the value of g will be (in m/s^2)**
1) 9.4 2) 5
3) 7.5 4) 2.5

15. **A liquid wets a solid completely. The meniscus of the liquid in sufficiently long tube is**
1) Flat 2) Concave
3) Convex 4) Cylindrical

16. **A container of height 10 m which is open at the top, has water to its full height. Two small openings are made on the walls of the container one exactly at the middle and' the other at the bottom. The ratio of the velocities with which water comes out from the middle and the bottom region respectively is**
1) 2 2) $\frac{1}{2}$
3) $\sqrt{2}$ 4) $\frac{1}{\sqrt{2}}$

17. **A cylinder of fixed capacity (of 44.8 litres) contains 2 moles of helium gas at STP. What is the amount of heat needed to raise the temperature of the gas in the cylinder by 20°C (Use R=8.31 J $mol^{-1}K^{-1}$)**
1) 996 J 2) 831 J
3) 498 J 4) 374 J

18. **It the mean free path of atoms is doubled then the pressure of gas will become**
1) $P/4$ 2) $P/2$
3) $P/8$ 4) P

19. **A system is given 300 calories of heat and it does 600 joules of work. How much does the internal energy of the system change in this process (J = 4.18 Joules/cal)**
1) 654 joule 2) 156.5 joule
3) –300 joule 4) –528.2 joule

20. **The slopes of isothermal and adiabatic curves are related as**
1) Isothermal curve slope = adiabatic curve slope
2) Isothermal curve slope = $\gamma \times$ adiabatic curve slope
3) Adiabatic curve slope = $\gamma \times$ isothermal curve slope
4) Adiabatic curve slope = 1/2 × isothermal curve slope

Space For Rough Work

21. The ratio of the coefficient of thermal conductivity of two different material is 5 : 3. if the thermal resistance of the two rods of these materials of same thickness is same, then the ratio of the length of these rods will be

1) 5 : 3
2) 3 : 5
3) 9 : 25
4) 25 : 9

22. The maximum velocity of a SHM represented by $y = 3\sin\left(100t + \frac{\pi}{6}\right)$ is given by

1) 300
2) $3\pi / 6$
3) 100
4) $\pi / 6$

23. Given that $y = A\sin\left[\left(\frac{2\pi}{\lambda}(ct - x)\right)\right]$, where y and x are measured in metres. Which of the following statements is true

1) The unit of λ^{-1} is same as that of $\frac{2\pi}{\lambda}$
2) The unit of λ^{-1} is same as that of x but not of A
3) The unit of c is same as that of $\frac{2\pi}{\lambda}$
4) The unit of $(ct-x)$ is same as that of $\frac{2\pi}{\lambda}$

24. A ring of radius r carries a charge Q uniformly distributed over its length. A charge q is placed at its centre will experience a force equal to

1) $\frac{qQ}{4\pi\varepsilon_0 r^2}$
2) $\frac{qQ}{8\pi\varepsilon_0 r^3}$
3) Zero
4) None of these

25. The number of electrons to be put on a spherical conductor of radius 0.1 m to produce an electric field of 0.036 N/C just above its surface is

1) 2.7×10^5
2) 2.6×10^5
3) 2.5×10^5
4) 2.4×10^5

26. The relaxation time in conductors

1) Increases with the increase of temperature
2) Decreases with the increase of temperature
3) It does not depend on temperature
4) All of sudden changes at 400 K

27. The reading of a high resistance voltmeter when a cell is connected across it is 2.2 V. When the terminals of the cell are also connected to a resistance of 5 Ω the voltmeter reading drops to 1.8 V. Find the internal resistance of the cell

1) 1.2 Ω
2) 1.3 Ω
3) 1.1 Ω
4) 1.4 Ω

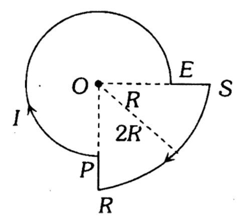
28. A charged particle is projected along the direction of uniform magnetic field, then its velocity

1) Increases
2) Decreases
3) Remains unchanged
4) None of these

29. Function of rectifier is

1) To convert *ac* into *dc*
2) To convert *dc* into *ac*
3) Both 1 and 2
4) None of these

30. A current I flowing through the loop as shown in Figure. The magnetic field at the centre O is



1) $\frac{7\mu_0 I}{16R} \otimes$
2) $\frac{7\mu_0 I}{16R} \odot$
3) $\frac{5\mu_0 I}{16R} \otimes$
4) $\frac{5\mu_0 I}{16R} \odot$

Space For Rough Work

31. **A current i flows in a circular coil of radius r. If the coil is placed in a uniform magnetic field B with its plane parallel to the field, magnitude of the torque that acts on the coil is**
1) Zero
2) $2 \pi r i B$
2) $\pi r^2 i B$
4) $2 \pi r^2 i B$

32. **A small rod of bismuth is suspended freely between the poles of a strong electromagnet. It is found to arrange itself at right angles to the magnetic field. This observation establishes that bismuth is**
1) Diamagnetic
2) Paramagnetic
3) Ferri-magnetic
4) Antiferro-magnetic

33. **A rod of 10 cm length is moving perpendicular to uniform magnetic field of intensity 5×10^{-4} Wb/m². If the acceleration of the rod is 5 m/s², then the rate of increase of induced emf is**
1) 2.5×10^{-4} Vs^{-1}
2) 25×10^{-4} Vs
3) 20×10^{-4} Vs
4) 20×10^{-4} Vs^{-1}

34. **Photons of energy 6 eV are incident on a metal surface whose work function is 4 eV. The minimum kinetic energy of the emitted photo-electrons will be**
1) 0 eV
2) 1 eV
3) 2 eV
4) 10 eV

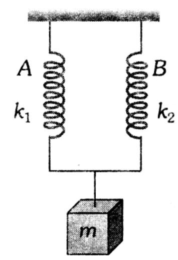
35. **If m, m_n and m_p are the masses of $_zX^A$ nucleus, neutron and proton respectively, then**
1) $m < (A - Z) m_n + Z m_p$
2) $m = (A - Z) m_n + Z m_p$
3) $m = (A - Z) m_p + Z m_n$
4) $m > (A - Z) m_n + Z m_p$

Section 'B'

36. **One mole of an ideal gas expands at a constant temperature of 300 K from an initial volume of 10 litres to a final volume of 20 litres. The work done in expanding the gas is (R = 8.31 J/mol-K)**
1) 750 joule
2) 1728 joule
3) 1500 joule
4) 3456 joule

37. **Flash light equipped with a new set of batteries, produces bright white light. As the batteries wear out**
1) The light intensity gets reduced with no change in its colour
2) Light colour changes first to yellow and then red with no change in intensity
3) It stops working suddenly while giving white light
4) Colour changes to red and also intensity gets reduced

38. **A mass m is suspended by means of two coiled spring which have the same length in unstretched condition as in figure. Their force constant are k_1 and k_2 respectively. When set into vertical vibrations, the period will be**



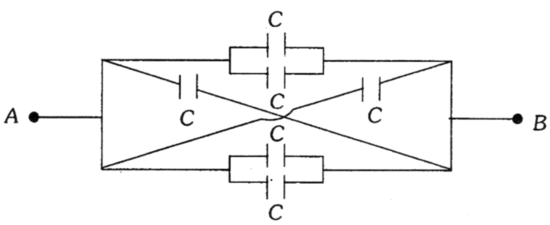
1) $2\pi\sqrt{\left(\dfrac{m}{k_1 k_2}\right)}$
2) $2\pi\sqrt{m\left(\dfrac{k_1}{k_2}\right)}$
3) $2\pi\sqrt{\left(\dfrac{m}{k_1 - k_2}\right)}$
4) $2\pi\sqrt{\left(\dfrac{m}{k_1 + k_2}\right)}$

Space For Rough Work

39. **A source and listener are both moving towards each other with speed $\frac{v}{10}$, where v is the speed of sound. If the frequency of the note emitted by the source if f, the frequency heard by the listener would be nearly**

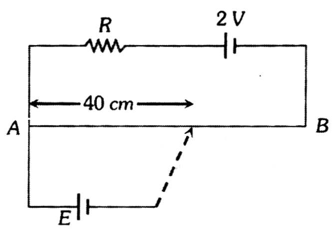
1) $1.11 f$ 2) $1.22 f$
3) f 4) $1.27 f$

40. **Six capacitors each of capacitance of 2 μF are connected as shown in figure . The effective capacitance between A and B is**



1) $12 \mu F$ 2) $8 / 3 \mu F$
3) 3 mF 4) $6 \mu F$

41. **AB is a potentiometer wire of length 100 cm and its resistance is 10 ohm. It is connected in series with a resistance R = 40 ohm and a battery of e.m.f. 2 V and negligible internal resistance. If a source of unknown e.m.f. E is balanced by 40 cm length of the potentiometer wire, the value of E is**



1) 0.8 V 2) 1. 6V
3) 0.08 V 4) 0.16 V

42. **Three coplanar, parallel, long straight wires are equally spaced, that is, the distance between each pair of successive wires is the same. The first and the third wire carry currents of 1 A each, in the same direction. What must be the current in the second wire (wire in the middle), so that the other two wires do not feel any net force**

1) 0.25 A in opposite direction to those in the first and the third
2) 0.5 A in the same direction as those in the first and the third
3) 0.5 A in the opposite direction to those in the first and the third
4) 0.25 A in the same direction as those in the first and the third

43. **Two coils A and B having turns 300 and 600 respectively are placed near each other, on passing a current of 3.0 ampere in A, the flux linked with A is 1.2×10^{-4} weber and with B it is 9×10^{-5} weber. The mutual inductance of the system is**

1) 2×10^{-5} henry 2) 3×10^{-5} henry
3) 4×10^{-5} henry 4) 6×10^{-5} henry

44. **An LCR series circuit with R = 100 Ω is connected to a 200 V, 50 Hz a.c. source when only the capacitance is removed, the current leads the voltage by 60°. When only the inductance is removed, the current leads the voltage by 60°. The current in the circuit is**

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

Space For Rough Work

45. A 50 volt a.c. is applied across an RC (series) network. The rms voltage across the resistance is 40 volt, then the potential across the capacitance would be

1) 10 V
2) 20 V
3) 30 V
4) 40 V

46. The work function of metals is in the range of 2 eV to 5 eV. Find which of the following wavelength of light cannot be used for photoelectric effect. (Consider, Planck constant = 4×10^{-15} eVs. velocity of light = 3×10^{8} m/s)

1) 510 nm
2) 651 nm
3) 400 nm
4) 570 nm

47. An electron jumps from the 4^{th} orbit to the 2^{nd} orbit of hydrogen atom. Given the Rydberg's constant $R = 10^5$ cm^{-1}. The frequency in Hz of the emitted radiation will be

1) $\frac{3}{16} \times 10^{5}$
2) $\frac{3}{16} \times 10^{15}$
3) $\frac{9}{16} \times 10^{15}$
4) $\frac{3}{4} \times 10^{15}$

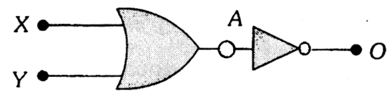
48. In a sample of radioactive material, what fraction of the initial number of active nuclei will remain undisintegrated after half of a half-life of the sample

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

49. For a transistor, the current amplification factor is 0.8. The transistor is connected in common emitter configuration. The change in the collector current when the base current changes by 6 mA is

1) 6 mA
2) 4.8 m A
3) 24 mA
4) 8 m A

50. The following logic circuit represents



1) NAND gate with output $O = \overline{X} + \overline{Y}$
2) NOR gate with output $O = \overline{X + Y}$
3) NAND gate with output $O = \overline{XY}$
4) None of these

Space For Rough Work

Section 'B' : Chemistry

Section 'A'

51. Which of the following statements is not correct ***[XI Part-I N.B. 83]***

1) In the transition elements the incoming e^- occupy (n–1)d subshell in preference to np
2) Elements having atomic number 57 to 71 belong to same group
3) Lanthanum is the first element of Lanthanoids
4) Actinium violates the Aufbau's principle

52. Which of the following statements is not correct from the point of view of molecular orbital theory ? ***[XI Part-I N.B. 130]***

1) Be_2 is not a stable molecule
2) He_2 is not a stable but He_2^+ is expected to exist
3) Bond strength of N_2 is maximum amongst the homonuclear diatomic molecules
4) The order of energies of molecular orbitals in F_2 molecule is $\pi_{2p_x} = \pi_{2p_y} < \sigma_{2p_z}$

53. Which of the following compound gives paramagnetic gas on heating : ***[XI Part-II N.B. 309]***

1) $LiNO_3$ 2) $NaNO_3$
3) KNO_3 4) All of these

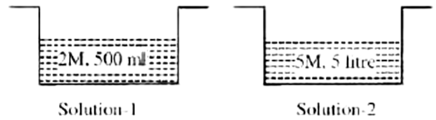
54. Smoke is an example of ***[XII Part-I N.B. 136]***

1) gas dispersed in liquid
2) gas dispersed in solid
3) solid dispersed in gas
4) solid dispersed in solid

55. Which of the following expressions is not correct? ***[XI Part-I N.B. 201]***

1) $\Delta G^\circ = -RT \ln K$ 2) $[H_3O^+] = 10^{-pH}$
3) $K_C = Kp\ (RT)^{\Delta n}$ 4) $pH = pK_a + \log \frac{[Salt]}{[Acid]}$

56. There are two aqueous HCl solutions kept in different vessel. ***[XII Part-I N.B. 36]***



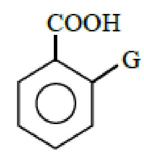
How much solution-2 should be added to solution-1 in order to make 2.5 HCl solution ?

1) 100 ml 2) 200 ml
3) 500 ml 4) 2 litre

57. Nylon-6, 6 is obtained by condensation polymerization of ***[XII Part-II N.B. 437]***

1) Adipic acid and hexamethylene diamine
2) Phenol and formaldehyde
3) Terephthalic acid and ethylene glycol
4) Succinic acid and hexamethylene diamine

58. For which group 'G', (P) is more acidic than benzoic acid ***[XII Part-II N.B. 381]***



(P)

1) –OH 2) $-CH_3$
3) –COOH 4) All of these

59. Which of the following ionic species has maximum ionisation energy ? ***[XI Part-I N.B. 87]***

1) O^- 2) S^-
3) Se^- 4) Te^-

Space For Rough Work

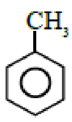
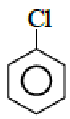
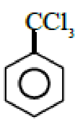
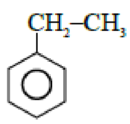
60. Match the column : (For molecular geometry)

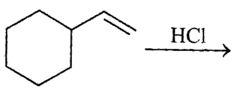
Column I	**Column II**
a) SF_4	**P. Tetrahedral**
b) BrF_3	**Q. Pyramidal**
c) BrO_3^-	**R. See-saw**
d) NH_4^+	**S. T-shape (Bent-T)**

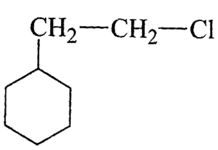
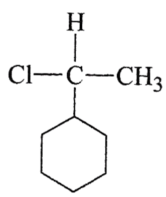
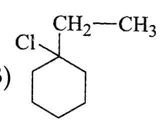
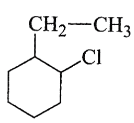
[XI Part-I N.B. 121]

1) a-P, b-Q, c-R, d-S 2) a-S, b-R, c-P, d-Q
3) a-R, b-S, c-Q, d-P 4) a-Q, b-S, c-R, d-P

61. In which of the following molecule electrophilic attack at meta positions : *[XI Part-II N.B. 403]*

1) 
2) 
3) 
4) 

62.  ***[XI Part-II N.B. 389]***

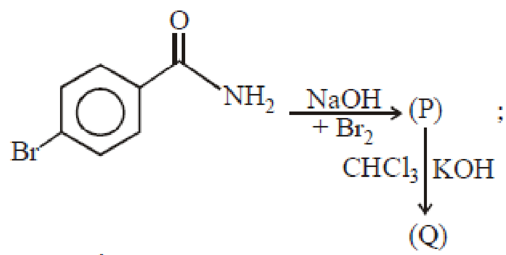
1) 
2) 
3) 
4) 

63. Lyophilic sols are more stable than lyophobic sols because : *[XII Part-I N.B. 137]*

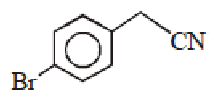
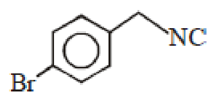
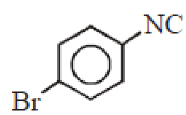
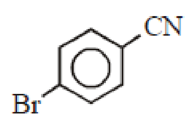
1) The colloidal particles have positive charge
2) The colloidal particles have no charge
3) The colloidal particles are solvated
4) There will be strong electrostatic repulsions between the negatively charged colloidal particles

64. Disproportionation products of H_3PO_2 **on heating are *[XI Part-II N.B. 270]***

1) $H_3PO_3 + PH_3$ 2) $H_3PO_3 + H_3PO_4$
3) $PH_3 + H_3PO_4$ 4) Only PH_3

65. 

The Q is *[XII Part-II N.B. 401]*

1) 
2) 
3) 
4) 

Space For Rough Work

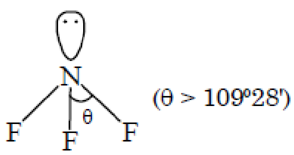
66. Which of the following option is incorrect? *[XII Part-II N.B. 429]*

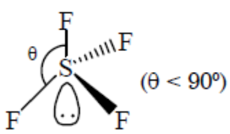
1) Amino acid is solid at isoelectric point
2) Lactose is example of disaccharide and reducing sugar
3) Nylon 66 is condensation polymer and have amide linkage
4) In RNA molecules, the sugar moiety is β-D-2 deoxyribose

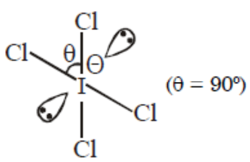
67. Which of the following d-block element has highest stable oxidation state. *[XII Part-I N.B. 223]*

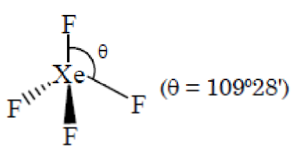
1) +8 in Mn
2) +8 in Os
3) +8 in Cr
4) +8 in Fe

68. Which of the following structure is correctly drawn according to fundamental idea of VSPER theory : *[XI Part-I N.B. 113]*

1) 

2) 

3) 

4) 

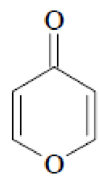
69. Bleaching action of H_2O_2 is due to its : *[XI Part-II N.B. 293]*

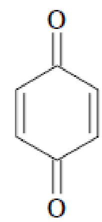
1) Oxidising nature
2) Reducing nature
3) Acidic nature
4) Thermal instability

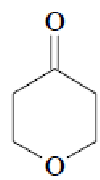
70. The product obtained in the reaction of diborane with excess of ammonia at low temperature is

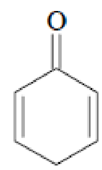
1) $B_2H_6 : NH_3$
2) $B_2H_6 : 2NH_3$
3) $(BN)_x$
4) Borazine

71. Which of the following have maximum dipole moment. *[XI Part-II N.B. 399]*

1) 

2) 

3) 

4) 

72. Which of the following is correctly matched :

a) Monds process - Ni
b) Zone refining - Ti
c) Hoop's method - Al
d) Hydro metallurgy - Ag

[XII Part-I N.B. 165]

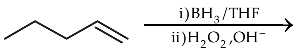
1) a, b, d
2) b, c, d
3) a, c, d
4) a, b, c, d

Space For Rough Work

73. **Calculate EAN of $[Pt(en)_2Cl_2]SO_4$:**

1) 84 2) 86
3) 88 4) 85

74. **What is the major product (A) in the following reaction:**


(A)

[XI Part-II N.B. 391]

1) Pentan-1-ol 2) 2-Methyl butan-1-ol
3) 2-Methyl butan-2-ol
4) 3-Methyl butan-1-ol

75. **CsCl has bcc structure with Cs^+ at the center and Cl^- ion at each corner. If r_{Cs^+} is 1.69 Å and r_{Cl^-} is 1.81 Å, what is the edge length of the cube ?**

[XII Part-I N.B. 12]

1) 3.50 Å 2) 3.80 Å
3) 4.04 Å 4) 4.50 Å

76. **Equivalent conductivity of $Fe_2(SO_4)_3$ is related to Molar conductivity by the expression :**

[XII Part-I N.B. 83]

1) $\lambda_{eq} = \lambda_m$ 2) $\lambda_{eq} = \frac{\lambda_m}{3}$

3) $\lambda_{eq} = 3\lambda_m$ 4) $\lambda_{eq} = \frac{\lambda_m}{6}$

77. **99% of a first order reaction was completed in 32 minutes when 99.9% of the reaction will complete :** *[XII Part-I N.B. 106]*

1) 50 min
2) 46 min
3) 48 min
4) 49 min

78. **What is the pH of a solution in which 25 ml of 0.1 M NaOH is added to 25 ml of 0.08 M HCl and final solution is diluted to 500 ml ?**

[XI Part-I N.B. 217]

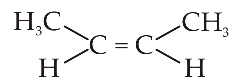
1) 3 2) 11
3) 12 4) 13

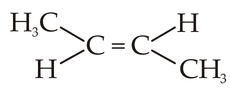
79. **Which of the following pairs of solutions at same temperature can be expected to be isotonic?**

[XII Part-I N.B. 55]

1) 0.01 M KCl & 0.01 M urea
2) 0.01 M $MgCl_2$ & 0.1 M kCl
3) 0.1 M $MgCl_2$ & 0.1 M Na_2SO_4
4) 0.1 M $Ca(NO_3)_2$ & 0.5 M acetic acid solution

80. **The decreasing order of stability of the following compound**

i. 

ii. 

iii. $CH_3-\underset{}{\overset{CH_3}{\overset{|}{C}}}=CH_2$ *[XI Part-II N.B. 355]*

1) i > ii > iii
2) ii > i > iii
3) ii > iii > i
4) iii > ii > i

Space For Rough Work

81. An electron is present in 4f subshell. The possible values for quantum numbers n, 1, m and s are *[XI Part-I N.B. 56]*

1) n = 4, l = 3, m may be any integer from $-3, -2, -1, 0, +1, +2, +3$ and $s = +\frac{1}{2}$ or $-\frac{1}{2}$

2) n = 4, l = 3, m –3 and $s = +\frac{1}{2}$

3) n = 4, l = 3, m = +3 and $s = -\frac{1}{2}$

4) n = 3, l = 2, m = –2 and $s = +\frac{1}{2}$ and $\frac{1}{2}$

82. Which compound is expected to have highest pKa value ? *[XII Part-II N.B. 380]*

1) CH_3CH_2COOH 2) $CH_3-\underset{\underset{Cl}{|}}{CH}-COOH$

3) $CF_3–CH_2–COOH$ 4) $CH_3–CF_2–COOH$

83. The orbital diagram in which the Aufbau principle is violated is *[XI Part-I N.B. 62]*

	2s	2p
1)	↑↓	↑↑ ↑ ☐
2)	↑	↑↓ ☐ ↑↓
3)	↑↓	↑ ↑ ↑
4)	↑↓	↑↓ ↑↓ ↑

84. Co-ordinated as well as hydrogen bonded water are present in :

1) $BaCl_2.2H_2O$
2) $[Cr(H_2O)_6]Cl_3$
3) $CuSO_4.5H_2O$
4) All of these

85. Consider the reaction:

$RCHO + NH_2–NH_2 \rightarrow R–CH=N–NH_2$

What sort of reaction is it? *[XII Part-II N.B. 368]*

1) Electrophilic addition - elimination reaction
2) Free radical addition - elimination reaction
3) Electrophilic substitution - elimination reaction
4) Nucleophilic addition - elimination reaction

Section 'B'

86. Select incorrect match *[XII Part-I N.B. 251]*

1) $[Co(NO_2)(H_2O)(en)_2]Cl_2$, $[CoCl(NO_2)(en)_2]Cl.H_2O$ – Hydrate isomerism
2) $[Cu(NH_3)_4][PtCl_4]$, $[CuCl_2(NH_3)_2]$ $[PtCl_2(NH_3)_2]$ – solvent isomerism
3) $[Ni(CN)(H_2O)(NH_3)_4]Cl$, $[NiCl(H_2O)(NH_3)_4]CN$ – Ionization isomerism
4) $[Cr(NCS)(NH_3)_5][ZnCl_4]$, $[Cr(SCN)(NH_3)_5][ZnCl_4]$ – Linkage isomerism

87. In the following reaction sequence

$$C_6H_5NH_2 \xrightarrow[0\text{-}5^oC]{NaNO_2 + HCl} A \xrightarrow[Warm]{HOH} B \xrightarrow[\Delta]{Zn\ dust} C;$$

C is *[XII Part-II N.B. 332]*

1) Toluene 2) Benzene
3) Phenol 4) o-nitrophenol

88. Hydrolysis of sucrose into (+) glucose and (–) fructose is known as *[XII Part-II N.B. 413]*

1) Mutarotation 2) Inversion
3) Pyrolysis 4) None of these

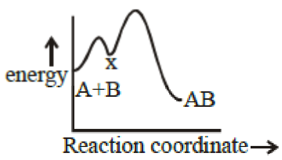
Space For Rough Work

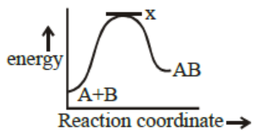
89. For an exothermic reaction : A + B $\rightarrow$ AB following two steps are involved :

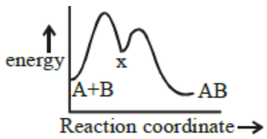
Step (i) A + B $\rightarrow$ X (slow)

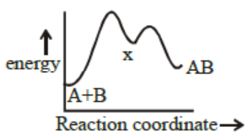
Step (ii) X $\rightarrow$ AB (fast)

The progress of reaction can be best represented by *[XII Part-I N.B. 117]*

1) 

2) 

3) 

4) 

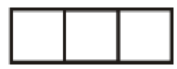
90. Select the incorrect statement : *[XI Part-I N.B. 151]*

1) At Boyle's temperature a real gas behaves like an ideal gas irrespective of pressure
2) At Boyle's temperatyre ; $z = 1 + \dfrac{b^2}{V_m(V_m - b)}$
3) On increasing the temperature four times, colission frequency (Z_1) becomes double at constant volume
4) At high pressure Van der waal's constant 'b' dominates over 'a'

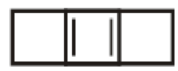
91. $CH_3-\underset{|}{CH}(COO^-K^+) - \underset{|}{CH}(COO^-K^+)-CH_3 \text{ (aq)} \xrightarrow{\text{Electrolysis}}$

major product (A) *[XI Part-II N.B. 379]*

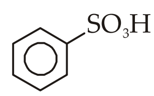
1) $CH_3-CH_2-CH=CH_2$

2) 

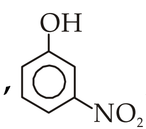
3) 

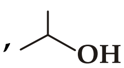
4) 

92. How many of following compounds are more acidic than water. *[XI Part-II N.B. 394]*



, **HCl, $CH_3-C\equiv C-H$, $H-C\equiv C-H$,**

, 

, 

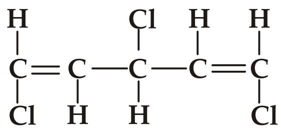
1) 4 2) 3
3) 5 4) 2

93. For a d^6 metal ion in an octahedral field, the correct electronic configuration is : *[XII Part-I N.B. 257]*

1) $t_{2g}^{6}e_g^{0}$ when $(\Delta_0 < P)$
2) $t_{2g}^{4}e_g^{2}$ when $(\Delta_0 > P)$
3) $t_{2g}^{6}e_g^{0}$ when $(\Delta_0 > P)$
4) $t_{2g}^{3}e_g^{3}$ when $(\Delta_0 < P)$

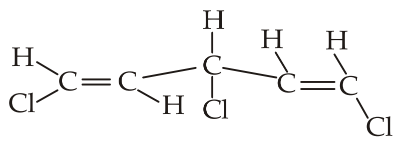
Space For Rough Work

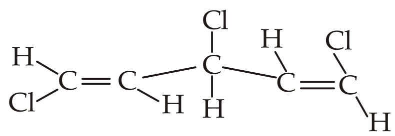
94. The following compound is

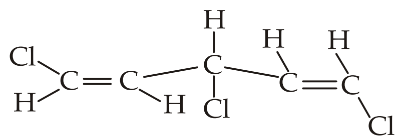


The enantiomer of this compound is

[XII Part-II N.B. 306]

1) 

2) 

3) 

4) this compound is optical inactive due to the absence of chiral centre

95. Calculate $\Delta S_{universe}$ for following chemical reaction

C(graphite) + $2H_2$(g) $\rightarrow$ CH_4(g)

$\Delta_f H° = -74.81$ kJ at 298 K.

The standard entropies of C (graphite), H_2(g) and CH_4(g) are 5.740, 130.684 and 186.264 J/K-mol, respectively. *[XI Part-I N.B. 176]*

1) 170.1 J/K
2) 125 J/K
3) 212 J/K
4) 138.2 J/K

96. Which of the following is Bacteriostatic antibiotic. *[XII Part-II N.B. 455]*

1) Penicillin
2) Chloramphenicol
3) Aminoglycosides
4) Ofloxacin

97. Calculate the weight of non-volatile solute having molecular weight 40, which should be dissolved in 57 gm octane to reduce its vapour pressure of 80%. *[XII Part-I N.B. 49]*

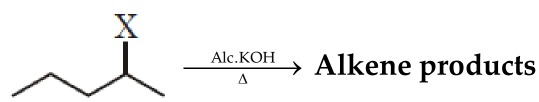
1) 47.2 gm
2) 4 gm
3) 106.2 gm
4) none of these

98. How many stuctural isomeric amines have the molecular formula $C_4H_{11}N$:

[XII Part-II N.B. 392]

1) 7
2) 8
3) 5
4) 6

99. In the reaction



Maximum extent of Hofmann alkene product will be obtained when X is:

[XI Part-II N.B. 388]

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

100. How many grams of solid NaOH must be added to 100 ml of a buffer solution which is 0.1M each w.r.t. Acid HA and salt Na^+A^- to make the pH of solution 5.5. Given pk_a(HA) = 5

(use antilog (0.5) = 3.16) *[XI Part-I N.B. 222]*

1) 2.08×10^{-1}
2) 3.05×10^{-3}
3) 2.01×10^{-2}
4) 5.19×10^{-2}

Space For Rough Work

Section 'C' : Botany

Section-A

101. The given table gives the classification of a wheat plant. [NCERT-11th, Page No. 11 Table]

Kingdom	**Plantae**
Division	Angiosperm
___i___	Monocotyledonae
___ii___	Poales
Family	**___iii__**

1) i-Genus, ii-Class, iii-Poaceae
2) i-Class, ii-Order, iii-Poaceae
3) i-Genus,ii-Class, iii-Solanaceae
4) i-Class, ii-Order, iii-Salonaceae

102. Protista classified into [NCERT 11th Page 20]

1) Chrysophytes, dinoflagellates, euglenoids, slime moulds, metazoans
2) Chrysophytes, dinoflagellates, euglenoids, slime moulds, protozonas
3) Chrysophytes, dinoflagellates, mosses, slime moulds, protozonas
4) None of the above

103. Which of the following organisms is aquatic, actively move by thousands of cilia and have a gullet avity? [NCERT 11th Page 21]

1) Entamoeba
2) Amoeba
3) Trypanosoma
4) Paramoecium

104. A Prothallus is

1) A structure in pteridophytes formed before the thallus develops
2) A sporophytic free living structure formed in pteridophytes
3) A gametophyte free living structure formed in pteridophytes
4) A primitive structure formed after fertilization in pteridophytes

105. Plants of this group are diploid and well adapted to extreme conditions. They grow bearing sporophylls in compact structures called cones. The group in reference is

1) Monocots
2) Dicots
3) Pteridophytes
4) Gymnosperms

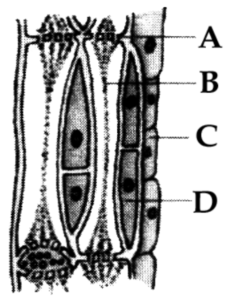
106. Identify the angiosperm in which ovary is monoloculated initially but because of development of a false septum it becomes biloculated later on. Also the ovules are attached to the inner part of' ovary.

1) Onion
2) Argemone
3) Pea
4) Tomato.

107. Select the option in which placentation in ovary is correctly matched with examples :

1) Basal - Marigold, Sunflower
2) Marginal - China rose, Pea
3) Free central - Mustard, Argemone
4) Parietal - Lemon, Primrose.

108. Diagram of phloem is given in which A - D are labelled. Which labelling is not correctly indicating its feature/function?



1) A- Facilitate transport through sieve tube elements
2) C- Cell wall is lignified
3) D- Maintain pressure gradients in sieve tubes
4) B - Possess peripheral cytoplasm but no nucleus.

109. Cork is also known as :

1) Phellem
2) Phellogen
3) Phelloderm
4) Bark.

110. Correct sequence of % mass of components in a cell is :

1) Water > Lipids > Nucleic acid > Carbohydrates
2) Lipids > Water > Carbohydrates > Proteins
3) Water > Carbohydrates > Proteins > Nucleic Acids
4) Water > Proteins > Nucleic acids > Carbohydrates.

111. Sugars are loaded in to a sieve tube through

1) Active transport along concentration gradient
2) Active transport against concentration gradient
3) Passive transport along concentration gradient
4) Passive transport against concentration gradient

112. Select incorrect statements

1) Etiolated tomato seedlings become white coloured like albinos
2) Deficiency symptoms of mobile elements such as N, K and Mg are visible first in the senescent leaves.
3) Toxic element increases the dry weight of tissues by approx 10%
4) An initial rapid uptake of sons into the free space or outer space is passive process

113. The matix that stabilises the plant

1) Water 2) Minerals
3) Microbes 4) Soil

114. ATPase enzyme is divisible into 2 components ..... P..... & ..... Q ..... Q ..... act as a transmembrane channel while ..... P ..... protrudes on the outer surface ..... Q..... mediates the facilitated diffusion of H^+ while P undergoes conformational change during ..... R ..... of proton gradient due to ..... S ..... of energy finally resulting in ..... T ..... of ATP.

Select the correct option -

1) P - F_0, R - breakdown
2) Q - F_1, R - development, T - synthesis
3) Q - F_0, S - release
4) R - breakdown, S - release, T - utilisation.

115. What is the fate of product of light reaction in photosynthesis ?

1) O_2 diffuse out of chloroplast while ATP and NADPH are utilized in dark reaction.
2) O_2 and ATP move out of chloroplast while NADPH stays there for further metabolism.
3) O_2 and ATP are utilized by stromal intermediates while NADPH diffuse out to cytoplasm.
4) O_2,ATP and NADPH are utilized in dark reaction.

116. Incorrect about fermentation

1) Partial breakdown of glucose
2) Net gain = 2ATP
3) Site = mitochondrial matrix
4) Requirement of O_2 = No

117. 3 terms-inhibitor-B, Abscission II and Dormin are used for the same hormone. That hormone is [NCERT-11th, Page-248]

1) Auxin 2) ABA
3) C_2H_4 4) GA

118. Go through the following statements

i. Promotes flowering in pineapple
ii. Used to prepare weed free lawn
iii. Promotes the abscision of older mature leaves and fruits

The above functions are carried out by [NCERT 11th Page-248]

1) GA 2) C_2H_4
3) ABA 4) Auxin

119. Match the following columns

Column-I (Asexual reproduction types)	Column-II (Examples)
A. Binary fission	1. *Algae*
B. Zoospore	2. *Amoeba*
C. Conidium	3. *Hydra*
D. Budding	4. *Penicillium*
E. Gemmules	5. *Sponge*

1) A-1, B-4, C-5, D-3, E-2
2) A-2, B-1, C-4, D-3, E-5
3) A-1, B-2, C-3, D-4, E-5
4) A-1, B-4, C-3, D-2, E-5

120. Thread-like pollen without exine are found in

1) Hydrophily 2) Entomophily
3) Anemophily 4) Chiropterophily

121.

Column I	Column II
a. Sporogenous tissue	1. Pollen grain
b. Nucellus	2. Microsporangium
c. Male gametophyte	3. Embryo sac
d. Female gametophyte	4. Megasporangium

1) a-3, b-1, c-4, d-2 2) a-2, b-4, c-3, d-1
3) a-4, b-2, c-1, d-3 4) a-2, b-4, c-1, d-3

122. The two eukaryotic organelles responsible for cytoplasmic inheritance are

1) Lysosomes and mitochondria
2) Chloroplasts and lysosomes
3) Mitochondria and chloroplasts
4) Mitochondria and Golgi complex

123. If BB represents barr body and Y_0 represents Y-Body, XXY or Klinefelters syndrome has

1) BB-1, Y_0-0 2) BB-1, Y_0-1
3) BB-0, Y_0-1 4) BB-2, Y_0-1

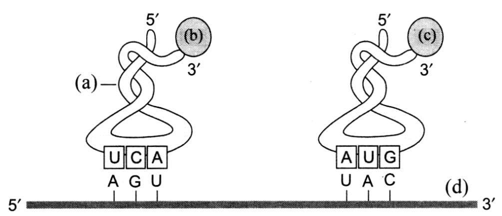
124. Probability of male child of haemophilic father and normal mother becoming haemophilic is

1) 0% 2) 25%
3) 50% 4) 100%

125. *Escherichia coli* fully labelled with ^{15}N is allowed to grow in ^{14}N medium. The two strands of DNA molecule of the first generation bacteria have

1) Different density and do not resemble parent DNA
2) Different density but resemble parent DNA
3) Same density and resemble parent DNA
4) Same density but do not resemble parent DNA

126. Recognise the figure and choose the correct option given below.



1) a-Ser, b-Tyr, c-tRNA, d-mRNA
2) a-tRNA, b-Tyr, c-Ser, d-mRNA
3) a-tRNA, b-Ser, c-Tyr, d-mRNA
4) a-tRNA, b-Ser, c-mRNA, d-Tyr

127.

	Column I		**Column II**
a.	Structural gene	p.	Binding site for repressor protein
b.	Operator gene	q.	Codes for repressor protein
c.	Promoter gene	r.	Induces lactose transport from the medium
d.	Regulator gene	s.	Codes for enzyme permase
		t.	Binding site for RNA polymerase

1) a-q, b-t, c-p, d-r 2) a-r, b-s, c-t, d-p
3) a-s, b-p, c-t, d-q 4) a-t, b-s, c-q, d-p

128. Major biomes are formed due to

[NCERT 12th, Page-220, Read 13.1]

a) Different MAP **b) Different MAT**
c) Different seasons

1) a, b 2) b, c
3) a, c 4) a, b, c

129. Match the correct pairs

Column-A	**ColumnB**
a) Zooplankton	**i) Diapause**
b) Fish and snail	**ii) Hibernation**
c) Bear	**iii) Aestivation**

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

130. "Earth worm" is a [NCERT 243, Last para]

1) Herbivore 2) Carnivore
3) Detritivore 4) All of these

131. "Biological cycle" is the name give to

[NCERT 12th, Page 253, 2nd Para]

1) Nutrient cycling 2) Food chain
3) Trophic level 4) All of these

132. The term biodiversity was popularised by

[NCERT 12th, page 258, Last two lines]

1) Edward wilson - the ecologist
2) Edward wilson - sociobiologist
3) Odum - the ecologist
4) Humbolt - Sociobiologist

133. There are about _x_ estimated varities of rice in India and _'y'_ genetically different strains [Registered or inventeries] of rice in India are present. Here x and y respectively are

[NCERT 12th, Page - 214, 2nd para, line 2,3 and page 259, see genetic diversity]

1) 50000 and 200000 2) 200000 and 50000
3) 50000 and 100000 4) 100000 and 200000

134. Which of the following is true about "El Nino effect" [Most Imp for NEET 2021] [NCERT 12th, Page 282, Line - 1,2,3,4]

1) It is an odd climatic condition
2) Deleterous changes in the environment leads to "El Nino"
3) It is due to rise in temperature in environment
4) All of these

135. Match the correct pairs of green house gases and their relative concentration in global warming [NCERT 12th, Page-281, Fig 16.7]

Column-A	Column-B
a) Methane	i) 60%
b) CO_2	ii) 6%
c) CFC	iii) 14%
d) N_2O	iv) 20%

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

Section-B

136. Which are extensively used in biochemical and genetic work? [NCERT 11th Page 24]

1) claviceps and Neurospora
2) Alternaria and Trichoderma
3) Ustilago and Puccinia
4) Mucor and Rhizopus

137. Protonema is

1) Haploid and is found in mosses
2) Diploid and is found in liverworts
3) Diploid and is found in pteridophytes
4) Haploid and is found in pteridophytes

138. Coir in coconut is obtained from :

1) Epicarp 2) Mesocarp
3) Endocarp 4) Endosperm.

139. If xylem and phloem are arranged at different radii, then arrangement of vascular bundles is said to be :

1) Open 2) Closed
3) Radial 4) Endarch.

140. Out of the following, how many are homopolymer polysaccharides? [Inulin, Mucopolysaccharides, Starch, Glycogen, Cellulose]

1) 2 2) 3
3) 4 4) 5

141. The microfibrils in the cell wall of the guard cells

1) Made up of cellulose and oriented longitudinally
2) Made up of cellulose and oriented radially
3) Made up of inulin and oriented radially
4) Made upof amylose and oriented longitudinally

142. Select the incorrect match -

1) First product in C_3 cycle : 3-Phosphoglyceric acid
2) Ribulose - 1,5 - triphosphate (RuBP) : 5 carbon aldose sugar
3) Kranz anatomy in leaves : C_4 plants
4) Non-cyclic photophosphorylation : Grana.

143. Which set of substrates can be respired in cellular respiration ?

1) Carbohydrates can be respired but fats and proteins cannot.
2) Carbohydrates and fats can be respired but proteins cannot.
3) Carbohydrates and proteins can be respired but fats cannot.
4) Carbohydrates, proteins and fats, all can be respired.

144. The seed dormancy is controlled by

1) External environment
2) Under endogenous control
3) Conditions within the seed itself
4) All of the above

145. Sickle cell anaemia has not been eliminated from African population as

1) It is controlled by dominant genes
2) It is controlled by recessive genes
3) It is not a fatal disease
4) It provides immunity against malaria

146. In polynucleotide chain, a nitrogenous base is linked to .... through a N-glycosidic linkage to form a nucleoside. Fill the correct update.

1) The OH of 5′C pentose sugar
2) The OH of 1′C pentose sugar
3) The OH of 5′C of a nucleoside
4) The OH of 3′C of pentose sugar

147. Assertion : Humming bird, is a conformer

Reason : Small animals have larger surface area, relative to their volume. They tend to lose heat very fast, when its cold outside

[NCERT 12th, Page-224, Conform - line 16,17,18]

1) If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion
2) If both Assertion and Reason are true but the Reason is not the correct explanation of the Assertion
3) If Assertion is true statement and Reason is false
4) If both Assertion and Reason are false - statements

148. Which of the following is true for standing crop

1) Calculated in the form of biomass
2) Calculated as a dry weight
3) Standing crop is calculated for each trophic level
4) All of these

149. Rauwolfia Vomitoria, from different ranges of Himalaya, produces reserpire which shows heterogenisity in terms of

[NCERT 12th, Page 259, See genetic diversity]

1) Potency and concentration
2) Efficacy and proactiveness
3) Theraputics and toxicity
4) Toxicity and theraputics

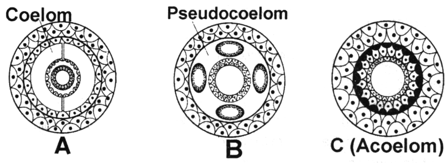
150. _______ is the only solution, for the treatment of 'e-waste' provided it is carried out in an environment friently manner

[NCERT 12th, Page-279, 2nd Para, Last 3 line]

1) Recycling
2) Burried in landfills
3) Incineration
4) All of these

Section 'D' : Zoology

Section-A

151. 

A, B and C are found in **[NCERT 11th Page-48]**
1) Annelids, Aschelminthes, Platyhelminthes respectively
2) Platyhelminthes, Annelids, Aschelminthes respectively
3) Aschelminthes, Platyhelminthes, Annelids respectively
4) Sponges, Aschelminthes, Platyhelminthes respectively

152. Which one is exclusively marine?
[NCERT 11th Page-54]
1) Echinodermata 2) Hemichordata
3) Protochordates 4) All of these

153. Matrix of cartilage is secreted by
[VIMP NEET 2021] [NCERT 11th, Page-104, Line-4,5,6. Read carefully]
1) Chondrocytes 2) Fibroblats
3) Lacunae 4) Collagen fibres

154. "Intercalated discs" are the communication junctions, present at "some" fusion points of cardiac muscle fibres. These discs contain cell junctions. **[VIMP for NEET 2021]**
1) Desmosomes 2) Tight junctions
3) Gap junctions 4) All of these

155. Match the column and select correct options

Column-I	Column-II
A) Singer & Nicolson	i) Ribosome
B) George Palade	ii) Non-staining secondary constriction
C) Satellite	iii) Quasi fluid nature of lipid
D) Axoneme	iv) 20-40 chloroplast per cell
E) Chlamydomonose	v) Chromatin
F) Flemming	vi) Core of cilium

1) A-i, B-iv, C-iii, D-ii, E-v, F-vi
2) A-vi, B-v, C-iv, D-iii, E-ii, F-i
3) A-iii, B-i, C-ii, D-vi, E-iv, F-v
4) A-i, B-iii, C-ii, D-iv, E-v, F-vi

156. Cell wall of algae made of
1) Cellulose and calcium carbonate
2) Cellulose, galactans, mannans, xylan and calcium carbonate
3) Cellulose, galactans, mannans and calcium carbonate
4) Cellulose and galactons

157. In plant cells wall formation starts in
1) Lateral side of the cell
2) Centre of the cell
3) Apex of the cell
4) Bottom of the cell

158. In telophase II
1) Four diploid daughter cells are produced
2) Four haploid daughter cells are produced
3) two haploid daughter cells are produced
4) two diploid daughter cells are produced

159. Select the incorrect match :
1) Dental formula of adult human = $\frac{2123}{2123}$
2) Number of lobes in liver = 2
3) Types of teeth in human = 4
4) Parietal cells = Secretion of pepsinogen

160. Which duct release pancreatic juice and bile juice into duodenum?
1) Hepatopancreatic duct
2) Bile duct
3) Cystic duct
4) Stenson's duct

161. Identify the correct sequence of following events :
1. Air is inspired
2. Increase in thoracic cavity
3. Increase in pulmonary cavity
4. Contraction of intercostals and phrenic muscles
1) $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$ 2) $4 \rightarrow 1 \rightarrow 2 \rightarrow 3$
3) $4 \rightarrow 3 \rightarrow 2 \rightarrow 1$ 4) $4 \rightarrow 2 \rightarrow 3 \rightarrow 1$

162. Composition of plasma = 90% A + 8% B + 2% others. A and B are expected to be respectively

1) Solutes and water
2) RBC and water
3) Water and blood cells
4) Water and plasma proteins

163. Incorrect about human heart -

1) Myogenic
2) Size is equivalent to clenched fist
3) Located in between two lungs
4) Apex of heart is formed mainly by right ventricle

164. Insects living in aquatic conditions are -

1) Ammonotelic 2) Ureotelic
3) Uricotelic 4) Aminotelic.

165. Which part of body is concerned with excretion of ammonia in animals ?

1) Liver 2) Spleen
3) Kidney 4) Gill Surface.

166. Which of the following bones are "Flat bones"

a) Skull bones **b) Ribs**
c) Sternum **d) Scapule**

[NCERT 11th, Page-311-2nd para line-6,7 and page 310, para 3rd, line 1,2 and page 312, line 6,7 and page]

1) a, b, c only 2) c and only
3) a, c, d onluy 4) a, b, c, d

167. Match the correct pairs between type of joints and degree of movement permitted at that joint

Column-I	Column-II
a) Synovial	**i) Considerable movement**
b) Fibrous	**ii) Limited movement**
c) Cartilagenous	**iii) Movement not allowed**

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

168. Myelinated nerve fibres are

1) Having Schwann cells
2) Lacking Nodes of Ranvier
3) Not found in cranial nerve
4) Rare in CNS.

169. Action potential is generated at axonal membrane. All of the following are expected except -

1) Outer surface of membrane will become negatively charged.
2) Membrane is polarized,
3) Membrane is nearly impermeable to K^+.
4) None of these

170. Anterior pituitary secretes following hormones except -

1) GH 2) TSH
3) ADH 4) FSH

171. Select the incorrect match :

1) Adrenal cortex - Glucocorticoids
2) Parathyroid glands - 4 in number
3) Hypothyroidism - Cretinism
4) Thymosins - Steroid hormone

172. During spermatogenesis spermatogonia undergo, "Mitosis differentiation" to form

[NCERT 12th, Page-38 (a)]

1) Primary spermatocyte
2) Spermatogonium
3) Secondary spermatocyte
4) Spermatid

173. The hormone which maintain the thickness of endometrium and the hormone which is responsible for increasing the endometrial thickness respectively are

[NCERT 12th, Page-51, Line 9,10,11]

1) Oestrogen and progesterone
2) Progesterone and oestrogen
3) Oestrogen and oestrogen
4) Progesteron and progesterone

174. Which of the following veneral diseases can be transmitted by sharing of injections, needles surgical instruments

[NCERT 12th, Page-63, See - 4.4 2nd Para]

1) Hepatitis B 2) HIV
3) Gonorrhea 4) More than 1 correct

175. Vulnerable age group for the transfer fo STD is

1) 15-24 years 2) 10 to 20 year
3) 20-50 years 4) 5 to 15 year

176. In London, after 1920, (take white winged moth = W, Dark winged moth = D) -

1) W = D 2) W = D
3) W > D 4) W < D

177. Industrial melanism phenomenon was observed in -

1) England 2) USA
3) France 4) Greenland

178. 'c-onc' are:

1) Conc. maintaining genes
2) Proto-oncogenes
3) Cellular oncogenes
4) More than one correct option

179. Majority of abused drugs belong to

1) Opioids 2) Canabinoids
3) Coca alkaloids 4) Barbiturates

180. Fill up the blanks -

Saccharum barberi was originally grown in north India, but had __A__ sugar content and yield. Tropical canes grown in south India Saccharum officinarum had __B__ stems and __C_ sugar content but did not grow well in north India. These two species were successfully crossed to get sugar cane varieties combining the desirable qualities of high yield, __D__ stems, __E__ sugar and ability to grow in the sugarcane areas of __F__India.

1) A - poor, B - thick, C - high, D - thicker, E - higher, F - north
2) A - poor, B - thicker, C - higher, D - thick, E - high, F - north
3) A - poor, B - thinner, C - higher, D - thin, E - high, F - north
4) A - poor, B - thicker, C - higher, D - thick, E - high, F - south

181. In sewage treatment plant activated slude is present in

[NCERT 12th, Page-184, Second last para, Line 2,3]

1) Primary setting tank
2) Secondary settling tank
3) Large aeration tank
4) Anaerobic sludge digester

182. "Spent slurry" is [NCERT 12th, Page-186, Page 7,8,9]

1) Dung and water together
2) Slude
3) Substance in digester
4) None

183. Taq DNA polymerase enzymes is obtained from [NCERT-12th Page-202]

1) *Thermus aquaticus*
2) *Agrobacterium tumifaciens*
3) *Aspergillus flavus*
4) *Esherichia coli*

184.

Column I	Column-II
i. PCR	A. Thermus aquaticus
ii. Taq DNA polymerase	B. Plasmid
iii. Extrachromosomal DNA	C. Amplification
iv. Ethidium bromide	D. DNA staining

[NCERT-12th Page-202]

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

185. Genetically engineered human insulin is manufactured by the use of which of the following microorganisms? [NCERT-12th Page-21]

1) *Penicillium* 2) *Rhizopus*
3) *E.Coli* 4) *Pseudomonas*

Section-B

186. The space between the visceral hump and dorsal spongy skin is called ____ in which ____ are present in case of molluscs

1) Mantle cavity, gill 2) Body cavity and cell
3) Viscera and shell 4) Shell and Viscera

187. The membranous extensions into the cytoplasm which contain pigments

1) Chromophore 2) Chromatophore
3) Chromosome 4) Chlorophyll

188. Which hormone is present in pancreatic juice?

1) Insulin only
2) Glucagon only
3) Both insulin and glucagon
4) Neither insulin nor glucagon

189. Which information is incorrect about normal value -

1) RBC count = 5.5 million /100 ml of blood
2) Hb count = 12-16 gm / 100 ml of blood
3) Platelet count = 1.5 to 3.5 lac / mm^3 of blood
4) Neutrophils = 60 - 65% of total WBC.

190. If TLC = Total lung capacity, VC = Vital capacity, ERV = Expiratory reserve volume, IRV = inspiratory reserve volume, TV = Tidal volume, EC = Expiratory capacity, IC = Inspiratory capacity and FRC = Functional residual capacity then identify the wrong statement

1) TLC= RV+EC+IRV 2) VC = ERV+IC
3) FRC = IRV+RV 4) EC – ERV=RV

191. Select the incorrect statement -

1) Kidneys play an important role in removal of NH_3
2) Uric acid is excreted in the form of pellet.
3) Few animals can retain urea in their renal matrix to maintain a desired osmolarity.
4) All are incorrect

192. Which of the following is correctly by matched applicable for an electrical synapse?

	Synaptic cleft	Involvement of neurotransmitter
1)	Yes	Yes
2)	Yes	No
3)	No	Yes
4)	No	No

193. Select the option which indicates the effect of Cortisol -

	Gluconeogenesis	Lipolysis	Proteolysis
1)	Stimulate	Inhibit	Stimulate
2)	Stimulate	Stimulate	Stimulate
3)	Inhibit	Stimulate	Inhibit
4)	Inhibit	Inhibit	Inhibit

194. Select the mismatch

1) Alfred Wallace - Malay Archipelago.
2) Charles Darwin - Galapagos Islands.
3) Louis Pasteur - Given theory of spontaneous generation.
4) Hugo de Vries - Mutation.

195. Match the Columns

	Column-A		Column-B
A	Diagnostic test for AIDs	1	Metastasis
B	Diagnostic test for typhoid	2	ELISA
C	Malignant tumor	3	Widal
D	Normal cells	4	Contact inhibition

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

196. Which of the following methods are used to introduce alien DNA [NCERT-12th Page-201]

1) Biolistics 2) Microinjection
3) Disarmed pathogen 4) All of these

197. Which of the statements is/are true

a) Adenoviruses causes respiratory infections [NCERT 12th, Page 180, Fig. 10.2 -b, & Page-181]

b) Roqueforte chees is the product of bacteria while swiss cheese is the product of fungus

c) Prions are the proteinacious infections agents [NCERT 12th, Page-179, 1st Para last 3 lines]

1) a,b 2) b, c
3) a, c 4) a, b, c

198. Correct chronological order of the events occurring during callus culture is -

1) Callus → Cell division → Explant → Addition of cytokinin → Acquire meristematic property
2) Explant → Callus → Cell division → Addition of cytokinin → Cells acquire meristematic property
3) Explant → Cell dvision → Callus → Addition of cytokinin → Cells acquire meristematic property
4) Callus → Explant → Cell division → Addition of cytokinin → Cells acquire property.

199. If Human male ejaculates 200 to 300 million sperms during coitus, then what number of sperms should have normal shape and size for normal fertility [NCERT 12th, Page-48, 2nd Para Lines 15,16,17]

1) 100 to 200 million 2) 50 to 100 million
3) 120 to 180 million 4) 25 to 100 million

200. According to lever-fulcrum mechanism joints acts as _A_ and bones act as _B_ respectively [VIMP For NEET 2021] [NCERT 11th, Page 312, Line 2,3]

1) Lever and fulcrum 2) Fulcrum and lever
3) Lever and lever 4) Fulcrum & fulcrum

Space For Rough Work