ISO 9001: 2015 Certified

CAREER INSTITUTE PVT.LTD.

ROLL. NO.

SCORE BOOSTER TEST SERIES

PHASE - I

TARGET NEET 5TH MAY 2024

Physics - 50		Chemistry - 50	Biology - 100
Mark : 720	Group : PCB	Time : 3 Hrs.20 Min.	Date : 13/12/2023

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

This is to certify that, the entries of NEET-2024 Roll No. and Answer Sheet No. have been correctly written and verified.

Candidate's Signature

Invigilator's Signature

(CT TEST-02) : SYLLABUS

PHYSICS : - PROJECTILE MOTION AND RELATIVE MOTION

CHEMISTRY : - MOLE CONCEPT

BIOLOGY : - PLANT KINGDOM + STRUCTURAL ORGANSATION IN ANIMAL

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.	Botany	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/Unanswered Questions will be given no marks.

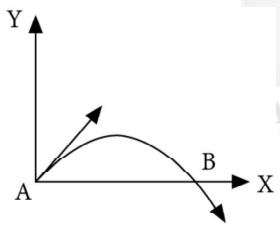
SECTION-A

01. The angle between $A = \hat{i} + \hat{j}$ and $B = \hat{i} - \hat{j}$ is
(1) 45° (2) 90°
(3) –45° (4) 180°

02. The equation of a projectile is $y = \sqrt{3}x - \frac{gx^2}{2}$
The angle of projection is given by
(1) $\tan\theta = \frac{1}{\sqrt{3}}$ (2) $\tan\theta = \sqrt{3}$
(3) $\frac{\pi}{2}$ (4) zero

03. Assertion : The maximum horizontal range of projectile is proportional to square of velocity.
Reason : The maximum horizontal range of projectile is equal to maximum height attained by projectile.
(1) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(2) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(3) If the Assertion is correct but Reason is incorrect.
(4) If the Assertion is incorrect and Reason is correct.

04. The velocity of a projectile at the initial point A is $\left(2\hat{i} + 3\hat{j}\right)$ m/s its velocity (in m/s) at point B is



(1) $-2\hat{i} + 3\hat{j}$ (2) $2\hat{i} - 3\hat{j}$
(3) $2\hat{i} + 3\hat{j}$ (4) $-2\hat{i} - 3\hat{j}$

05. For angle ...X..., the projectile has maximum range and it is equal to ...X... Here, X and Y refer to
(1) $\frac{\pi}{4}$ and $\frac{v_0^2}{2g}$ (2) $\frac{\pi}{2}$ and $\frac{v_0}{g}$
(3) $\frac{\pi}{4}$ and $\frac{v_0^2}{g}$ (4) $\frac{\pi}{2}$ and $\frac{v_0^2}{g}$

06. Ratio between maximum range and square of time of flight in projectile motion is :
(1) 1 (2) 2
(3) 4 (4) 5

07. A man projects a coin upwards from the gate of a uniformly moving train. The path of coin for the man will be :
(1) Parabolic
(2) Inclined straight line
(3) Vertical straight line
(4) Horizontal straight line

08. A person can throw a stone to a maximum distance of 500 m. The greatest height to which he can throw the stone is :
(1) 50 m (2) 250 m
(3) 260 m (4) 1000 m

09. A cricketer can throw a ball to a maximum horizontal distance of 180 m. The speed with which he throws the ball is ($g = 9.8\ m/s^2$) :
(1) 35 m/s (2) 30 m/s
(3) 40 m/s (4) 42 m/s

10. The velocity $\vec{v}$ of a particle moving in the xy – plane is given by $\vec{v} = \left(6t - 4t^2\right)\hat{i} + 8\hat{j}$, with $\vec{v}$ in m/s and t(> 0) in second.
Match the following columns :

	Column I		Column II
A.	Acceleration magnitude is 10 m/s^2 at a time	1.	3/4 s
B.	Acceleration zero at time	2.	Never
C.	Velocity zero at time	3.	1 s
D.	The speed 10 m/s at a time	4.	2 s

(1) A-4; B-1; C-2; D-3 (2) A-2; B-4; C-3; D-1
(3) A-3; B-2; C-4; D-1 (4) A-2; B-4; C-1; D-3

SPACE FOR ROUGH WORK

11. In a projectile motion, where is the angular momentum minimum?
(1) At the starting point
(2) On the landing point
(3) Highest point of projectile
(4) As no such position

12. A projectile fired with initial velocity u at some angle θ has a range R. If the initial velocity be doubled at the same angle of projection, then the range will be :
(1) 4 R (2) 8 R
(3) R/4 (4) R

13. Two particles A and B are projected with same speed so that the ratio of their maximum heights reached is 3 : 1. If the speed of A is tripled without altering other parameters, the ratio of the horizontal ranges attained by A and B is :
(1) 10 : 1 (2) 9 : 1
(3) 2 : 5 (4) 6 : 13

14. A bullet is fired with a velocity u making an angle of 30° with the horizontal plane. The horizontal component of the velocity of the bullet when it reaches the maximum height is :
(1) $\frac{u}{\sqrt{2}}$ (2) u
(3) $u\sqrt{3}$ (4) $\frac{\sqrt{3}}{2}u$

15. For an object thrown at 30° to horizontal, the maximum height (H) and horizontal range (R) are related as :
(1) R = 16H (2) $R = 4\sqrt{3}H$
(3) $R = 2\sqrt{2}H$ (4) R = 2H

16. A man standing on the edge of a cliff throws a stone straight up with initial speed u and then throws another stone straight down with the same initial speed and from the same position. Find the ratio of the speed the stones would have attained when they hit the ground at the base of the cliff :
(1) 4 : 1 (2) 1 : 3
(3) 1 : 1 (4) 1 : 2

17. A cricketer hits a ball and it possess kinetic energy E, ball making an angle 30° with horizontal, then its K.E. at the highest point is :
(1) $\frac{3E}{2}$ (2) E
(3) $\frac{\sqrt{3}E}{4}$ (4) $\frac{3E}{4}$

18. A gun fires two bullets at 60° and 30° with the horizontal. The bullets strikes at some horizontal distance. The ratio of maximum heights for the two bullets is in the ratio :
(1) 1/4 (2) 3/4
(3) 3 (4) 2

19. If a projectile is launched with velocity v_0 making an angle θ with X-axis. Time of flight T is
(1) $T = \frac{v_0^2 v \sin^2\theta}{g}$ (2) $T = \frac{v_0^2 v \sin^2\theta}{2g}$
(3) $T = \frac{v_0^2}{g}$ (4) $T = \frac{2v_0 \sin\theta}{g}$

20. Suppose that two objects A and B moving with velocities $\overrightarrow{V_A}$ and $\overrightarrow{V_B}$ (each with respect to some common frame of reference). Let $\overrightarrow{V_{AB}}$ represents the velocity of A with respect to B then :
(1) $\vec{V}_{AB} + \vec{V}_{BA} = 0$ (2) $\vec{V}_{AB} - \vec{V}_{BA} = 0$
(3) $\vec{V}_{AB} \neq \vec{V}_A + \vec{V}_B$ (4) $|\vec{V}_{AB}| \neq |\vec{V}_{BA}|$

21. Rain is falling vertically with speed of 35 m/s. A woman rides a bicycle with a speed of 15 m/s in East to West direction. What is the direction in which the should hold her umbrella?
(1) $\tan^{-1}\left(\frac{3}{7}\right)$ with the vertical towards west
(2) $\tan^{-1}\left(\frac{4}{7}\right)$ with the vertical towards east
(3) $\tan^{-1}\left(\frac{5}{7}\right)$ with the vertical towards east
(4) Towards North downward

SPACE FOR ROUGH WORK

22. The speed of boat is 18 km/h in still water. It crosses a river of width 2 km along the shortest path in 7 minutes. The velocity of the river is :
(1) 5.5 km/h (2) 6 km/h
(3) 7 km/h (4) 10 km/h

23. A boat man could row his boat with a speed 10 m/sec. He wants to take his boat from P to a point Q just opposite on the other bank of the river flowing at a speed 4m/sec. He should row his boat
(1) At right angle to the stream
(2) At an angle of $\sin^{-1}(2/5)$ with PQ up the stream
(3) At an angle $\sin^{-1}(2/5)$ with PQ down the stream
(4) At an angle $\cos^{-1}(2/5)$ with PQ down the stream

24. A boat which has a speed of 5 km/hr in still water crosses a river of width 1 km along the shortest possible path in 15 minutes. The velocity of the river water in km/hr is :
(1) 1 (2) 3
(3) 4 (4) $\sqrt{41}$

25. The path of one projectile in motion as seen from another moving projectile is :
(1) A straight line (2) A circle
(3) An ellipse (4) A parabola

26. A body is projected horizontally from the top of a tower with a velocity of 10 m/s. If it hits the ground at an angle of 45°, then the vertical component of velocity when it hits ground (in m/s) is
(1) $10\sqrt{2}$ (2) $5\sqrt{2}$
(3) 5 (4) 10

27. A body is projected with an angle θ. The maximum height reached is h. If the time of flight is 4s and g is 10 m/s^2, then value of h is
(1) 40 m (2) 20 m
(3) 5 m (4) 10 m

28. The equation of trajectory of a projectile is $y = 10x - \left(\frac{5}{9}\right)x^2$. If we assume g = 10 ms^{-2}. What will be the range of projectile?
(1) 36 m (2) 24 m
(3) 18 m (4) 9 m

29. A particle is projected with a velocity v such that its range on the horizontal plane is twice the greatest height attained by it. What is the range of the projectile?
(1) $\frac{4v^2}{5g}$ (2) $\frac{4g}{5v^2}$
(3) $\frac{v^2}{g}$ (4) $\frac{4v^2}{\sqrt{5g}}$

30. Two stones are projected with same velocity v at an angle θ and $(90° - \theta)$. If H and H_1 are the greatest heights in the paths, then what is the relation between R, H and H_1?
(1) $R = 4\sqrt{HH_1}$ (2) $R = \sqrt{HH_1}$
(3) $R = HH_1$ (4) None of these

31. A stone thrown at an angle θ to the horizontal reaches maximum height H. Then, the time of flight of stone will be
(1) $\sqrt{\frac{2H}{g}}$ (2) $2\sqrt{\frac{2H}{g}}$
(3) $2\frac{\sqrt{2H\sin\theta}}{g}$ (4) $\frac{\sqrt{2H\sin\theta}}{g}$

32. The X and Y co-ordinates of a particle are $x = A\sin\omega t$ and $y = 2A\sin\left(\omega t + \frac{\pi}{2}\right)$, then the motion of the particle is
(1) Circular
(2) Parabolic
(3) Elliptical anti clockwise
(4) Elliptical clockwise

33. For motion in two or three dimensions, the angle between velocity and acceleration is
(1) 0°
(2) 90°
(3) 180°
(4) Any angle between 0° & 180°

34. A particle moving with velocity $\vec{v} = k(y\hat{i} + x\hat{j})$, where k = constant. The general equation for its path is
[C = constant]
(1) $y = x^2 + C$ (2) $y^2 = x + C$
(3) $xy = C$ (4) $y^2 = x^2 + C$

35. The shape of trajectory of the motion of an object is determined by
(1) acceleration (2) initial position
(3) initial velocity (4) All of these

SECTION-B

ATTEMPT ANY 10 OF THE FOLLOWING SECTION

36. A particle has an initial velocity $3\hat{i} + 4\hat{j}$ and an acceleration of $0.4\hat{i} + 0.3\hat{j}$. Its speed after 10 sec is
(1) $7\sqrt{2}$ units (2) 7 units
(3) 8.5 units (4) 10 units

37. A moves with 65 km/h while B is coming back of A with 80 km/h. The relative velocity of B with respect to A is
(1) 80 km/h (2) 60 km/h
(3) 15 km/h (4) 145 km/h

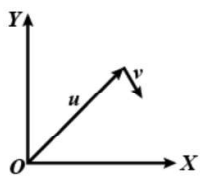
38. A river flow with a speed more than the maximum speed with which a person can swim in the still water. He intends to cross the river by shortest possible path (i.e., he wants to reach the point on the opposite bank which directly opposite to the starting point). Which of the following correct?
(1) He should start normal to the river bank.
(2) He should start in such a way that, he moves normal to the bank, relative to the bank.
(3) He should start in a particular (calculated) direction making an obtuse angle with the direction of water current.
(4) The man cannot cross the river, in that way.

39. A boat which has a speed of 5 km h^{-1} in still water crosses a river of width 1 km along the shortest possible path in 15 minutes. The velocity of the river water is
(1) 1 km h^{-1} (2) 3 km h^{-1}
(3) 4 km h^{-1} (4) $\sqrt{41}$ km h^{-1}

40. If t_m is the time taken by a projectile to achieve the maximum height, then the total time of flight T_f related to t_m as
(1) $t_m = 2\,T_f$ (2) $T_f = t_m$
(3) $T_f = 2t_m$ (4) None of these

41. The equation of trajectory of projectile is given by
$y = \frac{x}{\sqrt{3}} - \frac{gx^2}{20}$, where x and y are in metre.
The maximum range of the projectile is
(1) $\frac{8}{3}$m (2) $\frac{4}{3}$m
(3) $\frac{3}{4}$m (4) $\frac{3}{8}$m

42. Figure shows the orientation of two vectors u and v in the xy-plane.



If $u = a\hat{i} + b\hat{j}$ and $v = p\hat{i} + q\hat{j}$
Which of the following is correct
(1) a and p are positive while b and q are negative
(2) a, p and b are positive while q is negative
(3) a, q and b are positive while p is negative
(4) a, b, p and q are all positive

43. The horizontal range of a projectile fired at an angle of 15° is 50 m. If it is fired with the same speed at an angle of 45°, its range will be
(1) 60 m (2) 71 m
(3) 100 m (4) 141 m

44. In a two dimensional motion, instantaneous speed v_0 is a positive constant. Then, which of the following are necessarily true?
(1) The average velocity is not zero at any time
(2) Average acceleration must always vanish
(3) Displacement in equal time intervals are equal
(4) Equal path lengths are traversed in equal intervals

SPACE FOR ROUGH WORK

45. In a two dimensional motion, instantaneous speed v_0 is a positive constant. Then, which of the following are necessarily true?
(1) The acceleration of the particle is zero
(2) The acceleration of the particle is bounded
(3) The acceleration of the particle is necessarily in the plane of motion
(4) The particle must be undergoing a uniform circular motion

46. The x and y coordinates of the particle at any time are
$x = 5t - 2t^2$ and $y = 10t$ respectively, where x and y are in meters and t in seconds. The acceleration of the particle at t = 2s is
(1) 2 m/s^2 (2) –4 m/s^2
(3) –8 m/s^2 (4) 0

47. A particle is projected with some angle from the surface of the planet. The motion of the particle is described by the equation; $x = t$, $y = t - t^2$. Then match the following columns

	Column I (quantity)		Column II (magnitude only)
A.	Velocity of projection	1.	1
B.	Acceleration	2.	$\sqrt{2}$
C.	Time of flight	3.	2
D.	Maximum height attained	4.	$\frac{1}{4}$

(1) A-4; B-1; C-2; D-2 (2) A-2; B-3; C-1; D-2
(3) A-2; B-3; C-1; D-4 (4) A-3; B-4; C-3; D-2

48. Assertion: The two projectiles having same time of flight would have same range.
Reason: The two projectiles having same time of flight would have same maximum height.
(1) Both statement I and II are correct.
(2) Both statement I and II are incorrect.
(3) Statement I is correct but statement II is incorrect
(4) Statement II is correct but statement I is incorrect

49. A ball is thrown upwards and it returns to ground describing a parabolic path. Which of the following has the same value at the time of throw and the time of return?
I. Kinetic energy of the ball
II. Speed of the ball
III. Vertical component of velocity.
IV. Horizontal component of velocity.
(1) I, II and IV (2) II and III
(3) III and IV only (4) I, II and III

50. A projectile is given an initial velocity of $(\hat{i} + 2\hat{j})$ m/s where $\hat{i}$ is along the ground and $\hat{j}$ is along the vertical. If g = 10 m/s^2 the equation of its trajectory is
(1) $y = 2x - 5x^2$ (2) $y = x - 5x^2$
(3) $2y = 2x - 5x^2$ (4) $4y = 2x - 25x^2$

CHEMISTRY

SECTION-A

51. A sample of ammonium phosphate $(NH_4)_3PO_4$ contains 3.18 moles of hydrogen atoms. The number of moles of oxygen atoms in the sample is **[NCERT Pg. No. 18]**
(1) 0.265 (2) 0.795
(3) 1.06 (4) 4.00

52. Which has the maximum number of molecules among the following? **[NCERT Pg. No. 18]**
(1) 8 g H_2 (2) 64 g SO_2
(3) 44 g CO_2 (4) 48 g O_3

53. The total number of electrons in 1.6 g of CH_4 to that in 1.8 g of H_2O **[NCERT Pg. No. 18]**
(1) Double (2) Same
(3) Triple (4) One fourth

54. Which has maximum molecules? **[NCERT Pg. No. 18]**
(1) 7 g N_2O (2) 20 g H_2
(3) 16 g NO_2 (4) 16 g SO_2

SPACE FOR ROUGH WORK

55. The number of atoms in 0.1 mol of a tetraatomic gas is ($N_A = 6.02 \times 10^{23}$ mol^{-1}) **[NCERT Pg. No. 18]**

(1) 2.4×10^{22} (2) 6.026×10^{22}

(3) 2.4×10^{23} (4) 3.600×10^{23}

56. Volume occupied by one molecule of water (density = 1 g cm^{-3}) is **[NCERT Pg. No. 18]**

(1) 5.5×10^{-23} cm^3 (2) 9.0×10^{-23} cm^3

(3) 6.023×10^{-23} cm^3 (4) 3.0×10^{-23} cm^3

57. Haemoglobin contains 0.334% of iron by weight. The molecular weight of haemoglobin is approximately 67200. **[NCERT Pg. No. 18]**

The number of iron atoms (Atomic weight of Fe is 56) present in one molecule of haemoglobin is

(1) 4 (2) 6

(3) 3 (4) 2

58. In the reaction, $2SO_2 + O_2 \rightarrow 2SO_3$ when 1 mole of SO_2 and 1 mole of O_2 are made to react to completion **[NCERT Pg. No. 20]**

(1) All the oxygen will be consumed

(2) 1.0 mole of SO_3 will be produced

(3) 0.5 mole of SO_2 is remained

(4) All of these

59. Consider the following reaction sequence:

$S_8(s) + 8O_2(g) \rightarrow 8SO_2(g)$

$2SO_2(g) + O_2(g) \rightarrow 2SO_3(g)$

How many grams of SO_3 are produced from 1 mole S_8? **[NCERT Pg. No. 20]**

(1) 1280 g (2) 960 g

(3) 640 g (4) 320 g

60. What volume of oxygen gas (O_2) measured at 0°C and 1 atm, is needed to burn completely 1 L of propane gas (C_3H_8) measured under the same conditions? **[NCERT Pg. No. 20]**

(1) 10 L (2) 7 L

(3) 6 L (4) 5 L

61. 4 g of hydrogen reacts with 20 g of oxygen to form water. The mass of water formed is **[NCERT Pg. No. 20]**

(1) 24 g (2) 36 g

(3) 22.5 g (4) 40 g

62. Calculate the molality of solution containing 3 g glucose dissolved in 30 g of water. (molar mass of glucose = 180) **[NCERT Pg. No. 24]**

(1) 0.40 m (2) 0.56 m

(3) 0.091 m (4) 0.05 m

63. How many grams of NaOH should be added to water to prepare 250 ml solution of 2 M NaOH? **[NCERT Pg. No. 23]**

(1) 9.6×10^3 (2) 2.4×10^3

(3) 20 (4) 24

64. The total number of electrons in 4.2 g of N^{3-} ion is (NA is the Avogadro's number) **[NCERT Pg. No. 18]**

(1) 2.1 N_A (2) 4.2 N_A

(3) 3 N_A (4) 3.2 N_A

65. Number of Fe atoms in 100 g Haemoglobin if it contains 0.33% Fe. (Atomic mass of Fe = 56) **[NCERT Pg. No. 18]**

(1) 0.035×10^{23} (2) 35

(3) 3.5×10^{23} (4) 7×10^8

66. 1 mol of $KClO_3$ is thermally decomposed and excess of aluminium is burnt in the gaseous product. How many moles of Al_2O_3 are formed? **[NCERT Pg. No. 20]**

(1) 1 (2) 2

(3) 1.5 (4) 3

67. The amount of zinc required to produce 1.12 ml of H_2 at STP on treatment with dilute HCl will be **[NCERT Pg. No. 20]**

(1) 65 g (2) 0.065 g

(3) 32.5×10^{-4} g (4) 6.5 g

68. An organic compound containing C and H gave the following analysis C = 40%, H = 6.7%. Its empirical formula would be **[NCERT Pg. No. 19]**

(1) CH_4 (2) CH_2O

(3) $C_2H_4O_2$ (4) C_2H_4

69. For the formation of 3.65 g of HCl gas, what volume of hydrogen gas and chlorine gas are required at NTP conditions? **[NCERT Pg. No. 20]**

(1) 1 L, 1 L (2) 1.12 L, 2.24 L

(3) 3.65 L, 1.83 L (4) 1.12 L, 1.12 L

70. Mole fraction of solvent in aqueous solution of NaOH having molality of 3 is **[NCERT Pg. No. 23]**

(1) 0.3 (2) 0.05

(3) 0.7 (4) 0.95

71. Concentrated aqueous sulphuric acid is 98% H_2SO_4 by mass and has a density of 1.80 gmL^{-1}. Volume of acid required to make one litre of 0.1 M H_2SO_4 solution is **[NCERT Pg. No. 23]**

(1) 16.65 mL (2) 22.20 mL

(3) 5.55 mL (4) 11.10 mL

72. 6.025×10^{20} molecules of acetic acid are present in 500 ml of its solution. The concentration of solution is **[NCERT Pg. No. 23]**

(1) 0.002 M (2) 10.2 M

(3) 0.012 M (4) 0.001 M

73. 20.0 g of a magnesium carbonate sample decomposes on heating to give carbon dioxide and 8.0 g magnesium oxide. What will be the percentage purity of magnesium carbonate in the sample? (At. wt. : Mg = 24) **[Re-AIPMT-2015]**

(1) 60 (2) 84

(3) 75 (4) 96

74. A mixture of gases contains H_2 and O_2 gases in the ratio of 1 : 4 (w/w). What is the molar ratio of the two gases in the mixture? **[NCERT Pg. No. 18]**

(1) 2 : 1 (2) 1 : 4

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

75. How many grams of CH_3OH should be added to water to prepare 150 ml solution of 2 M CH_3OH? **[NCERT Pg. No. 23]**

(1) 9.6×10^3 (2) 2.4×10^3

(3) 9.6 (4) 2.4

76. The amount of zinc required to produce 224 ml of H_2 at STP on treatment with dilute H_2SO_4 will be (Zn = 65) **[NCERT Pg. No. 20]**

(1) 65 g (2) 0.065 g

(3) 0.65 g (4) 6.5 g

77. In the reaction,

$4NH_3(g) + 5O_2(g) \rightarrow 4NO(g) + 6H_2O(l)$

When 1 mole of ammonia and 1 mole of O_2 are made to react to completion **[NCERT Pg. No. 20]**

(1) All the oxygen will be consumed

(2) 1.0 mole of NO will be produced

(3) 1.0 mole of H_2O is produced

(4) All the ammonia will be consumed S

78. Volume of CO_2 obtained at STP by the complete decomposition of 9.85 gm $BaCO_3$ is (Mol. wt. of $BaCO_3$ = 197) **[NCERT Pg. No. 20]**

(1) 2.24 litre (2) 11.2 litre

(3) 0.85 litre (4) 0.32 litre

79. 2.5 litre of 1 M NaOH solution mixed with another 3 litre of 0.5 M NaOH solution. Then find out molarity of resultant solution. **[NCERT Pg. No. 23]**

(1) 2.8 M (2) 1.0 M

(3) 0.73 M (4) 0.50 M

80. An element, X has the following isotopic composition ^{56}X : 90% ^{57}X : 8% ^{59}X : 2.0%. The weighted average atomic mass of the naturally occurring element X is closest to **[NCERT Pg. No. 17]**

(1) 56.14 amu (2) 57.8 amu

(3) 60 amu (4) 55 amu

SPACE FOR ROUGH WORK

81. From 200 mg of CO_2 when x molecules are removed, 2.89×10^{-3} moles of CO_2 are left. x will be **[NCERT Pg. No. 18]**

(1) 10^{20} molecules (2) 10^{10} molecules

(3) 21 molecules (4) 10^{21} molecules

82. Mole fraction of solute in aqueous solution of 30% NaOH. **[NCERT Pg. No. 23]**

(1) 0.16 (2) 0.05

(3) 0.25 (4) 0.95

83. A : 1 a.m.u. = 1.66×10^{-24} gram.

R : Actual mass of one atom of C–12 is equal to 1.99×10^{-23} g. **[NCERT Pg. No. 17]**

(1) A and R are correct R is correct explanation of A.

(2) Both A and R are correct

(3) A is correct but R is wrong

(4) Both A and R are incorrect

84. A : Number of atoms in 2 mole of NH_3 is equal to number of atoms in 4 mole of CH_4. **[NCERT Pg. No. 18]**

R : Both are chemically similar species.

(1) A and R are correct R is correct explanation of A.

(2) Both A and R are correct

(3) A is correct but R is wrong

(4) Both A and R are incorrect

85. A : Mass of 1 gram molecule of H_2SO_4 is 98 gram.

R : One gram atom contains N_A atoms. **[NCERT Pg. No. 18]**

(1) A and R are correct R is correct explanation of A.

(2) Both A and R are correct

(3) A is correct but R is wrong

(4) Both A and R are incorrect

SECTION-B

ATTEMPT ANY 10 OF THE FOLLOWING SECTION

86. The maximum number of atoms present are in: **[NCERT Pg. No. 18]**

(1) 4 g He (2) 4 g O_2

(3) 4 g O_3 (4) 4 g H_2O_2

87. Number of moles of oxygen molecules in 16 mg is : **[NCERT Pg. No. 18]**

(1) 0.5 (2) 1

(3) 5×10^{-4} (4) 2

88. Which one has minimum number of atoms? **[NCERT Pg. No. 18]**

(1) 8 g oxygen (2) 1 g hydrogen

(3) 7 g nitrogen (4) 1.5 g helium

89. Maximum number of atoms belongs to (at STP) **[NCERT Pg. No. 18]**

(1) 5.0 L CO_2 (2) 5.6 L N_2

(3) 6.0 L of O_2 (4) All have equal atoms

90. 1 g atom of nitrogen represents : **[NCERT Pg. No. 18]**

(1) 14 g of nitrogen

(2) 22.4 L of N_2 at N.T.P.

(3) 11.2 L of N_2 at N.T.P.

(4) (1) and (3)

91. 1 g molecule of V_2O_5 contains : **[NCERT Pg. No. 18]**

(1) 5 moles of oxygen atom

(2) 2 moles of V atom

(3) 1 moles of oxygen atom

(4) (1) and (2)

92. For 3 moles of ammonia (g) which of the following is true? **[NCERT Pg. No. 18]**

(1) It contains 12 N_A atoms

(2) Volume at S.T.P. is 67.2 L

(3) Number of molecule is 1.80×10^{24}

(4) All are correct

SPACE FOR ROUGH WORK

93. Which of the following contains Avogadro's number of atoms? (Molar masses: C = 12, N = 14)

[NCERT Pg. No. 18]

(1) 6.00 g of H_2O (2) 4.00 g of CH_4

(3) 7.5 g of $C_6H_{12}0_6$ (4) (1) and (3)

94. The mass of carbon present in 0.1 mole of sodium ferricyanide $Na_3[Fe(CN)_6]$ is equal to:

[NCERT Pg. No. 18]

(1) Mass of carbon in 0.6 g molecule of $CO_2(g)$

(2) Mass of magnesium in 0.3 moles of $MgSO_4$

(3) Mass of carbon in 0.05 moles of sucrose

(4) All of these

95. Which one of the following pairs of gases contains the same number of molecules?

[NCERT Pg. No. 18]

(1) 16 g of O_2 and 14 g of N_2

(2) 8 g of O_2 and 22 g of CO_2

(3) 28 g of N_2 and 22 g of CO_2

(4) 32 g of O_2 and 32 g of N_2

96. A compound (80 g) on analysis gave C = 24 g, H= 4 g, O = 32 g. Its empirical formula is :

[NCERT Pg. No. 19]

(1) $C_2H_2O_2$ (2) C_2H_2O

(3) CH_2O_2 (4) CH_2O

97. How many moles magnesium phosphate, $Mg_3(PO_4)_2$, will contain 0.25 mole of oxygen atoms?

[NCERT Pg. No. 18]

(1) 2.5×10^{-2} (2) 0.02

(3) 3.125×10^{-2} (4) 1.25×10^{-2}

98. The ratio of masses of oxygen and nitrogen in a particular gaseous mixture is 1:4. The ratio of number of their molecule is : **[NCERT Pg. No. 18]**

(1) 1:4 (2) 1:8

(3) 7:32 (4) 3:16

99. Calculate mass % of oxygen in water,

[NCERT Pg. No. 18]

(1) 88.88% (2) 73.68 %

(3) 20.61% (4) 25.63 %

100. Calculate the number of Na^+ ion present in 142 amu of Na_2SO_4 in aqueous solution. **[NCERT Pg. No. 17]**

(1) 5 . (2) 2

(3) 1 (4) $2N_A$

BIOLOGY-I

SECTION-A

101. Cytological information like chromosome number, structure, behaviour are related with

[NCERT P.No. 30]

(1) numerical taxonomy (2) cytotaxonomy

(3) chemotaxonomy (4) all of these

102. Algin, carrageen and proteins are obtained from

[NCERT P.No. 32]

(1) red algae, brown algae, green algae respectively.

(2) brown algae, red algae, green algae respectively.

(3) red algae, green algae, brown algae respectively.

(4) green algae, brown algae, red algae respectively.

103. Which of the following example belong to the same class of algae? **[NCERT P.No. 32]**

(1) Chara, Fucus, Polysiphonia

(2) Volvox, Spirogyra, Chlamydomonas

(3) Porphyra, Ectocarpus, Ulothrix

(4) Sargassum, Laminaria, Gracilaria

104. A research student collected certain alga and' found that its cells contained both chlorophyll a and chlorophyll d as well as phycoerythrin. On the basis of his observation, the students conclude that the alga belongs to **[Application based]**

(1) rhodophyceae (2) bacillariophyceae

(3) chlorophyceae (4) phaeophyceae

105. Match the following **[NCERT P.No. 101]**

Column I	Column II
A. Adipose tissue	1. Nose
B. Stratified epithelium	2. Blood
C. Hyaline cartilage	3. Skin
D. Fluid connective tissue	4. Fat storage

Codes

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

106. Bone forming cells are: **[NCERT P.No. 104]**

(1) Osteoclasts (2) Osteoblasts
(3) Chondroblast (4) Chondroclasts

107. Which of the following are the three basic components of all type of connective tissue except blood? **[NCERT P.No. 102]**

(1) Cells, fibres and ground substances
(2) Fibroblast, reticular fibres and collagen
(3) Mast cells, lymphocytes and adipocyte
(4) Arteries, veins and capillaries

108. Which of the following epithelia forms the inner lining of trachea and fallopian tube? **[NCERT P.No. 103]**

(1) Cuboidal (2) Squamous
(3) Columnar (4) Ciliated columnar

109. student was given a sample to observe under the microscope. He observed and found that the sample is the most common type of spore involved in asexual reproduction in algae. Identify the spore. **[Application based]**

(1) Zoospore (2) Endospore
(3) Hypnospore (4) None of these

110. In class phaeophyceae, the plant body is usually attached to the substratum by a ___A___ and has a stalk, the ___B___ and leaf like photosynthetic organ- the ___C___ . **[NCERT P.No. 33]**

(1) A - holdfast, B - stipe, C - frond
(2) A - stipe, B - holdfast, C - frond
(3) A - frond, B - stipe, C - holdfast
(4) A - stipe, B - frond, C - holdfast

111. A bryophyte differs from pteridophytes in having **[NCERT P.No. 36]**

(1) archegonia.
(2) lack of vascular tissue.
(3) swimming antherozoids.
(4) independent gametophytes.

112. Protonema **[NCERT P.No. 36]**

(1) is a stage of gametophytic generation.
(2) is a creeping, green, branched and develops directly from a spore.
(3) produces lateral bud which forms leafy plant body.
(4) All of the above

113. Germinal epithelium of testis and ovary is made up of **[NCERT P.No. 102]**

(1) columnar epithelium
(2) squamous epithelium
(3) cuboidal epithelium
(4) stratified epithelium

114. Epithelial tissues arise from **[NCERT P.No. 101]**

(1) ectoderm (2) endoderm
(3) mesoderm (4) All of these

115. Inner lining of urinary bladder is composed of **[NCERT P.No. 101]**

(1) columnar epithelium
(2) squamous epithelium
(3) transitional epithelium
(4) pseudostratified epithelium

116. Which of the following tissue has a free surface? **[NCERT P.No. 103]**

(1) Connective tissue (2) Muscular tissue
(3) Epithelial tissue (4) Neural tissue

SPACE FOR ROUGH WORK

117. Mosses are of great ecological importance because of **[NCERT P.No. 35]**
(1) its contribution to prevent soil erosion.
(2) its contribution in ecological succession.
(3) its capability to remove CO from the atmosphere.
(4) both (1) and (2)

118. You are given an unknown plant to study in the laboratory. You find that it has chlorophyll, no xylem. Its multicellullar sex organs are enclosed in a layer of jacket cells. Its gametophyte stage is free living. The plant probably belongs to **[Application based]**
(1) chlorophyceae (2) bryophyte
(3) pteridophyte (4) gymnosperm

119. In bryophytes, male and female sex organs are called _____ and _____ respectively. **[NCERT P.No. 35]**
(1) microsporangia; macrosporangia
(2) male strobili; female strobili
(3) antheridia; archegonia
(4) androecium; gynoecium

120. Protonema and leafy stage are the predominant stage of the life cycle of **[NCERT P.No. 36]**
(1) moss (2) dicots
(3) liverwort (4) gymnosperm

121. Which of the following is not secreted by exocrine glands? **[NCERT P.No. 104]**
(1) Earwax (2) Oil
(3) Milk (4) None of these

122. Which of the following junctions facilitate the cells to communicate with each other by connecting the cytoplasm of adjoining cells? **[NCERT P.No. 102]**
(1) Tight junction (2) Adhering junction
(3) Gap junction (4) Both (2) and (3)

123. Cartilage is present at **[NCERT P.No. 104]**
(a) tip of nose
(b) between adjacent bones of vertebral column
(c) outer ear joints
(1) (a) and (b) (2) (b) and (c)
(3) (a) and (c) (4) (a), (b) and (c)

124. _____has hard and non-pliable ground substance rich in calcium salt and collagen fibres **[NCERT P.No. 105]**
(1) White fibrous tissue (2) Bone
(3) Cartilage (4) Yellow fibrous tissue

125. The heterosporous pteridophyte belonging to the class lycopsida is **[NCERT P.No. 38]**
(1) Selaginella (2) Psilotum
(3) Equisetum (4) Ptens

126. Which of the following pteridophytes belong to class pteropsida? **[NCERT P.No. 36]**
(1) Equisetum and Psilotum
(2) Lycopodium and Adiantum
(3) Selaginella and Pteris
(4) Pteris and Adiantum

127. Fruits are not formed in gymnosperms because of **[Application based]**
(1) absence of pollination.
(2) absence of seed.
(3) absence of fertilization.
(4) absence of ovary.

128. Place the following groups of plants in order, beginning with those that first appeared on the earth and progressing toward those that appeared most recently in time. **[Application based]**
(1) Gymnosperms, angiosperms, ferns, moss, algae
(2) Algae, moss, ferns, gymnosperms, angiosperms
(3) Moss, algae, ferns, angiosperms, gymnosperms
(4) Algae, ferns, angiosperms, gymnosperms, moss

129. Which of the following tissues joins bone to bone? **[NCERT P.No. 101]**
(1) Cartilage
(2) White fibrous connective tissue
(3) Ligament
(4) Areolar

130. Dense irregular connective tissue is present in **[NCERT P.No. 103]**
(1) skin (2) tendon
(3) ligament (4) both (2) and (3)

SPACE FOR ROUGH WORK

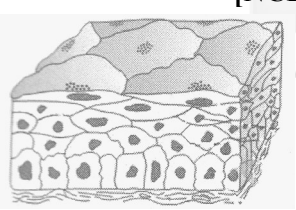
131. Matrix or ground substance in connective tissues is made up of..... **[NCERT P.No. 104]**
(1) tick proteins
(2) elastin fibres
(3) modified polysaccharides
(4) modified triglycerides

132. Where is the excess unused nutrition stored in our body? **[NCERT P.No. 102]**
(1) Aerolar tissue (2) Adipose tissue
(3) Both (1) and (2) (4) Blood

133. Which of the following statement is incorrect? **[Class Notes]**
(1) Double fertilization is unique to gymnosperms and monocotyledons.
(2) Sequoia, a gymnosperm, is one of the tallest tn species.
(3) Phaeophyceae members possess chlorophyll a and c, carotenoids and xanthophylls.
(4) Moss is a gametophyte which consists of two stages namely, protonemal stage and leafy stage.

134. In the alternation of generations the sporophytic generations is ... A... and and gametophytic generation is ... B He e A and B refer to **[NCERT P.No. 41]**
(1) A-2n, B-n (2) A-n, B-n
(3) A-2n, B-2n (4) A-n, B-2n

135. Identify the tissue and its related function. **[NCERT P.No. 101]**



(1) Simple cuboidal epithelium - Diffusion
(2) Simple squamous epithelium - Secretion and absorption
(3) Compound epithelium - Protection
(4) Compound epithelium - Diffusion

SECTION-B

ATTEMPT ANY 10 OF THE FOLLOWING SECTION

136. In which of the following gametophyte is not independent free living? **[NCERT P.No. 39]**
(1) Marchantia (2) Pteris
(3) Pinus (4) Funaria

137. In bryophytes and pteridophytes, transport of male gametes requires **[Application based]**
(1) Wind (2) Insects
(3) Birds (4) Water

138. An example of colonial alga is **[NCERT P.No. 30]**
(1) Volvox (2) Ulothrix
(3) Spirogyra (4) Chlorella

139. Zygotic meiosis is characteristic of **[Application based]**
(1) Fucus (2) Funaria
(3) Chlamydomonas (4) Marchantia

140. Select the mismatch **[NCERT P.No. 39]**
(1) Cycas - Dioecious
(2) Salvinia - Heterosporous
(3) Equisetum - Homosporous
(4) Pinus - Dioecious

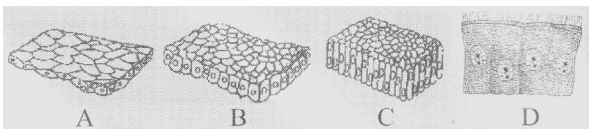
141. Double fertilization is exhibited by **[NCERT P.No. 41]**
(1) Algae (2) Fungi
(3) Angiosperms (4) Gymnosperms

142. Winged pollen grains are present in **[Class Notes]**
(1) Mustard (2) Cycas
(3) Pinus (4) Mango

143. Which of the following statements is correct? **[NCERT P.No. 38]**
(1) Ovules are not enclosed by ovary wall in gymnosperms
(2) Selaginella is heterosporous, while Salvinia is homosporous
(3) Stems are usually unbranched in both Cycas and Cedrus
(4) Horsetails are gymnosperms

144. The figure shows different human tissues labelled as A to D. Which option gives the correct identification of the label, its location and one feature?

[NCERT P.No. 104]



(1) D-Unicellular glandular epithelium, goblet cells, secrete saliva
(2) B-Squamous epithelium, walls of blood vessels, form a diffusion boundary
(3) A-Cuboidal epithelium, ducts of glands, secretion and absorption
(4) C-Columnar epithelium, lining of stomach, secretion and absorption

145. Which of the following cells are found in areolar connective tissue? **[NCERT P.No. 101]**
(1) Mast cells
(2) Macrophage
(3) Fibroblast
(4) All are correct

146. In which of the following types of gland, secretions are formed by the breakdown of entire cells **[NCERT P.No. 104]**
(1) Endocrine (2) Holocrine
(3) Merocrine (4) Autocrine

147. Perichondrium and Periosteum are: **[NCERT P.No. 105]**
(1) Fluid filled spaces seen in bones and cartilages.
(2) Functional units of cartilage and bones,
(3) Outer covering of cartilage and bones.
(4) Outer covering of neurons and muscle fibres.

148. Adjacent cells are interconnected by **[NCERT P.No. 102]**
(1) desmosomes (2) vacuoles
(3) mitochondria (4) E.R.

149. Tendons are: **[NCERT P.No. 105]**
(1) Cords of white fibrous tissue that connects muscles to bones.
(2) Cords of yellow fibrous tissue that connect muscles to bones.
(3) Sheet of white fibrous tissue that connect muscles to bones.
(4) Sheets of yellow fibrous tissue that connects muscles to bones.

150. Which cartilage is present at the end of long bones? **[NCERT P.No. 105]**
(1) Calcified cartilage (2) Hyaline cartilage
(3) Elastic cartilage (4) Fibrous cartilage

BIOLOGY-II

SECTION-A

151. Which of the following pairs is of unicellular algae? **[Class Notes]**
(1) Gelidium and Gracilaria
(2) Anabaena and Volvox
(3) Chlorella and Spirulina
(4) aminaria and Sargassum

152. Strobili or cones are found in **[NCERT P.No. 36]**
(1) Pteris (2) Marchantia
(3) Equisetum (4) Salvinia

153. Which of the following algae produce Carrageen? **[NCERT P.No. 32]**
(1) Blue-green algae (2) Green algae
(3) Brown algae (4) Red algae

154. Which of the following algae contains mannitol as reserve food material? **[NCERT P.No. 33]**
(1) Ulothrix (2) Ectocarpus
(3) Gracilaria (4) Volvox

155. Non-cellular layer that connects inner surface of the epithelial tissue to the connective tissue is **[NCERT P.No. 102]**
(1) basement membrane
(2) epidermis
(3) dermis
(4) either (2) or (3)

156. Epithelial cells are connected to basement membrane by **[NCERT P.No. 102]**
(1) Tight junctions (2) Adherens Junctions
(3) Desmosomes (4) Hemidesmosomes

SPACE FOR ROUGH WORK

157. The polysaccharide present in the matrix of cartilage is known as **[NCERT P.No. 101]**
(1) cartiiagin (2) ossein
(3) chondroitin (4) casein

158. Question : Mast cells of connective tissue contain **[NCERT P.No. 103]**
(1) vasopressin and relaxin
(2) heparin and histamine
(3) heparin and calcitonin
(4) serotonin and melanin

159. Genera like Selaginella and Salvinia produce two kinds of spores. Such plants are known as: **[NCERT P.No. 38]**
(1) Heterosporous (2) Homosorus
(3) Heterosorus (4) Homosporous

160. Match the following **[NCERT P.No. 38]**

Column-I (Classes)		Column-II (Examples)	
A.	Psilopsida	I.	*Dryopteris, Pteris, Adiantum*
B.	Lycopsida	II.	*Equisetum*
C.	Sphenopsida	III.	*Selaginella*
D.	Pteropsida	IV.	*Lycopodium*
		V.	*Psilotum*

(1) A - V; B - III; C - II; D - I
(2) A - I; B - II; C - III; D - IV
(3) A - IV; B - III; C - II; D - I
(4) A - III; B - V; C - I; D - II

161. Match the column-I with column-II and select the correct answer using the codes given below. **[Mixed Chapter]**

Column-I (Group of Plant Kindgdom)		Column-II (Examples)	
A.	Algae	I.	*Solanum tuberosum*
B.	Fungi	II.	*Equisetum*
C.	Angiosperm	III.	*Cycas*
D.	Pteridophyte	IV.	*Chlamydomonas*
E.	Gymnosperm	V.	*Rhizopus*

(1) A - V; B - IV; C - I; D - II; E - III
(2) A - IV; B - V; C - I; D - II; E - III
(3) A - IV; B - I; C - V; D - II; E - III
(4) A - IV; B - I; C - V; D - III; E - II

162. Statement I: Most-algal genera are haplontic.
Statement II: The dominant phase in all Bryophytes is gametophyte. **[NCERT P.No. 35]**
(1) Both statement I and II are correct.
(2) Both statement I and II are incorrect.
(3) Statement I is correct but statement II is incorrect.
(4) Statement II is correct but statement I is incorrect.

163. During an injury nasal septum gets damaged and for its recovery which cartilage is preferred? **[NCERT P.No. 105]**
(1) calcified cartilage (2) elastic cartilage
(3) fibrous cartilage (4) hyaline cartilage

164. Protein not found in the connective tissues is **[NCERT P.No. 105]**
(1) actin (2) ossein
(3) collagen (4) elastin

165. What type of epithelium is the Urothelium? **[NCERT P.No. 103]**
(1) simple squamous
(2) stratified squamous keratinized
(3) pseudo-stratified non ciliated
(4) transitional

166. Which of the following cells of connective tissue secrete antibodies? **[NCERT P.No. 102]**
(1) Plasma cells. (2) Mast cells.
(3) Adipose cells. (4) Reticular cells

167. Statement I: in numerical taxonomy observable characters are not given equal importance.
Statement II: More than 20 characters can't be studied at a time in numerical taxonomy. **[NCERT P.No. 30]**
(1) Both statement I and II are correct.
(2) Both statement I and II are incorrect.
(3) Statement I is correct but statement II is incorrect.
(4) Statement II is correct but statement I is incorrect.

SPACE FOR ROUGH WORK

168. Statement I: Bryophytes are amphibians of plant kingdom.
Statement II: They live in soil but depend on water for sexual reproauction. **[NCERT P.No. 35]**
(1) Both statement I and II are correct.
(2) Both statement I and II are incorrect.
(3) Statement I is correct but statement II is incorrect.
(4) Statement II is correct but statement I is incorrect.

169. Which of the following statement(s) about algae is/ are correct? **[NCERT P.No. 30]**
(i) Algae are chlorophyll bearing simple, thalloid, heterotrophic and aquatic (both fresh water and marine) organisms.
(ii) Algae reproduce by vegetative means only.
(iii) Fusion of two gametes dissimilar in size is termed as oogamous.
(iv) A few of the massive forms of algae such as kelps, form massive plant bodies.
(1) Only (i) (2) Both (i) and (iii)
(3) Only (iv) (4) All of these

170. Which of the following statement(s) is/are correct about gemmae? **[NCERT P.No. 35]**
(i) These are specialised structures by which asexual reproduction take place in liverworts.
(ii) They are green, multicellular and asexual buds.
(iii) They develop in small receptacles called gemma cups.
(iv) They detach from parent body and germinate to form new individuals.
(1) (i) and (ii) (2) (ii) and (iii)
(3) (i), (ii) and (iii) (4) All of these

171. Find the incorrectly matched pair. **[NCERT P.No. 105]**
(1) Unicellular glandular cells - Goblet cell
(2) Saliva - Exocrine secretion
(3) Fusiform fibres - Smooth muscle
(4) Cartilage-Areolar tissue

172. Which of the following statement(s) regarding cell junctions is/are correct ? **[NCERT P.No. 104]**
(1) Tight junctions help to stop substances from leaking across a tissue.
(2) Adhering junctions perform cementing to keep neighbouring cells together.
(3) Gap junctions facilitate the cells to communicate with each other by connecting the cytoplasm of adjoining cells, for rapid transfer of ions, small molecules and sometimes big molecules.
(4) All of the above

173. Which of the following statement is incorrect regarding cuboidal epithelium? **[NCERT P.No. 103]**
(1) It is an epithelial tissue.
(2) It is composed of a single layer of cubelike cells.
(3) They are found in the walls of blood vessels and air sacs of lungs.
(4) Secretion and absorption are the main functions of these tissue.

174. Bone forming cells are: **[NCERT P.No. 105]**
(1) Osteoclasts
(2) Osteoblasts
(3) Chondroblast
(4) Chondroclasts

175. Refer to the following statement(s) and identify the group of plant which is being described by the given z statements? **[NCERT P.No. 35]**
(i) They include various mosses and liverworts that are found commonly growing in moist shaded areas in the hills.
(ii) They lack true roots, stem or leaves.
(iii) The main plant body is haploid.
(iv) They produce a multicellular body sporophyte which is not free living but attached to the' photosynthetic gametophyte and derives nourishment fmm it.
(1) Algae (2) Fungi
(3) Bryophytes (4) Pteridophytes

SPACE FOR ROUGH WORK

176. Which of the following group of plant is being described by the given statements? **[NCERT P.No. 41]**

(i) They are plants in which the ovules are not enclosed by any ovary wall and remain exposed before and after fertilization.

(ii) The giant red wood tree Sequoia is one of the tallest tree species of the group.

(iii) The roots are generally tap roots.

(iv) They are heterosporous and they produce haploid microspores and megaspores.

(1) Algae (2) Bryophytes

(3) Gymnosperms (4) Pteridophytes

177. Which of the following statements with respect to gymnosperms and angiosperms is/are correct? **[NCERT P.No. 41]**

(i) The process of double fertilization is present in gymnosperms.

(ii) Angiosperms range in size from microscopic Wolffia to tall trees of Sequoia.

(iii) In gymnosperms, the seeds are not covered.

(iv) In gymnosperms, the male and female gametophyte have an independent free living existence.

Of the above statements

(1) (i) and (ii) (2) (iii) only

(3) (ii) and (iii) (4) (iii) and (iv)

178. Which of the following statement(s) is/are correct about angiosperms? **[NCERT P.No. 41]**

(i) In angiosperms or flowering plants, the pollen grains and ovules are developed in specialised structure called flowers.

(ii) They are divided into two classes: the dicotyledons, and the monocotyledons.

(iii) The male sex organ in a flower is the pistil or the carpel.

(iv) The female sex organ is the stamen.

(1) Only (i) (2) Both (i) and (ii)

(3) Both (ii) and (iv) (4) All of these

179. Trapped dust particles are pushed out of respiratory tract by: **[NCERT P.No. 103]**

(1) Ciliated epithelium

(2) Compound epithelium.

(3) Glandular epithelium.

(4) Squamous epithelium.

180. Stratified squamous keratinised epithelium seen in **[NCERT P.No. 101]**

(1) epidermis of skin (2) liver

(3) oesophagus (4) kidney

181. Camel's hump is composed of tissue which provides water when oxidized. It is **[NCERT P.No. 103]**

(1) skeletal tissue (2) areolar tissue

(3) adipose tissue (4) muscular tissue

182. Which one of the following is the most abundant protein in the animals? **[NCERT P.No. 103]**

(1) Lectin (2) Insulin,

(3) Haemoglobin (4) Collagen

183. Read carefully the following statements about sexual fertilisation in angiosperms. **[NCERT P.No. 41]**

(i) Pollen tube carries the male gamete towards archegonia and discharge contents in the mouth of archegonium.

(ii) A zygote is obtained when a male gamete fuses with egg.

(iii) Zygote develops into embryo and embryo into seeds.

(iv) The seeds so obtained are naked.

Which of the statement given above are correct?

(1) (i) and (ii) only (2) (i), (ii) and (iv)

(3) Only (ii) and (iii) (4) (i), (ii), (iii) and (iv)

184. Glands which release the terminal part of secretory cells as a part of secretion are called: **[NCERT P.No. 102]**

(1) Holocrine glands. (2) Apocrine glands

(3) Merocrine glands. (4) Mixocrine glands.

SPACE FOR ROUGH WORK

185. The type of cartilage present in the epiglottis pinna and tip of the nose is **[NCERT P.No. 103]**

(1) Calcified (2) Fibrous
(3) Elastic (4) Hyaline

SECTION-B

ATTEMPT ANY 10 OF THE FOLLOWING SECTION

186. Which of the following statements about algae is/are correct? **[NCERT P.No. 30]**

(i) Algae are chlorophyll-bearing simple, thalloid, heterotrophic and aquatic (both fresh water and marine) organisms.
(ii) Algae reproduce by vegetative means only.
(iii) Fusion of two gametes dissimilar in size is termed as oogamous.
(iv) A few of the massive forms of algae such as kelps, form massive plant bodies.

(1) Only (i) (2) Both (i) and (iii)
(3) Only (iv) (4) All of these

187. Which of the following statement(s) is/are correct about gemmae? **[NCERT P.No. 35]**

(i) These are specialised structures by which asexual reproduction takes place in liverworts.
(ii) They are green, multicellular and asexual buds.
(iii) They develop in small receptacles called gemma cups.
(iv) They detach from parent body and germinate to form new individuals.

(1) (i) and (ii) (2) (ii) and (iii)
(3) (i), (ii) and (iii) (4) All of these

188. Refer to the following statement(s) and identify the group of plants which is being described by the given statements? **[Applicaiton based]**

(i) They include various mosses and liverworts that are found commonly growing in moist shaded areas in the hills.
(ii) They lack true roots, stem or leaves.
(iii) The main plant body is haploid.
(iv) They produce a multicellular body sporophyte which is not free living but attached to the photosynthetic gametophyte and derives nourishment from it.

(1) Algae (2) Fungi
(3) Bryophytes (4) Pteridophytes

189. **Assertion:** Selaginella and Salvinia are homosporous.
Reason: in Selaginella and Salvinia, similar kind of spores are produced. **[NCERT P.No. 38]**

(1) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(2) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(3) If the Assertion is correct but Reason is incorrect.
(4) If both the Assertion and Reason are incorrect.

190. **Assertion:** Each cell of the embryo sac is haploid in angiosperms.
Reason: in angiosperms, meiosis proceeds embryo sac formation. **[NCERT P.No. 30]**

(1) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(2) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(3) If the Assertion is correct but Reason is incorrect.
(4) If both the Assertion and Reason are incorrect.

191. Floridean starch has structure similar to

(1) Amyloectin and glycogen
(2) Mannitol and algin
(3) Laminarin and cellulose
(4) Starch and cellulose

192. _____ represent the reproductive organs amongst gymnosperms.

(1) Prothallus (2) Capsules
(3) Setae (4) Cones

SPACE FOR ROUGH WORK

193. Cuboidal epithelium with brush border of microvilli is found in. **[NCERT P.No. 102]**
(1) Proximal convoluted tubule of nephron
(2) Eustachian tube
(3) Lining of intestine
(4) Ducts of salivary gland

194. Large amoeboid cells, that are a part of our innate immune system, found in the areolar tissue are called as: **[NCERT P.No. 101]**
(1) Macrophages (2) Mast cells
(3) Fibroblasts (4) Adipocytes

195. Which type of tissue forms glands? **[NCERT P.No. 102]**
(1) Nervous (2) Epithelium
(3) Muscular (4) Connective

196. The most abundant and widely distributed tissue in the bodies of complex animals is: **[NCERT P.No. 105]**
(1) Epithelium (2) Connective
(3) Muscular (4) Neural

197. The kind of epithelium which forms the inner walls of blood vessels is **[NCERT P.No. 101]**
(1) cuboidal epithelium
(2) columnar epithelium
(3) celiated columnar epithelium
(4) squamous epithelium

198. Bone forming cells are: **[NCERT P.No. 105]**
(1) Osteoclasts (2) Osteoblasts
(3) Chondroblast (4) Chondroclasts

199. Adjacent cells are interconnected by **[NCERT P.No. 101]**
(1) desmosomes (2) vacuoles
(3) mitochondria (4) E.R.

200. The cell juctions called tight, adhering and gap junctions are found in **[NCERT P.No. 101]**
(1) muscular tissue (2) connective tissue
(3) Epithelial tissue (4) neural tissue

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK