

**TEST SERIES - NEET****PART TEST - XI/01****TEST CODE PT - XI/01**

Name of the Candidate : \_\_\_\_\_

Roll No. \_\_\_\_\_

Time : 3 Hours 20 Minutes

Maximum Marks : 720

Date : \_\_\_\_\_

**Syllabus****PHYSICS** : Units & Measurements, Motion in a Straight Line, Motion in a Plane and Laws of Motion**CHEMISTRY** : Some Basic Concepts of Chemistry, Structure of Atom, Classification of Elements and Periodicity in Properties**BOTANY** : The Living World, Biological Classification, Plant Kingdom**ZOOLOGY** : Animal Kingdom, Structural Organisation in Animals**INSTRUCTIONS**

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball Point Pen only.
2. The test is of 3 hours 20 minutes duration and the test booklet contains 200 Multiple choice questions. Which have four options with a single correct answer.
3. This test consists of Physics, Chemistry, Botany and Zoology questions with equal weightage of 180 marks.
4. Each question is of 4 marks. For each correct response the candidate will get 4 marks. For each incorrect response, 1 mark will be deducted from the total score. The maximum marks are 720.
5. There are four parts in the question paper, consisting Part-I Physics (Q.no.1 to 50), Part-II Chemistry (Q.no. 51 to 100), Part-III Botany (Q. no. 101 to 150) and Part-IV Zoology (Q. no.151 to 200). Each part is divided into two Sections, Section-A consists of 35 multiple choice questions & Section-B consists of 15 Multiple choice questions, out of these 15 questions candidates can choose to attempt any 10 questions.

	Parts		Physics	Chemistry	Botany	Zoology	Total
	Sections						
Questions	Section A	35	35	35	35	140	200
	Section B	15	15	15	15	60	
To Attempt	Section A	35	35	35	35	140	180
	Section B	10	10	10	10	40	

6. Candidates are advised to read all 15 questions in each subject of Section-B before they start attempting the question paper. In the event of a candidate attempting more than ten questions, the first ten questions answered by the candidate shall be evaluated.
7. Use Blue/Black Ball Point Pen only for writing particulars/markings responses on OMR Sheet.
8. Do not fold or make any stray marks on the Answer Sheet. Rough work is to be done on the space provided for this purpose.

## PART-I: PHYSICS

## Section-A

1. The dimensional formula of latent heat is:  
[NCERT Page 7]
- (1)  $[M^0LT^{-2}]$  (2)  $[MLT^{-2}]$   
(3)  $[M^0L^2T^{-2}]$  (4)  $[ML^2T^{-2}]$
2. A person travels  $x$  distance with velocity  $v_1$  and then  $x$  distance with velocity  $v_2$  in the same direction. The average velocity of the person is  $v$ , then the relation between  $v$ ,  $v_1$  and  $v_2$  will be : [NCERT Page 14]
- (1)  $v = v_1 + v_2$  (2)  $v = \frac{v_1 + v_2}{2}$   
(3)  $\frac{2}{v} = \frac{1}{v_1} + \frac{1}{v_2}$  (4)  $\frac{1}{v} = \frac{1}{v_1} + \frac{1}{v_2}$
3. Given below are two statements :  
**Statement (I)** : The limiting force of static friction depends on the area of contact and independent of materials.  
**Statement (II)** : The value of kinetic friction is independent of the area of contact and depends on materials.  
In the light of the above statements, choose the most appropriate answer from the options given below : [NCERT Page 60]
- (1) Statement I is correct but Statement II is incorrect  
(2) Statement I is incorrect but Statement II is correct  
(3) Both Statement I and Statement II are incorrect  
(4) Both Statement I and Statement II are correct
4. A car starts from rest, attains a velocity of  $18 \text{ kmh}^{-1}$  with an acceleration of  $0.5 \text{ ms}^{-2}$ , travels 4 km with this uniform velocity and then comes to halt with a uniform deceleration of  $0.2 \text{ ms}^{-2}$ . The total time of travel of the car is [NCERT Page 18]
- (1) 853 s (2) 800 s (3) 855 s (4) 835 s
5. A man of mass 60 kg is in a lift moving down with an acceleration of  $1.8 \text{ m s}^{-2}$ . The force exerted by the floor on him is [NCERT Page 65]
- (1) 588 N (2) 480 N (3) zero (4) 696 N
6. The angle between velocity and acceleration of a particle describing uniform circular motion is [NCERT Page 42]
- (1)  $180^\circ$  (2)  $45^\circ$  (3)  $90^\circ$  (4)  $60^\circ$
7. Consider the following statements
- I. If  $x = a^n$ , then fractional error  $\Delta x/x$ , is equal to  $\left(\frac{\Delta a}{a}\right)$ .  
II. The relative error and percentage error truly indicates the accuracy of a measurement  
III. Random error can be minimized by taking large number of observations at a time.  
Select the correct option
- (1) I only (2) II only  
(3) I and II both (4) II and III both

8. The coefficient of static friction between two surfaces depends upon [NCERT Page-60]

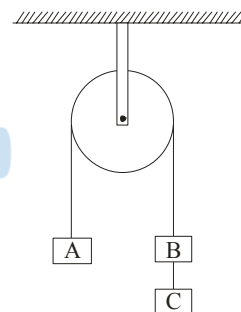
- (1) the normal reaction  
(2) the nature of surfaces in contact  
(3) the magnitude of applied force  
(4) None of these

9. Match List I with List II [NCERT Page 2, 3]

List – I	List - II
A. Surface tension	I. $\text{Kg m}^{-1} \text{ s}^{-1}$
B. Pressure	II. $\text{Kg ms}^{-1}$
C. Viscosity	III. $\text{Kg m}^{-1} \text{ s}^{-2}$
D. Impulse	IV. $\text{Kg s}^{-2}$

Choose the correct answer from the options given below:

- (1) A-IV, B-III, C- II, D-I (2) A-IV, B-III, C-I, D-II  
(3) A-III, B-IV, C-I, D-II (4) A-II, B-I, C-III, D-IV
10. Three equal weights A, B and C of mass 2 kg each are hanging on a string over a fixed frictionless pulley as shown in the figure. The tension in the string connecting weight B and C is (given,  $g = 9.8 \text{ ms}^{-2}$ ) [NCERT Page 65]



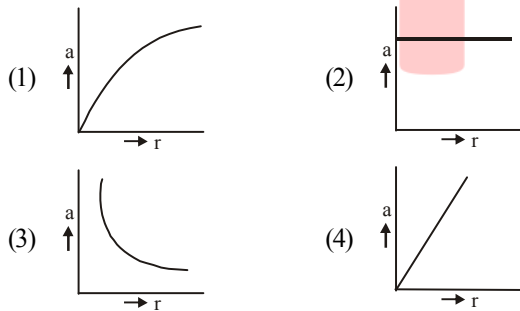
- (1) zero (2) 9.8 N  
(3) 13.3 N (4) 19.6 N
11. Dimensions of  $\frac{1}{\mu_0 \epsilon_0}$ , where symbols have their usual meaning, are [NCERT Page 7]
- (1)  $[L^{-1}T]$  (2)  $[L^{-2}T^2]$   
(3)  $[L^2T^{-2}]$  (4)  $[LT^{-1}]$
12. A screw gauge gives the following reading when used to measure the diameter of a wire.  
Main scale reading : 0 mm  
Circular scale reading : 52 divisions  
Given that 1mm on main scale corresponds to 100 divisions of the circular scale. The diameter of wire from the above data is
- (1) 0.052 cm (2) 0.026 cm  
(3) 0.005 cm (4) 0.52 cm

13. Given below are two statements :  
**Statement (I)** : Planck's constant and angular momentum have same dimensions.  
**Statement (II)** : Linear momentum and moment of force have same dimensions.  
 In the light of the above statements, choose the correct answer from the options given below : [NCERT Page 7]
- (1) Statement I is true but Statement II is false
  - (2) Both Statement I and Statement II are false
  - (3) Both Statement I and Statement II are true
  - (4) Statement I is false but Statement II is true

14. Projectiles A and B are thrown at angles of  $45^\circ$  and  $60^\circ$  with vertical respectively from top of a 400 m high tower. If their ranges and times of flight are same, the ratio of their speeds of projection  $v_A : v_B$  is:  
 [Take  $g = 10 \text{ ms}^{-2}$ ] [NCERT Page 39, 40]
- (1)  $1 : \sqrt{3}$
  - (2)  $\sqrt{2} : 1$
  - (3)  $1 : 2$
  - (4)  $1 : \sqrt{2}$

15. An average force of 125 N is applied on a machine gun firing bullets each of mass 10 g at the speed of 250 m/s to keep it in position. The number of bullets fired per second by the machine gun is : [NCERT Page 54]
- (1) 5
  - (2) 50
  - (3) 100
  - (4) 25

16. If a body moving in circular path maintains constant speed of  $10 \text{ ms}^{-1}$ , then which of the following correctly describes relation between acceleration and radius?  
 [NCERT Page 42]



17. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.  
**Assertion A** : When a body is projected at an angle  $45^\circ$ , it's range is maximum.  
**Reason R** : For maximum range, the value of  $\sin 2\theta$  should be equal to one.  
 In the light of the above statements, choose the correct answer from the options given below:

- [NCERT Page 39]
- (1) Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
  - (2) Both **A** and **R** are correct **R** is the correct explanation of **A**
  - (3) **A** is true but **R** is false
  - (4) **A** is false but **R** is true

18. A ball is released from a height  $h$ . If  $t_1$  and  $t_2$  be the time required to complete first half and second half of the distance respectively. Then, choose the correct relation between  $t_1$  and  $t_2$ . [NCERT Page 18, 19]

- (1)  $t_1 = (\sqrt{2})t_2$
- (2)  $t_1 = (\sqrt{2} - 1)t_2$
- (3)  $t_2 = (\sqrt{2} + 1)t_1$
- (4)  $t_2 = (\sqrt{2} - 1)t_1$

19. The area of a square is  $5.29 \text{ cm}^2$ . The area of 7 such squares taking into account the significant figures is:  
 [NCERT Page 3, 4]
- (1)  $37 \text{ cm}^2$
  - (2)  $37.030 \text{ cm}^2$
  - (3)  $37.03 \text{ cm}^2$
  - (4)  $37.0 \text{ cm}^2$

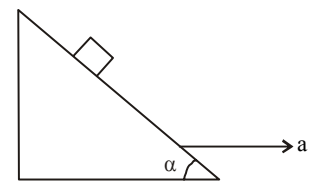
20. A particle has an initial velocity  $3\hat{i} + 4\hat{j}$  and an acceleration of  $0.4\hat{i} + 0.3\hat{j}$ . Its speed after 10 sec is [NCERT Page 37, 38]
- (1)  $7\sqrt{2}$  units
  - (2) 7 units
  - (3) 8.5 units
  - (4) 10 units

21. If two vectors  $\vec{A}$  and  $\vec{B}$  having equal magnitude  $R$  are inclined at an angle  $\theta$ , then [NCERT Page 34]

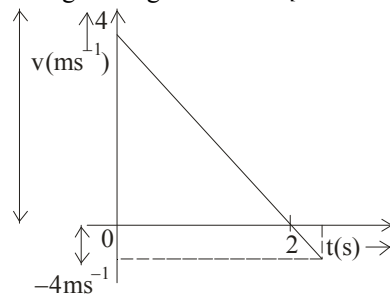
- (1)  $|\vec{A} - \vec{B}| = \sqrt{2} R \sin\left(\frac{\theta}{2}\right)$
- (2)  $|\vec{A} + \vec{B}| = 2R \sin\left(\frac{\theta}{2}\right)$
- (3)  $|\vec{A} + \vec{B}| = 2R \cos\left(\frac{\theta}{2}\right)$
- (4)  $|\vec{A} - \vec{B}| = 2R \cos\left(\frac{\theta}{2}\right)$

22. A block is kept on a frictionless inclined surface with angle of inclination ' $\alpha$ '. The incline is given an acceleration ' $a$ ' to keep the block stationary. Then  $a$  is equal to [NCERT Page 61]

- (1)  $g \operatorname{cosec} \alpha$
- (2)  $g / \tan \alpha$
- (3)  $g \tan \alpha$
- (4)  $g$



23. Given below is a velocity-time graph for an object in motion along a straight line. [NCERT Page 14,15,16,17]



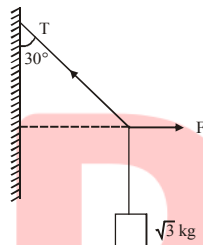
With reference to the above given figure, match the Column I (displacement/distance) with Column II (magnitude) and select the correct answer from the options given below.

Column I	Column II
A. The distance covered by the object in time $t = 0$ s to $t = 2$ s.	1. 8m
B. The acceleration of the object in time $t = 0$ s to $t = 2$ s.	2. $-2 \text{ ms}^{-2}$
C. The displacement of the object in time $t = 0$ s to $t = 4$ s.	3. 4m
D. The distance of object in time $t = 0$ s to $t = 4$ s	4. 0

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

24. A block of  $\sqrt{3}\text{kg}$  is attached to a string whose other end is attached to the wall. An unknown force  $F$  is applied so that the string makes an angle of  $30^\circ$  with the wall. The tension  $T$  is : (Given  $g = 10 \text{ ms}^{-2}$ )



[NCERT Page 58, 59]

- (1) 20N (2) 25N (3) 10N (4) 15N

25. The trajectory of projectile, projected from the ground is given by  $y = x - \frac{x^2}{20}$ . Where  $x$  and  $y$  are measured in meter. The maximum height attained by the projectile will be.

[NCERT Page 39]

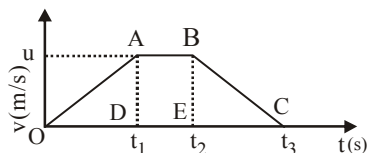
- (1) 5m (2)  $10\sqrt{2}\text{m}$  (3) 200m (4) 10m

26. The resistance  $R = \frac{V}{I}$  where  $V = (200 \pm 5) \text{ V}$  and  $I = (20 \pm 0.2) \text{ A}$ , the percentage error in the measurement of  $R$  is:

- (1) 3.5% (2) 5.5% (3) 7% (4) 3%

27. The velocity time graph of the motion of the body is as shown below

[NCERT Page 16,17]



The total distance travelled by the body during the motion is equal to

- (1)  $\frac{1}{2} (AD + BE) \times OC$  (2)  $\frac{1}{2} (OA + BC) \times OC$   
 (3)  $\frac{1}{2} (OC + AB) \times AD$  (4)  $\frac{1}{2} (OA + AB) \times BC$

28. If the radius of curvature of the path of two particles of same mass are in the ratio 3 : 4, then in order to have constant centripetal force, their velocities will be in the ratio of: [NCERT Page 63]

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

29. The trajectory of a projectile in a vertical plane is  $y = \alpha x - \beta x^2$ , where  $\alpha$  and  $\beta$  are constants and  $x$  &  $y$  are respectively the horizontal and vertical distances of the projectile from the point of projection. The angle of projection  $\theta$  and the maximum height attained  $H$  are respectively given by [NCERT Page 39]

- (1)  $\tan^{-1} \alpha, \frac{4\alpha^2}{\beta}$  (2)  $\tan^{-1} \beta, \frac{\alpha^2}{2\beta}$   
 (3)  $\tan^{-1} \left( \frac{\beta}{\alpha} \right), \frac{\alpha^2}{\beta}$  (4)  $\tan^{-1} \alpha, \frac{\alpha^2}{4\beta}$

30. The equation of state of a real gas is given by

$$\left( P + \frac{a}{V^2} \right) (V - b) = RT$$

where  $P, V$  and  $T$  are pressure, volume and temperature respectively and  $R$  is the universal gas constant. The dimensions of  $\frac{a}{b^2}$  is similar to that of:

[NCERT Page 8]

- (1)  $PV$  (2)  $P$  (3)  $RT$  (4)  $R$

31. A boy reaches the airport and finds that the escalator is not working. He walks up the stationary escalator in time  $t_1$ . If he remains stationary on a moving escalator then the escalator takes him up in time  $t_2$ . The time taken by him to walk up on the moving escalator will be: [NCERT Page 14]

- (1)  $\frac{t_1 t_2}{t_2 - t_1}$  (2)  $\frac{t_1 + t_2}{2}$   
 (3)  $\frac{t_1 t_2}{t_2 + t_1}$  (4)  $t_2 - t_1$

32. When a car is at rest, its driver sees raindrops falling on it vertically. When driving the car with speed  $v$ , he sees that raindrops are coming at an angle  $60^\circ$  from the horizontal. On further increasing the speed of the car to  $(1 + \beta)v$ , this angle changes to  $45^\circ$ . The value of  $\beta$  is close to:

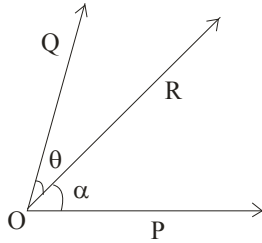
[NCERT Page 31]

- (1) 0.73 (2) 0.41 (3) 0.37 (4) 0.50

33. If force ( $F$ ), velocity ( $V$ ) and time ( $T$ ) are considered as fundamental physical quantity, then dimensional formula of density will be: [NCERT Page 7]

- (1)  $FV^{-2}T^2$  (2)  $FV^{-4}T^{-2}$   
 (3)  $FV^4T^{-6}$  (4)  $F^2V^{-2}T^6$

34. Two vectors P and Q are inclined at an angle  $\theta$  and R is their resultant as shown in the figure.



Keeping the magnitude and the angle of the vectors same, if the directions of P and Q are interchanged, then there is a change in which of the following with regard to R?

[NCERT Page 34]

- (1) Magnitude  
 (2) Direction  
 (3) Both magnitude and direction  
 (4) None of the above
35. A girl standing on road holds her umbrella at  $45^\circ$  with the vertical to keep the rain away. If she starts running without umbrella with a speed of  $15\sqrt{2} \text{ kmh}^{-1}$ , the rain drops hit her head vertically. The speed of rain drops with respect to the moving girl is:

[NCERT Page 31]

- (1)  $30 \text{ kmh}^{-1}$                       (2)  $\frac{25}{\sqrt{2}} \text{ kmh}^{-1}$   
 (3)  $\frac{30}{\sqrt{2}} \text{ kmh}^{-1}$                       (4)  $25 \text{ kmh}^{-1}$

**Section-B**

36. In an expression  $a \times 10^b$ : [NCERT Page 3, 4]  
 (1) a is order of magnitude for  $b \leq 5$   
 (2) b is order of magnitude for  $a \leq 5$   
 (3) b is order of magnitude for  $5 < a \leq 10$   
 (4) b is order of magnitude for  $a \geq 5$
37. Select the incorrect statements from the following.  
 I. Average velocity is path length divided by time interval.  
 II. In general, speed is greater than the magnitude of the velocity.  
 III. A particle moving in a given direction with a non-zero velocity can have zero speed.  
 IV. The magnitude of average velocity is equal to the average speed. [NCERT Page 14]  
 (1) II and III                      (2) I and IV  
 (3) I, III and IV                      (4) I, II, III and IV
38. The density of a material in SI unit is  $128 \text{ kg m}^{-3}$ . In certain units in which the unit of length is 25 cm and the unit of mass is 50 g, the numerical value of density of the material is: [NCERT Page 2, 3]  
 (1) 40      (2) 16      (3) 640      (4) 410

39. A body starts moving from rest with constant acceleration covers displacement  $S_1$  in first  $(p - 1)$  seconds and  $S_2$  in first  $p$  seconds. The displacement  $S_1 + S_2$  will be made in time: [NCERT Page 18]

- (1)  $\sqrt{(2p^2 - 2p + 1)} s$       (2)  $(2p^2 - 2p + 1) s$   
 (3)  $(2p + 1) s$       (4)  $(2p - 1) s$

40. The time taken by an object to slide down  $45^\circ$  rough inclined plane is  $n$  times as it takes to slide down a perfectly smooth  $45^\circ$  incline plane. The coefficient of kinetic friction between the object and the incline plane is [NCERT Page 60, 61]

- (1)  $\sqrt{\frac{1}{1-n^2}}$       (2)  $\sqrt{1-\frac{1}{n^2}}$       (3)  $1+\frac{1}{n^2}$       (4)  $1-\frac{1}{n^2}$

41. A particle is moving along a circular path with a constant speed of  $10 \text{ ms}^{-1}$ . What is the magnitude of the change in velocity of the particle, when it moves through an angle of  $60^\circ$  around the centre of the circle? [NCERT Page 63]

- (1)  $10\sqrt{3} \text{ m/s}$       (2) zero      (3)  $10\sqrt{2} \text{ m/s}$       (4)  $10 \text{ m/s}$

42. An expression for a dimensionless quantity  $P$  is given by  $P = \frac{\alpha}{\beta} \log_e \left( \frac{kt}{\beta x} \right)$ ; where  $\alpha$  and  $\beta$  are constants,  $x$  is distance;  $k$  is Boltzmann constant and  $t$  is the temperature. Then the dimensions of  $\alpha$  will be : [NCERT Page 8]

- (1)  $[M^0L^{-1}T^0]$                       (2)  $[ML^0T^{-2}]$   
 (3)  $[MLT^{-2}]$                       (4)  $[ML^2T^{-2}]$

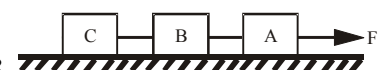
43. A physical quantity  $Q$  is found to depend on observables  $x$ ,  $y$  and  $z$ , obeying relation  $Q = \frac{x^3 y^2}{z}$ . The percentage error in the measurements of  $x$ ,  $y$  and  $z$  are 1%, 2% and 4% respectively. What is percentage error in the quantity  $Q$ ?  
 (1) 11%      (2) 4%      (3) 1%      (4) 3%

44. Select the incorrect statement(s) about static friction.  
 I. Static friction exists on its own.  
 II. In the absence of applied force static friction is maximum.  
 III. Static friction is equal and opposite to the applied force upto a certain limit.  
 IV. Static friction is equal to or less than to limiting friction [NCERT Page 60]

- (1) I and IV                      (2) II and III  
 (3) I and III                      (4) I, II and III

45. Three identical blocks of masses  $m = 2 \text{ kg}$  are drawn by a force  $F = 10.2 \text{ N}$  on a frictionless surface, then what is the tension (in N) in the string between the blocks  $B$  and  $C$ ? [NCERT Page 65]

- (1) 9.2      (2) 3.4  
 (3) 4      (4) 9.8





46. Two vectors  $\vec{A}$  and  $\vec{B}$  have equal magnitudes. If magnitude of  $\vec{A} + \vec{B}$ , is equal to two times the magnitude of  $\vec{A} - \vec{B}$ , then the angle between  $\vec{A}$  and  $\vec{B}$  will be :

[NCERT Page 34]

- (1)  $\sin^{-1}\left(\frac{3}{5}\right)$       (2)  $\sin^{-1}\left(\frac{1}{3}\right)$   
 (3)  $\cos^{-1}\left(\frac{3}{5}\right)$       (4)  $\cos^{-1}\left(\frac{1}{3}\right)$

47. A cylindrical wire of mass  $(0.4 \pm 0.01)\text{g}$  has length  $(8 \pm 0.04)\text{cm}$  and radius  $(6 \pm 0.03)\text{mm}$ .

The maximum error in its density will be

- (1) 1%      (2) 3.5%      (3) 4%      (4) 5%

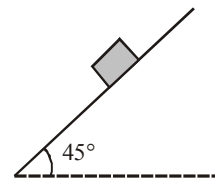
48. Water drops are falling from a nozzle of a shower onto the floor, from a height of 9.8 m. The drops fall at a regular interval of time. When the first drop strikes the floor, at that instant, the third drop begins to fall. Locate the position of second drop from the floor when the first drop strikes the floor.

[NCERT Page 18, 19]

- (1) 4.18m      (2) 2.94m      (3) 2.45m      (4) 7.35m

49. Consider a block kept on an inclined plane (inclined at  $45^\circ$ ) as shown in the figure. If the force required to just push it up the incline is 2 times the force required to just prevent it from sliding down, the coefficient of friction between the block and inclined plane ( $\mu$ ) is equal to :

[NCERT Page 60, 61]



- (1) 0.33      (2) 0.60      (3) 0.25      (4) 0.50

50. A circular race track of radius 300 m is banked at an angle of  $15^\circ$ . If the coefficient of friction between the wheels of the race car and the road is 0.2. Find optimum speed of the race car to avoid wear and tear on its tyres and maximum permissible speed to avoid slipping.

(Take  $g = 9.8\text{ms}^{-2}$  and  $\tan 15^\circ = 0.27$ ) [NCERT Page 63, 64]

- (1)  $v_o = 48\text{ms}^{-1}$ ,  $v_{\max} = 60\text{ms}^{-1}$   
 (2)  $v_o = 28.1\text{ms}^{-1}$ ,  $v_{\max} = 38.1\text{ms}^{-1}$   
 (3)  $v_o = 62.2\text{ms}^{-1}$ ,  $v_{\max} = 73.4\text{ms}^{-1}$   
 (4) None of the above

## PART-II: CHEMISTRY

### Section-A

51. Oxygen occurs in nature as a mixture of isotopes  $^{16}\text{O}$ ,  $^{17}\text{O}$  and  $^{18}\text{O}$  having atomic masses of 15.995 u, 16.999 u and 17.999 u and relative abundance of 99.763%, 0.037% and 0.200% respectively. What is the average atomic mass of oxygen?

[NCERT, Page 17]

- (1) 15.999 u      (2) 16.999 u  
 (3) 17.999 u      (4) 18.999 u

52. **Statement I:** Molality, mole fraction and mass fraction changes with temperature.

[NCERT, Page 23]

**Statement II:** Molarity does not change with temperature.

- (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.

53. Which one of the following pairs of compounds illustrate the law of multiple proportions ?

[NCERT, Page 15]

- (1)  $\text{H}_2\text{O}$  and  $\text{Na}_2\text{O}$   
 (2)  $\text{MgO}$  and  $\text{Na}_2\text{O}$   
 (3)  $\text{Na}_2\text{O}$  and  $\text{BaO}$   
 (4)  $\text{SnCl}_2$  and  $\text{SnCl}_4$

54. Which has maximum number of molecules?

[NCERT, Page 18]

- (1) 7 g  $\text{N}_2$       (2) 2 g  $\text{H}_2$   
 (3) 16 g  $\text{NO}_2$       (4) 16 g  $\text{O}_2$

55. What will be the mass of one atom of C-12 in grams?

[NCERT, Page 16]

- (1)  $1.66 \times 10^{-23}$       (2)  $1.35 \times 10^{-36}$   
 (3)  $1.99 \times 10^{-23}$       (4)  $3.4 \times 10^{-16}$

56. Two oxides of a X contain 50% and 40% of non-metal respectively. If the formula of the first oxide is  $\text{XO}_2$ . Then the formula of second oxide is

[NCERT, Page 19]

- (1)  $\text{X}_2\text{O}_3$       (2)  $\text{X}_2\text{O}_5$   
 (3)  $\text{XO}_3$       (4)  $\text{X}_2\text{O}$

57. **Statement I:** Empirical formula of hydrogen peroxide is HO.

**Statement II:** Molecular formula of hydrogen peroxide is  $\text{H}_2\text{O}_2$ .

[NCERT, Page 19]

- (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.

58. The amount of 50% (w/w) solution of hydrochloric acid required to react with 200 g of  $\text{CaCO}_3$  would be

[NCERT, Page 23]

- (1) 73 g      (2) 292 g      (3) 146 g      (4) 100 g

59. Starting with 2 moles of A and 1 mole of B, the following reaction :

[NCERT, Page 18]



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is made to take place. Assume the reaction to go to completion, match the number of moles listed in Column-II with various species listed in Column-I.

Column-I	Column-II
(A) A	(p) 1/3
(B) B	(q) 2/3
(C) X	(r) 0.0
(D) Y	(s) 4/3
(1) A – (s), B – (r), C – (q), D – (p)	
(2) A – (r), B – (p), C – (s), D – (q)	
(3) A – (s), B – (r), C – (p), D – (q)	
(4) A – (q), B – (p), C – (r), D – (s)	

60.  $6 \times 10^{20}$  molecules of  $\text{CO}_2$  are removed from 220 milligram of  $\text{CO}_2$ . What are the remaining moles of  $\text{CO}_2$ .

[NCERT, Page 20]

- (1)  $5 \times 10^{-3}$  (2)  $4 \times 10^{-3}$   
 (3)  $6 \times 10^{-3}$  (4)  $3 \times 10^{-3}$

61. For a reaction, [NCERT, Page 20]

$\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$ ; identify dihydrogen ( $\text{H}_2$ ) as a limiting reagent in the following reaction mixtures.

- (1) 56 g of  $\text{N}_2$  + 10 g of  $\text{H}_2$   
 (2) 35 g of  $\text{N}_2$  + 8 g of  $\text{H}_2$   
 (3) 28 g of  $\text{N}_2$  + 6 g of  $\text{H}_2$   
 (4) 14 g of  $\text{N}_2$  + 4 g of  $\text{H}_2$

62. An organic compound contains 49.3% carbon and 6.84% hydrogen (molecular mass = 146). Molecular formula of the compound is [NCERT, Page 19]

- (1)  $\text{C}_3\text{H}_5\text{O}_2$  (2)  $\text{C}_4\text{H}_{10}\text{O}_2$   
 (3)  $\text{C}_6\text{H}_{10}\text{O}_4$  (4)  $\text{C}_3\text{H}_{10}\text{O}_2$

63. The increasing order of energy of electromagnetic radiation can be represented as [NCERT, Page 37]

- (1) microwave < infrared < visible < X-ray  
 (2) X-ray < visible < infrared < microwave  
 (3) microwave < infrared < visible < radiowaves  
 (4) X-ray < infrared < visible < microwave

64. Kinetic energy of the ejected electron is [NCERT, Page 42]

- (1) equal to the frequency of the electromagnetic radiation  
 (2) proportional to the frequency of the electromagnetic radiation  
 (3) more than the frequency of the electromagnetic radiation  
 (4) inversely proportional to the frequency of the electromagnetic radiation

65. The SI unit of frequency ( $\nu$ ), wavelength ( $\lambda$ ) and wave number ( $\bar{\nu}$ ) is [NCERT, Page 39]

- (1) Hz, cm,  $\text{cm}^{-1}$  (2)  $\text{m}^{-1}$ , m, Hz  
 (3) Hz, m,  $\text{m}^{-1}$  (4) Hz, m, m

66. The spectrum of helium is expected to be similar to that of [NCERT, Page 44]

- (1)  $\text{Li}^+$  (2) H  
 (3) Na (4)  $\text{He}^+$

67. Two particles of masses  $m$  and  $2m$  have equal kinetic energies. The de-Broglie wavelengths are in the ratio of [NCERT, Page 50]

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

68. Which of the following statement is not correctly described in Bohr's model for hydrogen atom? [NCERT, Page 46]

- (1) Electron moves around the nucleus in a fixed orbit.  
 (2) Electron will move from a higher state to a lower state when required amount of energy is absorbed.  
 (3) Electron can move only in those orbits for which its angular momentum is integral multiple of  $nh/2\pi$ .  
 (4) The energy difference when transition of  $e^-$  occurs

between two stationary states is  $\nu = \frac{\Delta E}{h}$

69. In which of the following, orbitals are correctly arranged in the increasing order of their energies? [NCERT, Page 61]

- (1)  $4f < 5p < 5d < 6s$  (2)  $5p < 4f < 6s < 5d$   
 (3)  $5p < 6s < 4f < 5d$  (4)  $5p < 5d < 4f < 6s$

70. Which orbital among the following has zero radial nodes and 2 angular nodes? [NCERT, Page 59]

- (1) 4s (2) 3d  
 (3) 2p (4) 5s

71. The orientation of an atomic orbital is governed by [NCERT, Page 55]

- (1) Spin quantum number  
 (2) Magnetic quantum number  
 (3) Principal quantum number  
 (4) Azimuthal quantum number

72. **Statement I:** Magnetic quantum number determines the size of the orbital.

**Statement II:** Spin quantum number of an electron determines the orientation of the spin of electron relative to the chosen axis. [NCERT, Page 55]

- (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.

73. Which of the following sets of quantum numbers is correct for an electron in 4f orbital? [NCERT, Page 55]

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

74. **Assertion:** For  $n = 3$ ,  $\ell$  may be 0, 1 and 2 and 'm' may be 0,  $\pm 1$  and  $\pm 2$ . [NCERT, Page 55]

**Reason:** For each value of  $n$ , there are 0 to  $(n - 1)$  possible values of  $\ell$ ; for each value of  $\ell$ , there are 0 to  $\pm \ell$  values of  $m$ .

- (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.

75. Match the following [NCERT, Page 48]

Column-I	Column-II
(A) Nodes	(p) Three dimensional shape of the orbital
(B) Subsidiary quantum number	(q) Significant only for motion of microscopic objects
(C) White light	(r) $ \psi^2 $ is zero
(D) Heisenberg's uncertainty principle	(s) Continuous spectrum

- (1) A – (s), B – (r), C – (p), D – (q)
- (2) A – (r), B – (p), C – (s), D – (q)
- (3) A – (s), B – (r), C – (q), D – (p)
- (4) A – (q), B – (p), C – (r), D – (s)

76. The correct set of four quantum numbers for the valence electrons of rubidium atom ( $Z = 37$ ) is:

[NCERT, Page 55]

- |                             |                             |
|-----------------------------|-----------------------------|
| (1) $5, 0, 0, +\frac{1}{2}$ | (2) $5, 1, 0, +\frac{1}{2}$ |
| (3) $5, 1, 1, +\frac{1}{2}$ | (4) $5, 0, 1, +\frac{1}{2}$ |

77. Which one of the following is considered as the main postulate of Bohr's model of atom? [NCERT, Page 46]

- (1) Protons are present in the nucleus.
- (2) Electrons are revolving around the nucleus.
- (3) Centrifugal force produced due to the revolving electrons balances the force of attraction between the electron and the protons.
- (4) Angular momentum of electron is an integral multiple of  $\frac{h}{2\pi}$ .

78. In Bohr's model, atomic radius of the first orbit is  $y$ , the radius of the 3<sup>rd</sup> orbit, is [NCERT, Page 48]

- |           |          |
|-----------|----------|
| (1) $y/3$ | (2) $y$  |
| (3) $3y$  | (4) $9y$ |

79. The correct order of covalent radii of Si, Ge, Sn is: [NCERT, Page 85]

- |   |   |
|---|---|
| (1) $\text{Ge} < \text{Si} < \text{Sn}$ | (2) $\text{Sn} < \text{Si} < \text{Ge}$ |
| (3) $\text{Si} < \text{Ge} < \text{Sn}$ | (4) $\text{Sn} < \text{Ge} < \text{Si}$ |

80. **Statement I:** Avogadro's number is a dimensionless quantity.

**Statement II:** Avogadro's number is a number of atoms or molecule in one mole. [NCERT, Page 18]

- (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.

81. The successive ionisation energies (starting from the 1<sup>st</sup>) of an element are 801, 2430, 3660, 25,000 and 32,800 kJ mol<sup>-1</sup>, respectively. The element is [NCERT, Page 87]

- |       |       |       |       |
|-------|-------|-------|-------|
| (1) B | (2) C | (3) O | (4) N |
|-------|-------|-------|-------|

82. Match the Column-I with Column-II and choose the correct option using the codes given below. [NCERT, Page 90]

Column-I (Electronic configuration)	Column-II (Electron gain enthalpy /kJ mol <sup>-1</sup> )
(A) $1s^2 2s^2 2p^6$	(p) -328
(B) $1s^2 2s^2 2p^6 3s^1$	(q) -141
(C) $1s^2 2s^2 2p^5$	(r) -53
(D) $1s^2 2s^2 2p^4$	(s) +116

- (1) A – (s), B – (r), C – (p), D – (q)
- (2) A – (r), B – (p), C – (s), D – (q)
- (3) A – (s), B – (r), C – (q), D – (p)
- (4) A – (q), B – (p), C – (r), D – (s)

83. **Statement I:** In a period, 2nd ionisation energy of alkali metal is minimum. [NCERT, Page 87]

**Statement II:** After losing one electron, alkali metals attains inert gas electronic configuration.

- (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.

84. Which among the following isoelectronic species has the smallest size? [NCERT, Page 87]

- |   |        |                      |                   |
|---|--------|----------------------|-------------------|
| $\text{O}^{2-}$ , $\text{F}^-$ , Ne, $\text{Na}^+$ , $\text{Mg}^{2+}$ , $\text{Al}^{3+}$ , $\text{Si}^{4+}$ |        |                      |                   |
| (1) $\text{F}^-$  | (2) Ne | (3) $\text{Si}^{4+}$ | (4) $\text{Na}^+$ |

85. The correct order of acidic strength: [NCERT, Page 94]

- (1)  $\text{Cl}_2\text{O}_7 > \text{SO}_2 > \text{P}_4\text{O}_{10}$
- (2)  $\text{K}_2\text{O} > \text{CaO} > \text{MgO}$
- (3)  $\text{CO}_2 > \text{N}_2\text{O}_5 > \text{SO}_3$
- (4)  $\text{Na}_2\text{O} > \text{MgO} > \text{Al}_2\text{O}_3$

### Section-B

86. Among the following, the pair of elements having nearly same electronegativity values are [NCERT, Page 90]

- |                   |                       |
|-------------------|-----------------------|
| I. H and P        | II. Be and Al         |
| III. N and Cl     | IV. C and P           |
| (1) I, II and III | (2) II, III and IV    |
| (3) I, III and IV | (4) I, II, III and IV |



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87. Match the mass of elements given in column-I with the no. of moles given in column-II and mark the appropriate choice. [NCERT, Page 18]

Column-I	Column-II
(A) 28g of He	(p) 2 moles
(B) 46g of Na	(q) 7 moles
(C) 60g of Ca	(r) 1 mole
(D) 27g of Al	(s) 1.5 moles
(1) (A) → (s), (B) → (r), (C) → (q), (D) → (p)	
(2) (A) → (p), (B) → (r), (C) → (q), (D) → (s)	
(3) (A) → (r), (B) → (q), (C) → (p), (D) → (s)	
(4) (A) → (q), (B) → (p), (C) → (s), (D) → (r)	

88. The correct order of the first ionization enthalpies of the following elements is [NCERT, Page 87]

- (1)  $\text{Li} < \text{B} < \text{Be} < \text{N}$
- (2)  $\text{Li} < \text{Be} < \text{B} < \text{N}$
- (3)  $\text{N} < \text{Be} < \text{B} < \text{Li}$
- (4)  $\text{N} < \text{B} < \text{Be} < \text{Li}$

89. In which of the following arrangements, the order is NOT according to the property indicated against it? [NCERT, Page 90]

- (1)  $\text{Li} < \text{Na} < \text{K} < \text{Rb}$  :  
Increasing metallic radius
- (2)  $\text{I} < \text{Br} < \text{F} < \text{Cl}$  :  
Increasing electron gain enthalpy (with negative sign)
- (3)  $\text{B} < \text{C} < \text{N} < \text{O}$  :  
Increasing first ionisation enthalpy
- (4)  $\text{Al}^{3+} < \text{Mg}^{2+} < \text{Na}^+ < \text{F}^-$  :  
Increasing ionic size

90. If radius of second Bohr orbit of the  $\text{He}^+$  ion is 105.8 pm, what is the radius of third Bohr orbit of  $\text{Li}^{2+}$  ion? [NCERT, Page 48]

- (1) 15.87 pm
- (2) 1.587 pm
- (3) 158.7 Å
- (4) 158.7 pm

91. A compound contains 54.55 % carbon, 9.09% hydrogen, 36.36% oxygen. The empirical formula of this compound is: [NCERT, Page 19]

- (1)  $\text{C}_3\text{H}_5\text{O}$
- (2)  $\text{C}_4\text{H}_8\text{O}_2$
- (3)  $\text{C}_2\text{H}_4\text{O}_2$
- (4)  $\text{C}_2\text{H}_4\text{O}$

92. The correct order of ionic radii for the given species is [NCERT, Page 87]

- (1)  $\text{Na}^+ > \text{Al}^{3+} > \text{Mg}^{2+} > \text{K}^+$
- (2)  $\text{K}^+ > \text{Na}^+ > \text{Mg}^{2+} > \text{Al}^{3+}$
- (3)  $\text{K}^+ > \text{Na}^+ > \text{Al}^{3+} > \text{Mg}^{2+}$
- (4)  $\text{Al}^{3+} > \text{Mg}^{2+} > \text{K}^+ > \text{Na}^+$

93. Lithium shows diagonal relationship with element 'X' and aluminum with Y. X and Y respectively are [NCERT, Page 93]

- (1) Mg, Be
- (2) Be, Mg
- (3) Na, Si
- (4) B, Be

94. Which of the following oxides is highly basic? [NCERT, Page 94]

- (1)  $\text{Cr}_2\text{O}_3$
- (2)  $\text{Al}_2\text{O}_3$
- (3)  $\text{MgO}$
- (4)  $\text{Na}_2\text{O}$

95. Which of the following set of properties generally decreases along a period? [NCERT, Page 90]

- (1) Ionization energy and atomic radii
- (2) Metallic character and atomic radii
- (3) Electron affinity and electronegativity
- (4) Valency and oxidation potential

96. The equation used to represent the electron gain enthalpy is [NCERT, Page 90]

- (1)  $\text{X}(\text{g}) + \text{e}^- \longrightarrow \text{X}^-(\text{g})$
- (2)  $\text{X}(\text{s}) + \text{e}^- \longrightarrow \text{X}^-(\text{g})$
- (3)  $\text{X}(\text{g}) \longrightarrow \text{X}^+(\text{g}) + \text{e}^-$
- (4)  $\text{X}(\text{s}) \longrightarrow \text{X}^+(\text{g}) + \text{e}^-$

97. Which of the following represents the correct order of increasing electron gain enthalpy with negative sign for the elements? [NCERT, Page 90]

- A. Nitrogen (N)
- B. Phosphorus (P)
- C. Chlorine (Cl)
- D. Fluorine (F)
- (1)  $\text{P} < \text{N} < \text{F} < \text{Cl}$
- (2)  $\text{N} < \text{P} < \text{F} < \text{Cl}$
- (3)  $\text{Cl} < \text{F} < \text{P} < \text{N}$
- (4)  $\text{F} < \text{Cl} < \text{N} < \text{P}$

98. Which of the following atoms is the most electronegative? [NCERT, Page 90]

- (1) O
- (2) F
- (3) N
- (4) Cl

99. The set in which oxides of the elements have different nature is: [NCERT, Page 94]

- (1) B and P
- (2) B and Al
- (3) Na and Ca
- (4) Be and Al

100. The correct order of decreasing energy for the electrons whose quantum numbers  $n$  and  $l$  are given below, is [NCERT, Page 55]

- A.  $n = 5$  and  $l = 2$
- B.  $n = 5$  and  $l = 0$
- C.  $n = 4$  and  $l = 3$
- D.  $n = 4$  and  $l = 1$
- (1)  $\text{A} > \text{C} > \text{B} > \text{D}$
- (2)  $\text{A} > \text{B} > \text{C} > \text{D}$
- (3)  $\text{C} > \text{A} > \text{D} > \text{B}$
- (4)  $\text{A} > \text{B} > \text{D} > \text{C}$

## PART-III: BOTANY

## Section-A

101. Which of the following organisms do not reproduce?  
[NCERT Old Page 4]

- (1) Mules
- (2) Sterile worker bees
- (3) Both (1) and (2)
- (4) None of these

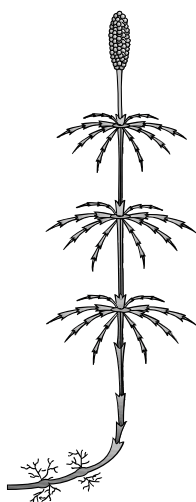
102. Which statement is correct regarding reproduction in green algae?  
[NCERT Page 24]

- (1) Some members show vegetative reproduction by fragmentation
- (2) Asexual reproduction by production of various spores
- (3) Sexual reproduction may be isogamous, anisogamous or oogamous.
- (4) All of these

103. Who was the earliest one to attempt a more scientific basis for classification?  
[NCERT Page 10]

- (1) R.H. Whittaker
- (2) Linnaeus
- (3) Aristotle
- (4) Bentham and Hooker

104. Identify the diagram which belong to \_\_\_\_\_.  
[NCERT Page 31]



- (1) Algae
- (2) Bryophyte
- (3) Pteridophyte
- (4) Angiosperm

105. Among 5-Kingdom classification, eukaryotes are placed in how many kingdom(s)?  
[NCERT Page 11]

- (1) 2
- (2) 3
- (3) 4
- (4) 1

106. Five kingdom system of classification suggested by R.H. Whittaker is not based on  
[NCERT Page 11]

- (1) Simple morphological characters only
- (2) Phylogenetic relationship
- (3) Mode of reproduction
- (4) Mode of nutrition

107. Match the columns.  
[NCERT Page 7]

Column-I	Column-II
A. Genus	I. <i>Musca</i>
B. Family	II. Felidae
C. Order	III. Carnivora
D. Class	IV. Insecta

Choose the correct answer from the options given below.

- (1) A – IV, B – II, C – I, D – III
- (2) A – II, B – IV, C – III, D – I
- (3) A – I, B – II, C – III, D – IV
- (4) A – II, B – I, C – IV, D – III

108. Given below are two statements:  
[NCERT Page 33-34]

**Statement I:** Gymnosperms are called naked seeded plants due to the absence of ovary wall.

**Statement II:** Angiosperm is an exceptionally large group of plants occurring in wide range of habitats.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

109. Common feature of *Amoeba*, *Euglena*, *Paramecium* and *Trypanosoma* is  
[NCERT Page 15, 16]

- (1) being single-celled eukaryotes
- (2) holozoic nutrition
- (3) multiple fission
- (4) contractile vacuole.

110. In which of the following gymnosperms, coralloid root having  $N_2$ -fixing cyanobacteria is found?  
[NCERT Page 32]

- (1) *Pinus*
- (2) *Ginkgo*
- (3) *Cycas*
- (4) *Cedrus*

111. Identify the correct features about Archaeobacteria.

- A. live in harsh habitats
  - B. found in salty areas
  - C. different cell wall structure
  - D. pigment similar to green plants
  - E. colonial or filamentous
- [NCERT Page 13]

Choose the correct answer from the options given below:

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

112. Which locomotory organ is not found in protozoans?

[NCERT Page 15, 16]

- (1) Pseudopodia
- (2) Parapodia
- (3) Cilia
- (4) Flagella

113. Match column-I with column-II. [NCERT Page 30, 32]

Column-I	Column-II
A. Heterosporous	I. <i>Pteris</i>
B. Lycopsida	II. <i>Pinus</i>
C. Mycorrhiza	III. <i>Lycopodium</i>
D. Pteropsida	IV. <i>Salvinia</i>

Choose the correct answer from the options given below.

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

114. All protozoans are \_\_\_\_\_ .

[NCERT Page 15]

- (1) autotrophs
- (2) heterotrophs
- (3) chemotrophs
- (4) none of these

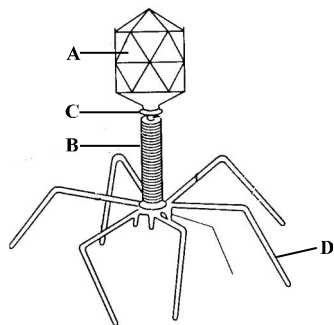
115. Which one is correct about heterosporous pteridophytes?

[NCERT Page 32]

- (1) Microspore and megaspores develop into the male and the female gametophytes respectively.
- (2) The female gametophyte are retained on the parent sporophyte for variable period.
- (3) The development of the zygote into the embryo takes place within female gametophyte.
- (4) All of these

116. The figure given below shows the structure of a bacteriophage. Identify its parts labelled as A, B, C and D.

[NCERT Page 20]



A	B	C	D
(1) Tail fibres	Head	Sheath	Collar
(2) Sheath	Collar	Head	Tail fibres
(3) Head	Sheath	Collar	Tail fibres
(4) Collar	Tail fibres	Head	Sheath

117. Given below are two statements:

**Statement I:** In unicellular organisms, reproduction is synonymous with growth.

**Statement II:** Reproduction is a defining property of any living organisms. [NCERT Old Page 4]

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

118. Select the correct statements about bryophytes.

- A. Mosses serve as food for birds and herbaceous mammals.
- B. *Sphagnum*, a liverwort, provide peat that have long been used as fuel.
- C. *Sphagnum*, because of their high capacity to hold water is used as packaging-material for trans-shipment of living plant materials.
- D. Mosses have a little role during ecological succession.
- E. Mosses, as they form dense mat, prevent soil erosion.

Choose the correct answer from the options given below:

[NCERT Page 29]

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

119. In basidiomycetes, karyogamy and meiosis take place in

[NCERT Page 18]

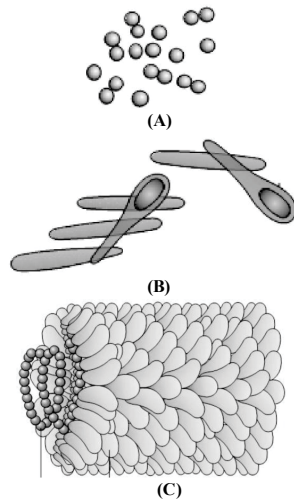
- (1) basidium
- (2) basidiocarp
- (3) basidiospore
- (4) dikaryon.

120. Which one is not the characteristic of *Cycas*?

[NCERT Page 32]

- (1) Unbranched stem
- (2) Compound leaves (pinnate)
- (3) Dioecious (male and female cone on separate plants)
- (4) Non-archegoniate

121. Identify the following diagrams. [NCERT Page 12, 20]



- (1) (A) – Tobacco mosaic virus, (B) – Coccus, (C) – Bacillus
- (2) (A) – Coccus, (B) – Bacillus, (C) – Tobacco mosaic virus
- (3) (A) – Bacillus, (B) – Coccus, (C) – Tobacco mosaic virus
- (4) (A) – Coccus, (B) – Tobacco mosaic virus, (C) – Bacillus

122. Which of the following statements about classifications is not true? [NCERT Page 7, 8]

- A. Members of a family are less similar than members of an included genus
- B. An orders has more members than the number of members in an included genus
- C. Families have more members than phyla
- D. Members of a family share a common ancestor in the more distant past than members of an included genus
- E. The number of species in a taxon depends on their relative degree of similarity.

Choose the correct answer from the options given below.

- (1) Only C and D
- (2) Only D and E
- (3) Only A, B and C
- (4) Only C

123. Identify the correct set of statements. [NCERT Page 20]

- A. No virus contains both DNA and RNA
- B. A virus is a nucleoprotein and the genetic material is infectious.
- C. Viruses that infect animals can have single stranded RNA
- D. In general, viruses that infect plants have either single or double stranded RNA or double stranded DNA
- E. Bacteriophages usually have ds DNA

Choose the correct answer from the options given below.

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

124. Bryophytes mostly grow in [NCERT Page 28]

- (1) dry area
- (2) sandy-soil conditions
- (3) moist shaded areas in hills, damp, humid and shaded localities
- (4) fresh water.

125. Gibbon belong to order [NCERT Page 7]

- (1) Diptera
- (2) Polymoniales
- (3) Primata
- (4) Carnivora.

126. The fungus, commonly known as bread mould is

[NCERT Page 17]

- (1) *Alternaria*
- (2) *Rhizopus*
- (3) *Penicillium*
- (4) *Aspergillus*.

127. Select the correct statements for reproduction.

- A. It is not an all-exclusive defining characteristic of living organisms
- B. It is not an all-inclusive defining characteristic of living organisms
- C. It is an all -inclusive defining characteristic of plants and fungi only.
- D. Photoperiod affects reproduction in seasonal plant breeders only.
- E. Photoperiod affects reproduction in seasonal breeders both plants and animals

[NCERT Old Page 4]

Choose the correct answer from the options given below.

- (1) B and E only
- (2) C and D only
- (3) A and E only
- (4) All of these

128. Given below are two statements:

**Statement I:** Symbiosis is furnished by mycorrhiza.

**Statement II:** In mycorrhiza, symbiosis is established between fungus and algae. [NCERT Page 16]

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

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129. Match List-I with List-II [NCERT Page 24, 27]

List-I	List-II
A. <i>Chlorella</i>	I. Isogamous
B. <i>Eudorina</i>	II. Anisogamous
C. <i>Volvox</i>	III. Oogamous
D. <i>Spirogyra</i>	IV. Unicellular algae

Choose the correct answer from the options given below.

- (1) A – I, B – II, C – III, D – IV
- (2) A – II, B – III, C – I, D – IV
- (3) A – III, B – II, C – IV, D – I
- (4) A – IV, B – II, C – III, D – I

130. Different organisms belonging to different orders are placed in a single class due to the fact that [NCERT Page 7]

- (1) they have all similar morphological and reproductive characters
- (2) they have similar place of origin
- (3) they share a common habitat
- (4) they have few similar or common characters.

131. With respect to fungal sexual cycle, choose the correct sequence of events. [NCERT Page 17]

- (1) Karyogamy, Plasmogamy and Meiosis
- (2) Meiosis, Plasmogamy and Karyogamy
- (3) Plasmogamy, Karyogamy and Meiosis
- (4) Meiosis, Karyogamy and Plasmogamy

132. Which among the following is incorrect about cytotaxonomy and chemotaxonomy? [NCERT Page 24]

- (1) Cytotaxonomy is based on the chromosomes present in the organism.
- (2) Chemotaxonomy is based on the chemical composition of plants.
- (3) Cytotaxonomy involves characteristics like number of chromosomes, division of cell and position of centromere.
- (4) Cytotaxonomy involves only external characteristics.

133. The number of obligate categories which are always used in a taxonomic hierarchy are [NCERT Page 6]

- (1) 7
- (2) 5
- (3) 3
- (4) 8.

134. Read the following statements. [NCERT Page 27, 28]

- A. The food is stored in the form of floridean starch.
- B. The red thalli of most of the red algae are multicellular.
- C. They occur in both well-lighted regions close to surface of water.
- D. They reproduce asexually by non-motile spores.
- E. Sexual reproduction is oogamous.

The above characteristics belong to

- (1) Rhodophyceae
- (2) Phaeophyceae
- (3) Chlorophyceae
- (4) Fungi.

135. Match List-I with List-II. [NCERT Page 17, 18]

List - I	List - II
A. <i>Puccinia</i>	I. Yeast
B. <i>Ustilago</i>	II. Mushroom
C. <i>Agaricus</i>	III. Smut fungus
D. <i>Saccharomyces</i>	IV. Rust fungus

Choose the correct answer from the options given below.

- (1) A – I, B – II, C – III, D – IV
- (2) A – II, B – III, C – IV, D – I
- (3) A – III, B – IV, C – I, D – II
- (4) A – IV, B – III, C – II, D – I

## Section-B

136. A group of plants or animals with similar traits of any rank is [NCERT Page 6]

- (1) Species
- (2) Genus
- (3) Order
- (4) Taxon.

137. Match List-I with List-II. [NCERT Page 28, 32, 34]

List - I	List - II
A. <i>Pteris</i>	I. Gymnosperm
B. <i>Wolffia</i>	II. Pteridophyte
C. <i>Cedrus</i>	III. Angiosperm
D. <i>Marchantia</i>	IV. Bryophyte

Choose the correct answer from the options given below.

- (1) A – I, B – III, C – II, D – IV
- (2) A – II, B – III, C – I, D – IV
- (3) A – III, B – II, C – I, D – IV
- (4) A – II, B – I, C – III, D – IV

138. Match List-I with List-II. [NCERT Page 18]

List - I	List - II
A. Edible delicacies	I. <i>Penicillium</i>
B. Experimental genetics	II. <i>Neurospora crassa</i>
C. Source of antibiotics	III. <i>Puccinia, Ustilago</i>
D. Rust and smut diseases	IV. Morels and truffles

Choose the correct answer from the options given below.

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

139. Which of the following is against the rules of ICBN?

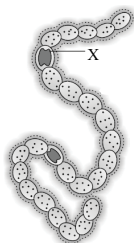
[NCERT Page 4]

- (1) Generic and specific names should be always underlined.
- (2) Handwritten scientific names should be underlined.
- (3) Every species should have a generic name and a specific epithet.
- (4) Scientific names are in Latin and should be italicized.



140. Identify the function of 'X' depicted in given diagram.

[NCERT Page 13]



- (1) Fix atmospheric nitrogen
- (2) Photosynthesis
- (3) Respiration
- (4) Recycling nutrients

141. Match List-I with List-II. [NCERT Page 13, 14, 17, 18]

List - I	List - II
A. Sac fungi	I. <i>Cyanobacteria</i>
B. Bracket fungi	II. <i>Claviceps</i>
C. Phycomycetes	III. <i>Agaricus</i>
D. Eubacteria	IV. <i>Mucor</i>

Choose the correct answer from the options given below.

- (1) A – II, B – III, C – I, D – IV
- (2) A – I, B – II, C – III, D – IV
- (3) A – II, B – IV, C – III, D – I
- (4) A – II, B – III, C – IV, D – I

142. Read the following about numerical taxonomy.

[NCERT Page 24]

- A. It is carried out by the use of computers.
- B. It is based on all observable characters of organisms.
- C. Number and codes are assigned to all the characters, data are then processed.
- D. Each character is given equal importance.
- E. Hundreds of characters can be considered at the same time.

Which of the above statements are incorrect?

- (1) A and B only
- (2) C and E only
- (3) None of these
- (4) D only

143. Select the correct statement. [NCERT Page 20, 21]

- (1) In lichens, the algal component is called phycobiont and fungal component is known as mycobiont, which are heterotrophic and autotrophic respectively.
- (2) Viroid contains RNA of low molecular weight and protein coat.
- (3) A virus contains both RNA and DNA.
- (4) Viruses are obligate parasites.

144. Match List-I with List-II. [NCERT Page 14, 15, 18, 19]

List - I	List - II
A. Ascospores	I. Slime moulds
B. Fission	II. <i>Agaricus</i>
C. <i>Plasmodium</i>	III. Bacteria
D. Basidiospores	IV. Yeast

Choose the correct answer from the options given below.

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

145. Which of the following statement is incorrect?

[NCERT Page 14, 15, 20]

- (1) The name virus means venom or poisonous fluid.
- (2) Many mycoplasma are pathogenic in animals and plants.
- (3) Toxins released by large number of red dinoflagellates may even kill other marine animals such as fishes.
- (4) Beside the cell wall, euglenoids have a protein rich layer called pellicle which makes their body flexible.

146. Given below are two statements:

**Statement I:** In *Dryopteris*, both sporophyte and gametophyte are independent.

**Statement II:** Gametes are produced in fern by prothallus.

[NCERT Page 31, 32]

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

147. Match List-I with List-II. [NCERT Page 12, 14, 16, 20]

List - I	List - II
A. Venom	I. Eubacteria
B. Fungi	II. Euglenoids
C. Protista	III. Phycomycetes
D. Monera	IV. Virus

Choose the correct answer from the options given below.

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

148. Match List-I with List-II.

[NCERT Page 16]

List - I	List - II
A. Amoeboid protozoans	I. <i>Paramecium</i>
B. Ciliated protozoans	II. <i>Plasmodium</i>
C. Sleeping sickness	III. <i>Entamoeba</i>
D. Sporozoans	IV. <i>Trypanosoma</i>

Choose the correct answer from the options given below.

- (1) A – I, B – III, C – IV, D – II
- (2) A – III, B – I, C – II, D – IV
- (3) A – III, B – I, C – IV, D – II
- (4) A – III, B – IV, C – I, D – II

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149. Which is the tallest gymnospermic plant?  
 (1) Redwood tree *Sequoia* [NCERT Page 32]  
 (2) *Pinus*  
 (3) *Ginkgo*  
 (4) *Cycas*

150. AIDS in humans is caused by [NCERT Page 20]  
 (1) virus  
 (2) fungi  
 (3) bacteria  
 (4) algae

## PART-IV: ZOOLOGY

### Section-A

151. Which of the following statements about cell junctions is false? [NCERT Old Page 102]

- A. All the cells of the epithelium are held together with little intercellular materials.  
 B. In almost all animal tissues specialized junctions provide both structural and functional link between its individual cells.  
 C. Tight junctions help to stop substances from leaking across a tissue.  
 D. Adhering junction provide cementing to keep neighbouring cells together.  
 E. Gap junctions provide cytoplasmic channels between cells for passage of ion, small molecules and sometimes big molecules.

- (1) Only B and C  
 (2) Only A and B  
 (3) Only D and E  
 (4) None of these

152. Which one is the oviparous mammal? [NCERT Page 51]

- (1) *Macropus* (Kangaroo)  
 (2) *Panthera*  
 (3) *Ornithoryhynchus* (Platypus)  
 (4) Whale

153. Frog's heart is [NCERT Page 82]

- (1) 4 chambered  
 (2) 2 chambered  
 (3) 3 chambered  
 (4) none of these

154. *Pleurobrachia* and *Ctenoplana* are. [NCERT Page 42]

- (1) sponges  
 (2) ctenophores  
 (3) flatworms  
 (4) roundworms

155. Identify the set of correct statements.

[NCERT Page 112-114]

- A. The respiration by lungs is called pulmonary respiration.  
 B. Each compound eye of cockroach consists of about 1000 hexagonal ommatidia.  
 C. Cockroaches are monoecious.  
 D. In cockroach, gizzard helps in grinding the food particles.

Choose the correct answer from the options given below.

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

156. Amphibia shares with reptiles in all of the following characters except [NCERT Page 48, 49]

- (1) tympanum represents ear  
 (2) presence of scales  
 (3) sexes are separate  
 (4) oviparous.

157. Match List-I with List-II. [NCERT Page 82]

#### List - I

- A. Hepatic portal system in frog  
 B. Lymphatic system in frog  
 C. Renal portal system in frog  
 D. Red coloured pigment

#### List - II

- I. Venous connection between kidney and lower parts of the body.  
 II. Haemoglobin  
 III. Venous connection between liver and intestine  
 IV. Lymph, lymph channels and nodes

Choose the correct answer from the options given below.

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

158. Read the following statements about aschelminthes.

[NCERT Page 43]

- A. Are diploblastic and pseudocoelomate animals  
 B. Their body is circular in cross-section so, are called round worms  
 C. Alimentary canal is incomplete  
 D. Muscular pharynx is present  
 E. Are hermaphrodites

Which of the above statements are correct?

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

159. In frogs, vasa efferentia are \_\_\_\_\_ in number that arise from testes. [NCERT Page 83]

- (1) 5 - 10  
 (2) 1 - 2  
 (3) 10 - 12  
 (4) 12 - 15

160. Read the following statements about hemichordates.

[NCERT Page 45]

- A. Are exclusively fresh water organisms
- B. Possess metameric segmentation
- C. Body is cylindrical
- D. Respiration occur through gills
- E. Excretion of nitrogenous waste occurs through proboscis gland

Which of the above statements are correct?

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

161. Match List-I with List-II.

[NCERT Page 82, 83, 84]

- | List - I                | List - II                        |
|-------------------------|----------------------------------|
| A. Urinogenital duct    | I. Tadpole                       |
| B. Larval stage of frog | II. Ventral side of the heart    |
| C. Ear in frog          | III. Opens into cloaca           |
| D. Conus arteriosus     | IV. Hearing as well as balancing |

Choose the correct answer from the options given below.

- (1) A – III, B – I, C – IV, D – II
- (2) A – IV, B – II, C – I, D – III
- (3) A – I, B – II, C – III, D – IV
- (4) A – IV, B – III, C – II, D – I

162. Match List-I with List-II.

[NCERT Page 45]

- | List - I      | List - II              |
|---------------|------------------------|
| A. Tusk shell | I. <i>Chaetopleura</i> |
| B. Squid      | II. <i>Dentalium</i>   |
| C. Chiton     | III. <i>Aplysia</i>    |
| D. Sea-hare   | IV. <i>Loligo</i>      |

Choose the correct answer from the options given below.

- (1) A – III, B – IV, C – II, D – I
- (2) A – II, B – IV, C – I, D – III
- (3) A – III, B – II, C – IV, D – I
- (4) A – II, B – IV, C – III, D – I

163. Match List-I with List-II.

[NCERT Page 82, 83]

- | List - I                     | List - II                            |
|------------------------------|--------------------------------------|
| A. Central nervous system    | I. Heart, Lymph vessels and blood    |
| B. Autonomic nervous system  | II. Brain and spiral cord            |
| C. Peripheral nervous system | III. Cranial and spinal nerves       |
| D. Vascular system           | IV. Sympathetic and para-sympathetic |

Choose the correct answer from the options given below.

- (1) A – III, B – II, C – I, D – IV
- (2) A – IV, B – I, C – III, D – II
- (3) A – I, B – IV, C – III, D – II
- (4) A – II, B – IV, C – III, D – I

164. Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:

**Assertion A:** The ctenophores are marine animals with comb plates.

**Reason R:** They have characteristic flagellated choanocytes.

[NCERT Page 42]

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

- (1) Both A and R are true and R is the correct explanation of A.
- (2) Both A and R are true but R is NOT the correct explanation of A.
- (3) A is true but R is false.
- (4) A is false but R is true.

165. Match List-I with List-II.

[NCERT Page 44, 48, 49]

- | List - I  | List - II     |
|-----------|---------------|
| A. Frog   | I. Amphibia   |
| B. Locust | II. Aves      |
| C. Birds  | III. Reptilia |
| D. Cobra  | IV. Insecta   |

Choose the correct answer from the options given below.

- (1) A – I, B – II, C – III, D – IV
- (2) A – III, B – I, C – II, D – IV
- (3) A – IV, B – III, C – I, D – II
- (4) A – I, B – IV, C – II, D – III

166. Match List-I with List-II

[NCERT Page 48-51]

- | List - I           | List - II                      |
|--------------------|--------------------------------|
| A. <i>Equus</i>    | I. Moist skin (without scales) |
| B. <i>Hyla</i>     | II. Forelimbs absent           |
| C. <i>Columba</i>  | III. Poisonous nature          |
| D. <i>Bangarus</i> | IV. Mammary glands present     |

Choose the correct answer from the options given below.

- (1) A – II, B – I, C – IV, D – III
- (2) A – IV, B – III, C – I, D – II
- (3) A – III, B – II, C – IV, D – I
- (4) A – IV, B – I, C – II, D – III

167. Identify the incorrect statement about frog.

[NCERT Page 83]

- (1) Parathyroid and pineal body are present.
- (2) Optic lobes are situated in the midbrain.
- (3) There are ten cranial nerves only.
- (4) The ventricle opens into the conus arteriosus.

168. Match List-I with List-II.

[NCERT Page 47, 48, 49]

- | List - I               | List - II                     |
|------------------------|-------------------------------|
| A. <i>Hemidactylus</i> | I. Ectoparasite               |
| B. <i>Hippoptamus</i>  | II. Electric organs           |
| C. <i>Torpedo</i>      | III. Shed scales as skin cast |
| D. <i>Myxine</i>       | IV. Vivipary                  |

Choose the correct answer from the options given below.

- (1) A – II, B – I, C – IV, D – III
- (2) A – IV, B – III, C – I, D – II
- (3) A – III, B – IV, C – II, D – I
- (4) A – III, B – IV, C – I, D – II

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169. Which of the following statement is false?

[NCERT Old Page 102]

- (1) Goblet cells secrete mucus
- (2) Exocrine glands possess duct for secretion of mucus, milk, saliva, earwax, digestive enzymes, oil and other cell products
- (3) Glandular epithelium consists of specialized columnar or cuboidal cells
- (4) Endocrine glands secrete a variety of enzymes only

170. Match columns I with column II. [NCERT Page 48]

Column I	Column II
A. <i>Trygon</i>	I. Saw fish
B. <i>Pristis</i>	II. Great white shark
C. <i>Carcharodon</i>	III. Dog fish
D. <i>Scoliodon</i>	IV. Sting ray

Choose the correct answer from the options given below.

- (1) A – I, B – IV, C – II, D – III
- (2) A – IV, B – I, C – III, D – II
- (3) A – I, B – IV, C – III, D – II
- (4) A – IV, B – I, C – II, D – III

171. Match the columns. [NCERT Page 45]

Column-I	Column-II
A. <i>Octopus</i>	I. Pearl oyster
B. <i>Pinctada</i>	II. Apple snail
C. <i>Pila</i>	III. Sea hare
D. <i>Aplysia</i>	IV. Devil fish

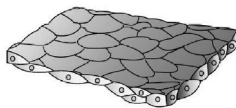
Choose the correct answer from the options given below.

- (1) A – II, B – I, C – III, D – IV
- (2) A – III, B – IV, C – I, D – II
- (3) A – I, B – II, C – III, D – IV
- (4) A – IV, B – I, C – II, D – III

172. In arthropods, excretion takes place through

- (1) general body surface [NCERT Page 44]
- (2) flame cells
- (3) malpighian tubules
- (4) nepridia

173. Select the option of location in which the given epithelia is found. [NCERT Old Page 101]



- (1) PCT
- (2) Wall of blood vessels
- (3) Lining of stomach
- (4) Fallopian tubes

174. A feature absent in annelids is [NCERT Page 43]

- (1) nephridia (Osmoregulatory + excretory organ).
- (2) lateral swimming appendages in aquatic forms like *Nereis*
- (3) longitudinal and circular muscles helping in locomotion
- (4) pseudocoelom

175. Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:

[NCERT Old Page 105]

**Assertion A:** Frogs maintain the ecological balance in the ecosystem.**Reason R:** Frogs can live both on land and in freshwater. In the light of the above statements, choose the correct answer from the options given below:

- (1) Both A and R are true and R is the correct explanation of A.
- (2) Both A and R are true but R is NOT the correct explanation of A.
- (3) A is true but R is false.
- (4) A is false but R is true.

176. Which of the following is not found in the phylum Chordata? [NCERT Page 46]

- (1) A dorsal hollow nerve cord
- (2) Lateral paired gill slits during development
- (3) A notochord at some stage of development
- (4) An external skeleton

177. Match the columns. [NCERT Old Page 102, 103, 105]

Column-I	Column-II
A. Goblet cells	I. Neural tissue
B. Neuroglia	II. Specialised connective tissue
C. Cartilage	III. Loose connective tissue
D. Areolar tissue	IV. Glandular epithelium

Choose the correct answer from the options given below.

- (1) A – III, B – IV, C – II, D – I
- (2) A – I, B – II, C – III, D – IV
- (3) A – IV, B – I, C – III, D – II
- (4) A – IV, B – I, C – II, D – III

178. Which of the following is correct? [NCERT Page 38, 39]

- A. Diploblastic : Porifera, Coelenterates
- B. Triploblastic : Platyhelminthes to Chordates
- C. Acoelomate : Porifera, Coelenterates, Platyhelminthes
- D. Pseudocoelomate : Aschelminthes / Round worms

Choose the correct answer from the options given below.

- (1) All are incorrect
- (2) All are correct
- (3) Only A, B and D are correct
- (4) Only D is correct

179. Match the columns [NCERT Old Page 103, 104]

Column-I	Column-II
A. Adipose tissue	I. Nose
B. Dense irregular connective tissue	II. Blood
C. Hyaline cartilage	III. Skin
D. Fluid connective tissue	IV. Fat storage

Choose the correct answer from the options given below.

- (1) A – IV, B – II, C – III, D – I
- (2) A – IV, B – III, C – I, D – II
- (3) A – III, B – I, C – IV, D – II
- (4) A – III, B – I, C – II, D – IV

180. Given below are two statements: [NCERT Page 44]

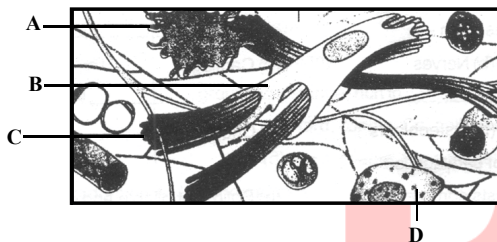
**Statement I:** In arthropods, circulatory system is open type.

**Statement II:** Statocysts are present in the molluscs.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

181. In the given diagram of areolar connective tissue, the different cells and parts have been marked by alphabets (A, B, C and D). Choose the answer in which these alphabets correctly match with the parts. [NCERT Old Page 103]



- (1) A-Adipocyte, B-Collagen fibres, C-Microfilament, D-Mast cells
- (2) A-Macrophage, B-Collagen fibres, C-Microfilament, D-Mast cells
- (3) A-Macrophage, B-Collagen fibres, C-Microtubule, D-RBC
- (4) A-Macrophage, B-Fibroblast, C-Collagen fibres, D-Mast cells

182. Match column-I with column-II. [NCERT Page 40-43]

Column-I	Column-II
A. Organ level	I. <i>Pheretima</i>
B. Cellular aggregate level	II. <i>Fasciola</i>
C. Tissue level	III. <i>Spongilla</i>
D. Organ system level	IV. <i>Obelia</i>

Choose the correct answer from the options given below.

- (1) A – IV, B – III, C – I, D – II
- (2) A – IV, B – II, C – III, D – I
- (3) A – II, B – IV, C – III, D – I
- (4) A – II, B – III, C – IV, D – I

183. Match List-I with List-II. [NCERT Old Page 102-104]

List - I	List - II
A. Blood	I. Help in communication with each other
B. Ligament	II. Transport of substances
C. Areolar tissue	III. Loose connective tissue
D. Gap junction	IV. Dense regular connective tissue

Choose the correct answer from the options given below.

- (1) A – III, B – IV, C – II, D – I
- (2) A – I, B – II, C – III, D – IV
- (3) A – IV, B – I, C – III, D – II
- (4) A – II, B – IV, C – III, D – I

184. Match column-I with column-II. [NCERT Page 45]

Column-I	Column-II
A. <i>Echinus</i>	I. Brittle star
B. <i>Cucumaria</i>	II. Sea lily
C. <i>Antedon</i>	III. Sea urchin
D. <i>Ophiura</i>	IV. Sea cucumber

Choose the correct answer from the options given below.

- (1) A – IV, B – III, C – I, D – II
- (2) A – III, B – IV, C – II, D – I
- (3) A – III, B – IV, C – I, D – II
- (4) A – III, B – II, C – IV, D – I

185. Given below are two statements: [NCERT Old Page 104]

**Statement I:** Ground substance of bone is hard and non-pliable.

**Statement II:** The bone marrow in all bones is the site of production of blood cells.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

### Section-B

186. Given below are two statements: [NCERT Page 40]

**Statements I:** Sponges show cellular grade of organisation.

**Statements II:** Sponges have a water transport or canal system.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

187. Match List-I with List-II. [NCERT Old Page 111, 112]

List - I	List - II
A. Sclerites	I. Flexible articular membrane
B. Tegmina	II. Lower lip
C. Arthrodistal membrane	III. Hardened plates
D. Labium	IV. Opaque dark and leathery wing

Choose the correct answer from the options given below.

- (1) A – IV, B – I, C – II, D – III
- (2) A – II, B – III, C – I, D – IV
- (3) A – III, B – IV, C – I, D – II
- (4) A – I, B – II, C – III, D – IV



PT - XI/01

19

188. Which of the following statements are correct?

[NCERT Page 38, 40, 43]

- A. In earthworm, the body shows metameric segmentation.
- B. Aschelminthes are pseudocoelomates.
- C. Sponges are mostly asymmetrical.
- D. Mesoglea is an undifferentiated layer present in between the ectoderm and the endoderm.
- E. *Nereis* is dioecious but leech is monoecious.

Choose the correct answer from the options given below.

- (1) A and B only
- (2) B and C only
- (3) B, C and D only
- (4) All of these

189. A triangular structure that joins the right atrium of heart in frog is called

[NCERT Page 82]

- (1) Sinus venosus and receives blood from vena cava
- (2) Conus arteriosus and receives blood from vena cava
- (3) Sinus venosus and receives blood from pulmonary artery
- (4) Conus arteriosus and receives blood from pulmonary vein.

190. Given below are two statements:

[NCERT Page 42]

**Statement I:** Flatworms are bilaterally symmetrical.

**Statement II:** Hooks and suckers are present in the parasitic forms.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

191. Given below are two statements:

[NCERT Old Page 101]

**Statement I:** Compound epithelium covers dry surface of the skin.

**Statement II:** Its major role is secretion and absorption.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

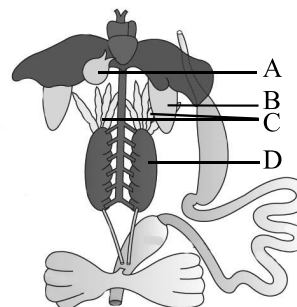
192. Which statement is incorrect?

[NCERT Page 42, 43]

- (1) In ctenophores, locomotion is mediated by comb plates.
- (2) *Planaria* does not possess regeneration capacity.
- (3) Earthworms are monoecious but cross fertilization take place among them.
- (4) In cockroaches and mosquitoes excretion of waste material occurs through malpighian tubules

193. The figure given here shows diagrammatic representation of internal organs of frog. Identify A to D and select the correct option.

[NCERT Page 81]



- | A                | B        | C          | D            |
|------------------|----------|------------|--------------|
| (1) Gall bladder | Liver    | Testis     | Rectum       |
| (2) Gall bladder | Lung     | Fat bodies | Kidney       |
| (3) Pancreas     | Lung     | Testis     | Liver        |
| (4) Liver        | Pancreas | Fat bodies | Gall bladder |

194. Match List-I with List-II.

[NCERT Page 47, 48, 51, 52]

**List - I****List - II**

- |                   |  |
|-------------------|--|
| A. Lamprey        | I. Flame cells                           |
| B. Rohu           | II. Viviparous                           |
| C. Osmoregulation | III. Migrate to fresh water for spawning |
| D. <i>Camelus</i> | IV. Cycloid/Ctenoid scales               |

Choose the correct answer from the options given below.

- (1) A – III, B – IV, C – I, D – II
- (2) A – I, B – III, C – IV, D – II
- (3) A – III, B – IV, C – II, D – I
- (4) A – II, B – IV, C – III, D – I

195. In cockroach, identify the parts of the foregut in correct sequence.

[NCERT Page 81]

- (1) Mouth → Oesophagus → Pharynx → Crop → Gizzard
- (2) Mouth → Crop → Pharynx → Oesophagus → Gizzard
- (3) Mouth → Gizzard → Crop → Pharynx → Oesophagus
- (4) Mouth → Pharynx → Oesophagus → Crop → Gizzard

196. Match List-I with List-II.

[NCERT Page 40, 43, 44]

**List - I****List - II**

- |                  |                        |
|------------------|------------------------|
| A. Porifera      | I. Canal system        |
| B. Aschelminthes | II. Metameres          |
| C. Annelida      | III. Muscular pharynx  |
| D. Arthropoda    | IV. Jointed appendages |

Choose the correct answer from the options given below.

- (1) A – II, B – III, C – I, D – IV
- (2) A – II, B – I, C – III, D – IV
- (3) A – I, B – III, C – II, D – IV
- (4) A – I, B – II, C – III, D – IV

197. Which of the following is not true about connective tissue?

[NCERT Old Page 103]

- A. Connective tissues are most abundant and widely distributed in the body of complex animals
- B. They connected and support other tissues
- C. They include such diverse tissues as bone, cartilage, tendons, adipose and loose connective tissues
- D. They form the internal and external lining of many organs
- E. In all connective tissues except blood, the cells secrete fibres of structural proteins called collagen or elastin

Choose the correct answer from the options given below.

- (1) Only D
- (2) Only E
- (3) Only A and B
- (4) Only C and E

198. Match List-I with List-II. [NCERT Page 48, 49, 51]

List - I	List - II
A. <i>Macaca</i>	I. Limbless vertebrate
B. <i>Aptenodytes</i>	II. Cloacal chamber
C. <i>Vipera</i>	III. Pneumatic bones
D. <i>Bufo</i>	IV. Ear pinna

Choose the correct answer from the options given below.

- (1) A – IV, B – III, C – II, D – I
- (2) A – III, B – IV, C – I, D – II
- (3) A – IV, B – III, C – I, D – II
- (4) A – III, B – IV, C – II, D – I

199. Given below are two statements: [NCERT Old Page 105]

**Statement I:** Cells of heart contract as a unit.

**Statement II:** Communication junctions *i.e.* intercalated discs are present between the cells.

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

- (1) Both Statement I and Statement II are true.
- (2) Both Statement I and Statement II are false.
- (3) Statement I is true but Statement II is false.
- (4) Statement I is false but Statement II is true.

200. Match List-I with List-II. [NCERT Page 48, 49]

List - I	List - II
A. <i>Chelone</i>	I. Poison sting
B. <i>Crocodylus</i>	II. Electric organ
C. <i>Torpedo</i>	III. Oviparous
D. <i>Trygon</i>	IV. Four-chambered heart

Choose the correct answer from the options given below.

- (1) A – III, B – IV, C – II, D – I
- (2) A – IV, B – III, C – II, D – I
- (3) A – IV, B – I, C – II, D – III
- (4) A – I, B – II, C – III, D – IV