NEW STANDARD ACADEMY

Review Test - 01

Do not open this Test Booklet until you are asked to do so. **14-08-2023**

PRE-MEDICAL : 11th Undergoing Students

Read carefully the Instructions on the Back Cover of this Test Booklet.

Important Instructions :

1. On the answer sheet, fill in the particulars on Side-1 and Side -2 carefully with blue/black ball point pen only.
2. The test The test is of 3 hours 20 minutes duration and this Test Booklet contains 200 questions. Each question carries 4 marks. For each correct response, the candidate will get 4 marks. For each incorrect response, one mark will be deducted from the total scores. The maximum marks are 720.
3. In this Test Paper, each subject will consist of two sections. Section A will consist of 35 questions (all questions are mandatory) and Section B will have15 questions. Candidate can choose to attempt any 10 question out of these 15 questions. In case if candidate attempts more than 10 questions, first 10 attempted questions will be considered for marking
4. In case of more than one option correct in any question, the best correct option will be considered as answer.
5. Use Blue/Black Ball Point Pen only for writing particulars on this page/marking responses.
6. Rough work is to be done on the space provided for this purpose in the Test Booklet only.
7. On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator before leaving the Room/Hall. The candidates are allowed to take away this Test Booklet with them.
8. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your Form No. anywhere else except in the specified space in the Test Booklet/Answer Sheet.
9. Use of white fluid for correction is not permissible on the Answer Sheet.

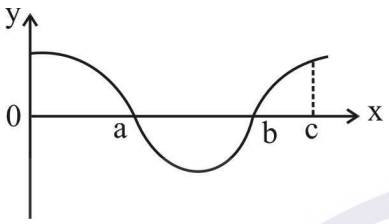
Name of the Candidate(In Capitals) _____

Date of Examintation _____

Candidate`s Signature:_____ Invigilator`s Signature: _____

SECTION - A (PHYSICS)

1.



(A) $\int_0^a ydx > 0$ (B) $\int_a^b ydx < 0$

(C) $\int_c^b ydx < 0$

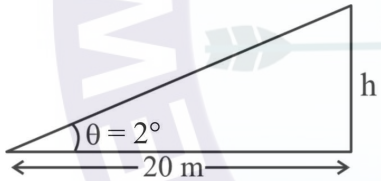
(1) A, B, C are true

(2) only A, B are true

(3) only A, C are true

(4) only A is true

2.



value of h will be

(1) 40 m (2) $\frac{\pi}{4.5}$m

(3) 10 m (4) $\frac{4.5}{\pi}$m

3. y = sin 2x then rate of change of slope at x = 30° will be

(1) 1 (2) –1

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

4. Radius of a cylinder is changing at rate of 1 m/s while height is constant equal to 2 m find rate of change of its volume when radius = 3 m.

(1) $12\frac{m^3}{sec}$ (2) $12\pi\frac{m^3}{s}$

(3) $6\pi\frac{m^3}{sec}$ (4) $2\pi\frac{m^3}{sec}$

5. Value of $\int_R^{2R} \frac{Gm_1m_2}{r^2}dr$

(1) $\frac{Gm_1m_2}{2R}$

(2) $-\frac{Gm_1m_2}{2R}$

(3) $\frac{Gm_1m_2}{2R^2}$

(4) $-\frac{Gm_1m_2}{2R^2}$

6. Value of $\cos^2(75°) + \cos^2(15°)$ will be

(1) greater then 2

(2) b/w 1 and 2

(3) less then 1

(4) 1

7. **Assertion (A) :-** $\sin\theta + \cos\theta$ can be zero when θ is in II[nd] and IV quadrant.

Reason (R) :- For $\sin\theta + \cos\theta = 0$, $\sin\theta$ and $\cos\theta$ should be of opposite sign possible only in II[nd] and IV quadrant.

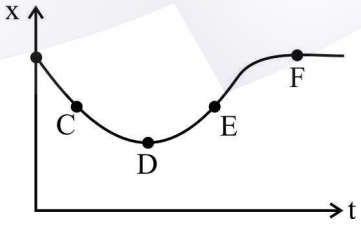
(1) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**

(2) **(A)** is correct but **(R)** is not correct

(3) **(A)** is incorrect but **(R)** is correct

(4) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

8. In the displacement time graph of a moving particle, the instantaneous velocity of the particle is negative at the point.



(1) C (2) D

(3) E (4) F

9. A particle moves along X-axis and its position is $x = U(t - 4) + 2a(t - 4)^2$
($t \longrightarrow$ time)
(A) The initial velocity (at t = 0) is U
(B) The acceleration is 4a (at t = 0)
(C) The acceleration is 2a (at t = 0)
(D) At t = 4 second, particle is at origin
following statements are correct.

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

10. The radius vector of a point A relative to the origin varies with time t as $\vec{r} = 3t\hat{i} - 4t^2\hat{j}$ then the equation of point's trajectory is-

(1) $y = -\frac{2x^2}{3}$ (2) $y = -\frac{4x^2}{9}$

(3) $y = \frac{4x^2}{9}$ (4) $y = \frac{+2x^2}{3}$

11. A river is flowing from west to east at a speed of 10 m/min. A man on south bank of river, capable of swimming at 20 m/min in still water cross the river along shortest path, in what direction should he swim -

(1) 30° West of north

(2) 30° East of north

(3) 30° West of south

(4) 30° East of south

12. A particle is projected from ground from origin. Its path is given by $y = 10x - 2x^2$. Then time of flight is (Use $g = 10\ m/s^2$) :-

(1) $\sqrt{10}$ sec (2) 10 sec

(3) $\sqrt{5}$ sec (4) 5 sec

13. The distance covered by a moving particle is directly proportional to $t^{\frac{1}{2}}$ where t is time elapsed, then body is.

(1) Always retarded.

(2) Always accelerated.

(3) First retarded and then accelerated.

(4) First accelerated and then retarded.

14. A particle is projected making an acute angle with the horizontal. If angle between velocity and acceleration $\vec{g}$ is θ at any time t during the motion, then θ is given by-

(1) $0^o < \theta < 90^o$ (2) $\theta = 90^o$

(3) $\theta < 90^o$ (4) $0^o < \theta < 180^o$

15. **Assertion (A) -** In projectile motion, the angle between the instantaneous velocity and acceleration at the highest position is 180°.
Reason (R) - At the highest position, velocity of projectile will be in horizontal direction in ground to ground projection.

(1) Assertion (A) is correct, reason (R) is correct and Reason (R) is correct explaination for assertion.

(2) Assertion (A) is correct, reason (R) is correct and Reason (R) is not correct explaination for assertion.

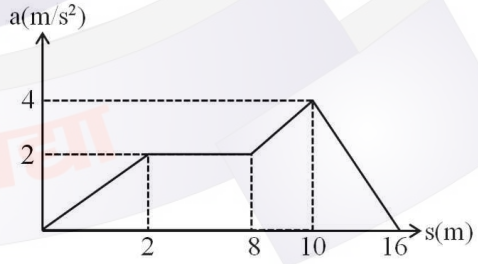
(3) Assertion (A) is correct, Reason (R) is incorrect

(4) Assertion (A) is incorrect , Reason (R) is correct

16. In ground to ground projection, if Range R is related to time of fight T according to relation $R = \frac{15}{4} T^2$, then the angle of projection θ with the horizontal direction is ($g = 10\ m/s^2$) :-

(1) 30° (2) 45° (3) 37° (4) 53°

17. The acceleration-displacement graph of a particle moving in a straight line as shown. initial velocity of particle is zero. Find velocity (m/s) of particle when displacement s = 16 m.



(1) 6 (2) 10 (3) 8 (4) 12

18. The density of a material is 4g/cc. In a system of unit in which unit of length is 5 cm and unit of mass is 20g, the density of the material is :-

(1) 5 (2) 1 (3) 25 (4) 125

19. The velocity of a particle is given as $v = at + bt^2$, where t is time. The dimensions of a and b are :-

(1) $[LT^{-1}]$ and $[LT^{-2}]$

(2) $[LT^{-2}]$ and $[LT^{-3}]$

(3) $[LT^{-3}]$ and $[LT^{-2}]$

(4) $[LT^{-2}]$ and $[LT^{-2}]$

20. If energy E, velocity V, time T are the fundamental quantities, then find dimension of mass in these fundamental quantities :-

(1) [E V T]

(2) $[E^1 V^{-2} T^0]$

(3) $[E^2 V^{-1} T^0]$

(4) $[E V^2 T^0]$

21. If $A = (4 \pm 0.05)$ and $B = (3 \pm 0.02)$, then A–B will be :-

(1) (1 ± 0.03)

(2) (1 ± 0.07)

(3) (1 ± 0.10)

(4) (7 ± 0.07)

22. The percentage error in measurement of mass and speed are 3% and 4% respectively. How much will be the maximum error in the estimate of kinetic energy obtain by measuring mass and speed :-

(1) 11% (2) 8% (3) 4% (4) 3%

23. One full rotation of the cap of a screw gauge is equivalent to 10 mm on main scale. The cap has 100 division. Find the least count of screw gauge :-

(1) 0.1 m (2) 0.1 mm

(3) 0.01 m (4) 0.01 mm

24. Number of significant digits in 0.0023450 is :

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

25. The order of magnitude of the number 0.00572 is :

(1) –5 (2) –4 (3) –2 (4) –3

26. If y represents distance and x-represents time, dimensions of $\frac{d^3y}{dx^3}$ are

(1) $[LT^{-3}]$ (2) $[L^{-2}]$

(3) $[LT^3]$ (4) $[M^0L^0T^0]$

27. Physical quantity $Q = \frac{x^2y^3}{z}$. If maximum precentage error in x, y and z are 1%, 2% and 3% respectively. Find % error in Q.

(1) 8% (2) 7% (3) 6% (4) 11%

28. If $x = k \sin(kat)$, where x is displacement and t is time ; k and a are constants. Find dimensional formula of a :-

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

(3) $[L^{-1}\,T^{-1}]$ (4) $[L^0T^0]$

29. Torr is the unit of

(1) flux (2) density

(3) pressure (4) volume

30. Regarding following statements choose the correct option :-

(A) $|\vec{A} + \vec{B}| A + B$ (B) $|\vec{A} + \vec{B}| A + B$

(C) $|\vec{A} + \vec{B}||\vec{A} - \vec{B}|$ (D) $|\vec{A} + \vec{B}||A - B|$

(1) All are correct

(2) A, D are correct

(3) B, C are correct

(4) A, C, D are correct

31. **Statement-I :** Four Non-Coplanar vectors can't give zero resultant.

Statement-II : Minimum three coplanar vector can give zero resultant.

(1) Both statement-I and statement-II are correct.

(2) Statement-I is correct statement-II is wrong.

(3) Statement-I is wrong statement-II is correct.

(4) Both statement-I and II are wrong.

32. $\vec{A}$ and $\vec{B}$ are two vectors and θ is the angle between them if $|\vec{A} \times \vec{B}| = \sqrt{2}\left(\vec{A}.\vec{B}\right)$ the value of θ :-

(1) $\theta = \tan^{-1}\frac{1}{\sqrt{2}}$ (2) $\theta = 45°$

(3) $\theta = \sin^{-1}\frac{\sqrt{2}}{\sqrt{3}}$ (4) $\theta = \sin^{-1}\frac{1}{\sqrt{3}}$

33. $\vec{A} = 2\hat{i} + 3t\hat{j}$ and $\vec{B} = -3t\hat{i} + t\hat{j}$ where t is time then angle between $\vec{A}$ and $\vec{B}$ will be 90° at t =

(1) 4 sec (2) 3 sec (3) 2 sec (4) 1 sec

34. Vectors which is/are perpendicular to $a\cos\theta\hat{i} + b\sin\theta\hat{j}$ is :-

(1) $b\sin\theta\hat{i} - a\cos\theta\hat{j}$ (2) $\frac{\sin\theta\hat{i}}{a} - \frac{\cos\theta\hat{j}}{b}$

(3) $5a\hat{k}$ (4) All of above

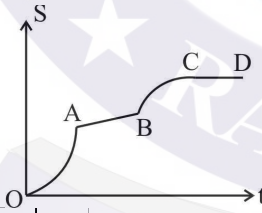
35. The resultant of $\vec{A}$ and $\vec{B}$ is $\vec{R}_1$ on reversing the $\vec{B}$ the resultant becomes $\vec{R}_2$ what is the value of $R_1^2 + R_2^2$?

(1) $A^2 + B^2$ (2) $A^2 - B^2$

(3) $2(A^2 + B^2)$ (4) $2(A^2 - B^2)$

SECTION - B (PHYSICS)

36. The displacement versus time curve is given OA, BC are parabolic and CD is parallel to time axis



	Column-I		Column-II
(i)	OA	(a)	Velocity increases with time
(ii)	AB	(b)	Velocity decreases with time
(iii)	BC	(c)	Velocity independent of time
(iv)	CD	(d)	Velocity is zero

(1) i⟶b, ii⟶a, iii⟶d, iv⟶c

(2) i⟶a, ii⟶c, iii⟶d, iv⟶b

(3) i⟶a, ii⟶c, iii⟶b, iv⟶d

(4) i⟶d, ii⟶b, iii⟶c, iv⟶d

37. In the one-dimensional motion of a particle, the relation between position x and time t is given by $x^2 + 2x = t$ (here $x > 0$) then retardation of particle is

(1) $\frac{1}{4(x+1)^3}$ (2) $4(x+1)^3$

(3) $\frac{1}{2(x+1)^3}$ (4) $2(x+1)^3$

38. Mark the correct statements for a particle going on a straight line –

(x – position, v – velocity, a – acceleration)

(1) If x and v have opposite sign, particle moving towards origin

(2) If x and v have same sign particle moving towards origin

(3) If v and a have opposite sign, object is speeding up

(4) If v is zero then a is also zero for that particular moment

39. The displacement of a particle moving on a straight line is given by $x = 8t - t^2$. Displacement of particle during the first 4 sec. is S_1 and during first 6 sec. is S_2. then $\frac{2S_2}{S_1}$ is :

(1) 2 (2) 3

(3) 1.5 (4) 2.5

40. A person in a lift accelerating downward drops a coin at the moment when its speed is 6 ft/s. The coin is 5 ft. above the floor of the lift at time it is dropped, it strikes the floor in 1 sec. The acceleration of lift is (ft/s^2) ($g = 32\ ft/s^2$)

(1) 12 (2) 32

(3) 22 (4) 42

41. A ball is projected up with 20 m/s at 30° to the horizontal from a tower of height of 40 m. Distance from the foot of tower where the ball hit the ground is-

(1) $20\sqrt{2}$ m (2) $20\sqrt{3}$ m

(3) $40\sqrt{2}$ m (4) $40\sqrt{3}$ m

42. A boat is sailing towards north at a speed of $\sqrt{2}$ m/s. The current is taking it towards east at the rate of 1m/s and a sailor is climbing a vertical pole at the rate of 1m/s then velocity of sailor wrt ground is

(1) $(1-\sqrt{2})\,\hat{i}+1\hat{j}$

(2) $(\sqrt{2}-1)\,\hat{i}+1\hat{k}$

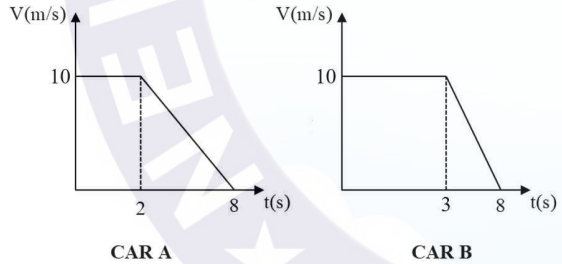
(3) $1\,\hat{i}+\sqrt{2}\,\hat{j}+1\hat{k}$

(4) $2\,\hat{i}+\sqrt{2}\,\hat{j}$

43. For two particles A and B, given that
$\vec{r}_A = 4\hat{i}+6\hat{j}$, $\vec{r}_B = 12\hat{i}+14\hat{j}$,
$\vec{V}_A = 6\hat{i}-2\hat{j}$ and $\vec{V}_B = x\hat{i}-10\hat{j}$
the value of x, if they collide is

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

44. Car A and Car B move on a straight road and their velocity versus time graphs (as shown), Ratio of their average speed is.



(1) $\frac{10}{11}$ (2) $\frac{11}{10}$ (3) $\frac{9}{10}$ (4) $\frac{10}{9}$

45. The observations of a physical quantity in an experiment are 4.8, 4.9, 5.2, 5.0, 5.1. Find % error :-

(1) 0.4% (2) 1.4% (3) 2.4% (4) 4.2%

46. A balloon is moving upward with velocity 20 m/s. It release a stone which comes down to the ground in 15 sec. The height of the balloon from the ground at the moment when the stone was dropped is

(1) 620 m

(2) 825 m

(3) 1035 m

(4) 1215 m

47. In a particular system, the unit of length, mass and time are choosen to be 10 cm, 100 g and 0.01s respectively. The unit of force in this system will be :

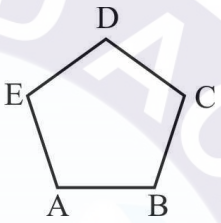
(1) 0.1 N

(2) 100 N

(3) 10 N

(4) 0.01 N

48.



In a regular pentagon $\overrightarrow{AB}+\overrightarrow{AC}+\overrightarrow{AD}+\overrightarrow{AE}$

(1) Zero

(2) $\overrightarrow{DE}+2\overrightarrow{CD}+3\overrightarrow{BC}+4\overrightarrow{AB}$

(3) $4\overrightarrow{DE}+3\overrightarrow{CD}+2\overrightarrow{BC}+\overrightarrow{AB}$

(4) $3\overrightarrow{AB}+3\overrightarrow{AD}$

49. Two forces with equal magnitudes F act on a body and the magnitude of resultant force is $\frac{F}{3}$ the angle between two forces is :-

(1) $\theta=\cos^{-1}\left(-\frac{17}{18}\right)$

(2) $\theta=\cos^{-1}\left(\frac{1}{3}\right)$

(3) $\theta=\cos^{-1}\left(\frac{2}{3}\right)$

(4) $\theta=\cos^{-1}\left(\frac{8}{9}\right)$

50. The three vectors $\vec{A}=3\hat{i}-2\hat{j}-\hat{k}$, $\vec{B}=\hat{i}-3\hat{j}+5\hat{k}$ and $\vec{C}=2\hat{i}+\hat{j}-4\hat{k}$ may form :-

(1) An equilateral triangle

(2) Isosceles triangle

(3) A right angled triangle

(4) No triangle

SECTION-A (CHEMISTRY)

51. Which one of the following constitutes a group of the isoelectronic species :-

(1) $NO^+, C_2^{2-}, CN^-, N_2$ (2) $CN^-, N_2, O_2^{2-}, C_2^{2-}$

(3) N_2, O_2^-, NO^+, CO (4) C_2^{2-}, O_2^-, CO, NO

52. The frequency of a wave of light is $12 \times 10^{14}\ s^{-1}$. The wave number associated with this light is :-

(1) $5 \times 10^{-7}\ m$ (2) $4 \times 10^{-8}\ cm^{-1}$

(3) $2 \times 10^{-7}\ m^{-1}$ (4) $4 \times 10^{4}\ cm^{-1}$

53. Which of the following statement(s) is/are consistent with the Bohr theory of the atom ?

(a) An electron can remain in a particular orbit as long as it continuously absorbs radiation of definite frequency

(b) The lowest energy orbit is that which is closest to the nucleus

(c) All electrons can jump from the K shell to the M shell by emitting radiation of a definite frequency

(1) a, b, c (2) b only

(3) c only (4) a, b

54. What is the potential energy of an electron present in N-shell of the Be^{3+} ion:-

(1) –3.4 eV (2) –6.8 eV

(3) –13.6 eV (4) –27.2 eV

55. Electromagnetic radiation (photon) with highest wavelength results when an electron in the hydrogen atom fall from n = 6 to :-

(1) n = 1 (2) n = 2

(3) n = 3 (4) n = 5

56. The first emission line of balmer series in He^+ ion spectrum has the wave number in (cm^{-1}) :-

(1) $\frac{3R}{4}$ (2) $\frac{5R}{9}$ (3) $\frac{5R}{36}$ (4) $\frac{R}{6}$

57. If kinetic energy of a proton is increased nine times then the de-Broglie wavelength associated with it would become :-

(1) 3 times (2) 9 times

(3) $\frac{1}{3}$ times (4) $\frac{1}{9}$ times

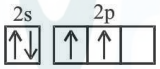
58. What is the maximum number of electrons that can be associated with the following set of quantum numbers ? n = 3; ℓ = 1 and m = –1

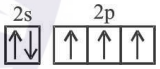
(1) 2 (2) 10 (3) 6 (4) 4

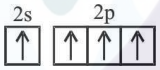
59. For which of the following sets of quantum numbers, an electron will have the highest energy ?

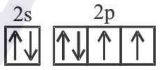
	n	ℓ	m	s
(1)	3	2	1	–1/2
(2)	4	3	–1	+1/2
(3)	4	1	–1	+1/2
(4)	5	0	0	–1/2

60. The orbital diagram in which the Aufbau principle is violated :-

(1) 

(2) 

(3) 

(4) 

61. Number of carbon atoms in 1.8g glucose will be–

(1) $0.1\ N_A$ (2) $0.6\ N_A$

(3) $0.01 N_A$ (4) $0.06 N_A$

62. Which has the maximum electrons ?

(1) 11.2 L Ne at NTP

(2) 20 g H_2

(3) 2 mol SO_2

(4) 22.4 L CH_4 at NTP

63. Vapour density of gas is 5.6. Volume occupied by 3.2g of this gas at STP will be :-

(1) 11.2 L (2) 3.2 L (3) 22.4 L (4) 6.4 L

64. In a compound (Y), the percentage of N is 22.22%. The minimum molecular weight of compound Y is :-

(1) 63 (2) 31.5

(3) 44.44 (4) 126

65. If 4g hydrogen reacts with 4g oxygen, moles of water formed is :-

(1) 0.25 (2) 0.125 (3) 0.75 (4) 0.50

66. A mixture of 20 ml of methane and 20 ml of O_2 is exploded as following reaction and cooled at room temperature. $CH_4 + 2O_2 \longrightarrow CO_2 + H_2O$ then final volume of the gaseous mixture is :-

(1) 10 ml (2) 20 ml

(3) 30 ml (4) 60 ml

67. In a reaction $H_2 + Cl_2 \longrightarrow 2HCl$, 3 moles of H_2 and 5 moles of Cl_2 are taken, the correct statement is :-

(1) H_2 is limiting reagent

(2) Cl_2 is limiting reagent

(3) 3 mole HCl is formed

(4) None of these

68. Percentage of C, H and N are given as follows C = 40%, H = 13.33%, N = 46.67% The empirical formula of compound will be -

(1) CH_2N (2) C_2H_4N (3) CH_4N (4) CH_3N

69. Element P, Q, R and S belong to the same group. The oxide of P is acidic, oxide of Q and R are amphoteric while the oxide of S is basic. Which of the following elements is the most electropositive ?

(1) P (2) Q (3) R (4) S

70. The electron affinity values (in kJ/mol^{-1}) of three halogens X, Y and Z are respectively –349, –328 and – 325, then X, Y and Z respectively are :

(1) F, Cl and Br (2) Cl, F and Br

(3) Cl, Br and F (4) Br, Cl and F

71. Select the incorrect statement :-

(1) s-block metal oxides are basic in nature except BeO which is amphoteric.

(2) Non metal oxides are acidic in nature except NO, N_2O, CO, H_2O.

(3) In d-block all elements are metals

(4) d-block metal oxides are only basic in nature

72. Wrong statement is :-

(1) Diagonal relationship is shown by 2^{nd} & 3^{rd} period element

(2) II A carbonates solubility decreases down the group

(3) Element with configuration 2, 8, 8, 2 forms amphoteric oxides

(4) S^{-1} to S^{-2} formation is endothermic process

73. Oxygen is more electronegative, than sulphur, yet H_2S is acidic in nature while H_2O is neutral. because :-

(1) H_2O molecule are associated due to inter-H bonding

(2) H_2O has higher boiling point than H_2S

(3) H–S bond is weaker than O–H bond

(4) H_2S is gas at ordinary temperature while H_2O is liquid

74. Select the correct statements of the following:

(a) Effective nuclear charge for nitrogen is 3.90

(b) IP of Ne is more than Na^+

(c) Order of electron negativity $sp > sp^2 > sp^3$

(d) Order of acidic character $NH_3 < PH_3 < AsH_3$

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

75. Reactivity of s-block metals increases on moving down the group. What about halogen's reactivity on moving down the group

(1) Increases

(2) Decreases

(3) First Increases than decreases

(4) First decreases than increases

76. Which are correct order

(I) Cl > Br > I order of electron affinity

(II) Na > Al > Mg order of second ionisation potential

(III) HOCl > HOBr > HOI order of acidic strength

(IV) $HClO > HClO_2 > HClO_3 > HClO_4$ order of acidic strength

(1) I, II, III (2) I, III

(3) I (4) All

77. **Assertion :** Noble gases have zero E.N.

Reason : Noble gases have stable outer electronic configuration.

(1) Both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.

(2) Both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.

(3) Assertion is True but the Reason is False.

(4) Both Assertion & Reason are False.

78. The increasing order of electron affinity of the electronic configuration of element is :-

(I) $1s^2 2s^2 2p^6 3s^2 3p^5$ (II) $1s^2 2s^2 2p^3$

(III) $1s^2 2s^2 2p^5$ (IV) $1s^2 2p^2 2p^6 3s^1$

(1) II < IV < III < I

(2) I < II < III < IV

(3) I < III < II < IV

(4) IV < III < II < I

79. Which statements is/are incorrect :

(1) In alkali metal group, from top to bottom increase in size is maximum from Na to K.

(2) Addition of e⁻ in P atom will be exothermic.

(3) IP of F is greater than its EA value.

(4) Reaction $O^-_{(g)} + S_{(g)} \rightarrow O_{(g)} + S^-_{(g)}$ is endothermic.

80. In the formation of a chloride ion, from an isolated gaseous chlorine atom, 3.8 eV energy is released, which would be equal to :-

(1) Ionisation potential of Cl^-

(2) Ionisation potential of Cl

(3) Electronegativity of Cl

(4) Electron affinity of Cl^-

81. Consider the following values of IE(eV) for elements W and X :-

Element	IE_1	IE_2	IE_3	IE_4
W	10.5	15.5	24.9	79.8
X	8	14.8	78.9	105.8

Other two elements Y and Z have outer electronic configuration $ns^2\ np^4$ and $ns^2\ np^5$ respectively. According to given information which of the following compound (s) is/are not possible.

(a) W_2Y_3 (b) X_2Y_3 (c) WZ_2 (d) XZ_2

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

82. ***Assertion (A) :*** 2nd IP of alkali metals is maximum in the period.

Reason (R) : Alkali metals have the smallest atomic size in the period.

(1) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**

(2) **(A)** is correct but **(R)** is not correct

(3) **(A)** is incorrect but **(R)** is correct

(4) Both **(A)** and **(R)** are correct but **(R)** is the correct explanation of **(A)**

83. The ionization energy of boron is less than that of beryllium because :-

(1) beryllium has a higher nuclear charge than boron

(2) beryllium has a lower nuclear charge than boron

(3) the outermost electron in boron occupies a 2p-orbital

(4) the 2s and 2p-orbitals of boron are degenerate

84. ***Assertion (A) :*** Second IP of oxygen is greater than that of second IP fluorine.
Reason (R) : Oxygen aquires stable half filled electronic configuration after loosing one electron.

(1) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**

(2) **(A)** is correct but **(R)** is not correct

(3) **(A)** is incorrect but **(R)** is correct

(4) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

85. K^+, Cl^-, Ca^{2+} and S^{2-} ions are isoelectronic. The decreasing order of their radius is :

(1) $S^{2-} > Cl^- > K^+ > Ca^{2+}$

(2) $Ca^{2+} > K^+ > Cl^- > S^{2-}$

(3) $K^+ > C^{l-} > Ca^{2+} >$

(4) $Cl^- > S^{2-} > Ca^{2+} > K^+$

SECTION-B (CHEMISTRY)

86. If ionisation energy of H- atom is 27 eV then energy in its 2^{nd} excited state will be :-

(1) 3eV (2) –3eV

(3) –27eV (4) –18eV

87. The frequency of radiation emitted when the electron falls from n = 4 to n = 1 in a H-atom will be : (Given ionization energy of H = 2.18×10^{-18}J atom^{-1} and h = 6.625×10^{-34} Js):-

(1) 3.07×10^{15} s^{-1} (2) 2.00×10^{15} s^{-1}

(3) 1.54×10^{15} s^{-1} (4) 1.03×10^{15} s^{-1}

88. What are the possible values of n, l and m for an 4f atomic orbital ?

(1) n = 4, l = 0, 1, 2, 3, m = –2, –1, 0, +1, +2

(2) n = 4, l = 3, m = –3, –2, –1, 0, +1, +2, +3

(3) n = 4, l = 2, m = –2, –1, 0, +1, +2, +3

(4) n = 4, l = 0, m = –1, 0, +1

89. What mass of sodium is required to have same number of atoms that are present in 6 gm of magnesium ?

(1) 23 g (2) 46 g (3) 5.75 g (4) 11 g

90. In the following reaction, if 56 g of N_2 react with H_2. What will be the volume of NH_3 at STP.
$N_2 + 3H_2 \longrightarrow 2NH_3$

(1) 44.8 L (2) 89.6 L (3) 22.4 L (4) 11.2 L

91. $3O_2 + 2N_2 \longrightarrow 2N_2O_3$
9 mol O_2 and 14 mol N_2 are allowed to react. When 3 mol O_2 remains unreacted, till then how many moles of N_2O_3 would have been produced ?

(1) 6 (2) 3 (3) 4 (4) 12

92. The mass of CO_2 which is obtained by heating 10 kg of 80% pure lime stone ($CaCO_3$) is :-

(1) 4.4 kg (2) 6.6 kg

(3) 3.52 kg (4) 8.8 kg

93. ***Assertion :-*** H_2Se is more acidic than H_2S.
Reason :- S is less electronegative than Se.

(1) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**

(2) **(A)** is correct but **(R)** is not correct

(3) **(A)** is incorrect but **(R)** is correct

(4) Both **(A)** and **(R)** are correct but **(R)** is the correct explanation of **(A)**

94. Given configuration are for element X, Y & Z
X = (Ne) $3s^2\ 3p^5$
Y = (Ne) $3s^2\ 3p^6$
Z = (Ne) $3s^2\ 3p^4$
then.

(1) Conversion from Y to X will require more energy compared to conversion from X to Z

(2) Conversion X⟶ Y and X ⟶ Z both are endothermic

(3) Both are correct

(4) None is correct

95. One mole of F atoms are ionised to F^- the energy released is X Joules. Then :-

(1) X Joules is sufficient to ionise 1 mole of gaseous Cl into Cl^+

(2) X Joules is sufficient to ionise 1 mole of gaseous F into F^+

(3) X Joules is sufficient to ionise 1 mole of gaseous F into F^+ as well as 1 mole of gaseous Cl into Cl^+

(4) X joules is less than required energy for 1 mole of gaseous F or Cl atom will be ionised to F^+ or Cl^+

96. Be and Mg have +ve value of ΔH_{eq}, this can be explained by :

(a) By their stable configuration

(b) By their extremely small size

(c) By weak sheilding of 's' electrons

(d) By strong sheilding of 's' electrons

Correct code is :

(1) a and c (2) a and d

(3) b and c (4) a and b

97. Consider the following values of I.E (ev/atom) for elements W and X :

Element	IE_1	IE_2	IE_3	IE_4
W	10.5	15.5	18.9	79.8
X	8	14.8	78.9	105.8

other element Y and Z have outer electronic configuration ns^2np^4 and ns^2np^5, X, Y, Z, W elements belongs to second short period then find out the correct statement :

(1) Oxide of W element is basic

(2) I^{st} I.E of X is greater than Z

(3) Among the four elements, Z has minimum ionisation energy

(4) II^{nd} I.E of Y is greater than Z

98. ***Assertion (A) :*** I.P. of first element in a period is minimum.

Reason (R) : Effective nuclear charge of first element in a period is minimum

(1) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**

(2) **(A)** is correct but **(R)** is not correct

(3) **(A)** is incorrect but **(R)** is correct

(4) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

99. Identify the wrong statement in the following:

(1) Atomic radius of the elements increases as one moves down the first group of the periodic table

(2) Atomic radius of the elements decreases as one-moves across from left to right in the 2^{nd} period of the periodic table

(3) Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius

(4) Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius

100. (a) Be and Mg are alkaline earth metal.

(b) K^+ have larger radii than Ca^{+2}.

(c) All d-block element are transition elements.

(d) H^- ions is larger than F^-.

Incorrect statement is/are :-

(1) a, c and d

(2) b and c

(3) a and d

(4) a and c

SECTION - A (BOTANY)

101. Sporangia are borne on sporophylls which are arranged spirally along an axis to born lax (loose) or compact is called ?

(1) Endosperm (2) Cone/strobilli

(3) Ovule (4) Archegonia

102. Male and female gametophyte do not have free living existence in ?

(1) Gymnosperm

(2) angiosperm

(3) Both (1) and (2)

(4) Pteridophyta

103. Unique feature of angiosperms is :-

(1) Seed formation

(2) Double fertilization

(3) Naked seed

(4) Formation of pollen tube

104. Most distinct type of alternation of generation in plant kingdom is demonstrated by :-

(1) Pteridophyta

(2) Algae

(3) Bryophyta

(4) Gymnosperm

105. Evolution of seed habit first started in :-

(1) *Pinus* (2) *Selaginella*

(3) *Funaria* (4) *Liverwort*

106. Match the incorrect options ?

(1) *Pinus* - fungal association

(2) *Cycas* - N_2 fixation by cyanobacteria

(3) *Cedrus* - branched stem

(4) *Cycas* - Simple leaves

107. Find out the correct statements :-

(1) Pteridophytes are vascular plants.

(2) Main plant body of pteridophyta is gametophyte.

(3) In *pinus*, pinnate leaves persist for a few years.

(4) Ferns are megaphyllous/macrophyllous

(1) Two (2) One

(3) Three (4) Four

108. How many plants in the list given below are related to gymnosperm

Adiantum, Cycas, Cedrus, Wolfia, Lycopodium, Sequoia, Wheat

(1) Three (2) One (3) Five (4) Six

109. The green algae having colonial form is :-

(1) *Ulothrix* (2) *Spirogyra*

(3) *Volvox* (4) *Chara*

110. Which chemical is commonly found in the cell wall of all types of algae ?

(1) Pectin (2) Cellulose and algin

(3) Cellulose (4) Hemicellulose

111. In the life cycle of bryophytes, antherozoid fuses with the egg to produce :-

(1) Spore (2) Sporophyte

(3) Zygote (4) Bud

112. Some cells of sporophyte undergo __A__ to produce __B__ spores in bryophytes.

(1) A = Mitosis, B = Haploid

(2) A = Meiosis, B = Haploid

(3) A = Meiosis, B = Diploid

(4) A = Mitosis, B = Diploid

113. The moss, which provides peat that has long been used as fuel is :-

(1) *Sphagnum* (2) *Funaria*

(3) *Polytrichum* (4) *Riccia*

114. Select the incorrect statement from the following :-

(1) The chloroplasts of all green algae are cup-shaped.

(2) The members of brown algae are found primarily in marine habitats.

(3) Red thalli of most of the red algae are multicellular.

(4) *Ectocarpus* is an example of brown algae.

115. **Statement-1 :-** The sporophyte of bryophytes is not free living.

Statement-2 :- The sporophyte of liverworts derives nourishment from the photosynthetic gametophyte.

(1) Statement-1 is correct but statement-2 is incorrect.

(2) Statement-1 is incorrect but statement-2 is correct.

(3) Both statement-1 and statement-2 are correct.

(4) Both statement-1 and statement-2 are incorrect.

116. **Assertion :-** *Sphagnum* is used as packing material for trans-shipment of living material.

Reason :- *Sphagnum* has the capacity to hold water.

(1) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.

(2) Both Assertion are Reason are correct but Reason is not the correct explanation of Assertion.

(3) Assertion is correct but reason is incorrect.

(4) Assertion is incorrect but Reason is correct.

117. How many of the following statements are incorrect ?

(a) Bryophytes are of great economic importance.

(b) Female sex organ in Liverworts is called antheridium.

(c) Main plant of bryophytes is less differentiated than that of algae.

(d) Archegonium fuses with spore to produce the zygote.

Options :-

(1) Four (2) Three

(3) Two (4) One

118. How many of the following statements are incorrect ?

(A) Chemotaxonomy is based on cytological information

(B) Numerical taxonomy is based on computers

(C) Cytotaxonomy is based on chemical constituents.

(D) Artificial classification is based on natural affinities among the organisms.

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

119. **Statement-I :** Earliest classifications were based on the uses of various organisms.

Statement-II : Artificial classification is done with help of computers.

(1) Statement I & II are correct

(2) Statement II & I are incorrect

(3) Statement I is correct & II is incorrect

(4) Statement II is correct & I is incorrect

120. **Statement-I :** Numerical taxonomy is based on computers.

Statement-II : Phylogenetic classification is not based on evolutionary relationships.

(1) Statement I and II are correct

(2) Statement I & II are incorrect

(3) Statement I is correct & II is incorrect

(4) Statement II is correct & I is incorrect

121. Identify the correct order :

(1) Kingdom ⟶ Genus ⟶ Family ⟶ Species

(2) Kingdom ⟶ Family ⟶ Order ⟶ Species

(3) Division ⟶ Class ⟶ Genus ⟶ Species

(4) Division ⟶ Kingdom ⟶ Species ⟶ Genus

122. **Statement-I :** Artificial classification is based on a few characters.

Statement-II : Natural classification is based on natural affinities among the organism.

(1) Statement I & II is correct

(2) Statement I & II is incorrect

(3) Statement I is correct & II is incorrect

(4) Statement II is correct I is incorrect

123. In majority of higher animals and plants growth and reproduction are :

(1) Mutually exclusive events

(2) Mutually inclusive events

(3) Both (1) & (2)

(4) Rare events

124. What are the twin characteristics of growth ?

(1) Increase in mass

(2) Increase in number

(3) Both (1) & (2)

(4) Decrease in mass & number

125. The sum total of all the chemical reaction occuring in a body is known as :

(1) Growth (2) Reproduction

(3) Metabolism (4) Consciousness

126. The number of species that are known and described range in between _____ million.

(1) 0.2 – 0.3 (2) 1.7 – 1.8

(3) 3.4 – 3.5 (4) 1.2 – 1.3

127. In *Mangifera indica*, indica represents :

(1) Genus (2) Family

(3) Order (4) Specific epithet

128. Specialised cell of cyanobacteria which can fix atmospheric nitrogen is called ?

(1) Akinetes (2) Spores

(3) Heterocysts (4) Mucilage

129. Methanogen (in cattles) produces methane from ?

(1) Rumen (2) Dung

(3) Ammonia (4) Oxygen

130. Use of chrysophytes are -

(1) Polishing (2) Filtration

(3) Sound proofing (4) All of these

131. Which of the following group has stiff cellulose plates ?

(1) Chrysophytes (2) Dinoflagellate

(3) Euglenoid (4) Slime moulds

132. If sexual stage of deuteromycetes gets discovered they are moved to ascomycetes or basidiomycetes only and not to phycomycetes because :

(1) They have ascus and basidium.

(2) Their mycelium is septate and branched

(3) Their mycelium is aseptated and branched.

(4) They form oospore

133. Match the column -

	Column-I		**Column-II**
(a)	Ascomycetes	(i)	*Albugo*
(b)	Phycomycetes	(ii)	*Claviceps*
(c)	Basidiomycetes	(iii)	*Colletotrichum*
(d)	Deuteromycetes	(iv)	*Agaricus*

Options :-

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

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

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

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

134. Chemosynthetic bacteria help in recycling of which nutrients ?

(1) Phosphorous (2) Nitrogen

(3) Iron (4) All of these

135. Choose the correct order with respect to size ?

(1) Virus > Viroid > Prions

(2) Viroid > Virus > Prion

(3) Viroid ≈Virus > Prion

(4) Virus ≈ Prions > viroids

SECTION - B (BOTANY)

136. In Angiosperm female gametophyte is :-

(1) Endosperm

(2) Megaspore

(3) Embryosac

(4) Antipodal cell

137. The leaves in gymnosperms are well-adapted to extreme conditions due to all, except :-

(1) Needle like leaves

(2) Thick cuticle

(3) Sunken Stomata

(4) Coralloid roots

138. Incorrectly match the options ?

(1) Endosperm (angiosperm) $\longrightarrow$ 3n

(2) Secondary nucleus $\longrightarrow$ 2n

(3) Embryosac $\longrightarrow$ 2n

(4) Synergids $\longrightarrow$ n

139. Consider the following four statements :-

(a) The life cycle of all seed bearing plants is diplontic.

(b) Most of the Ferns are homosporous.

(c) Origin of seed habit can be traced in angiosperm.

(d) In Heterosporous pteridophyta embryo develops in female gametophyte which is retained on parent sporophyte for variable periods.

How many statements are correct ?

(1) One (2) Three

(3) Two (4) Four

140. Floridean starch is the stored food of :-

(1) Green algae

(2) Red algae

(3) Brown algae

(4) Blue green algae

141. The main plant body of liverworts is :-

(1) Haploid

(2) Diploid

(3) Triploid

(4) Tetraploid

142. **Statement-1 :-** Fusion between one large, non-motile female gamete and a smaller, motile male gamete is termed as oogamous.

Statement-2 :- Oogamous type of sexual reproduction is found in *Fucus*.

(1) Statement-1 is correct but statement-2 is incorrect.

(2) Statement-1 is incorrect but statement-2 is correct.

(3) Both statement-1 and statement-2 are correct.

(4) Both statement-1 and statement-2 are incorrect.

143. Select the correct match from the following :-

(1) Protonema - Liverworts

(2) Gemma - Diploid sexual buds

(3) Antherozoids of Bryophytes - Multiflagellated

(4) Mosses - Role in plant succession

144. Choose the incorrect statement :

(1) In Plants, growth occurs throughout their life span.

(2) In animals, growth is seen only upto a certain age

(3) Cell division occurs in certain tissues to replace lost cells

(4) Increase in mass is the only character of growth

145. What are the exception of growth due to which it cannot be taken as defining property ?

(1) Mountains

(2) Boulders

(3) Sand mounds

(4) All of the above

146. Which of the following doesn't forms the basis of modern taxonomic studies ?

(1) External structure

(2) Internal structure

(3) Ecological information

(4) Sexual features only

147. In which class of fungi prolonged dikaryotic stage is not seen ?

(1) Ascomycetes

(2) Basidiomycetes

(3) Both Ascomycetes and Basidiomycetes

(4) Phycomycetes

148. Formation of conidia and zoospore respectively ?

(1) Exogenous, Endogenous

(2) Endogenous, Exogenous

(3) Exogenous, Exogenous

(4) Endogenous Endogenous

149. Choose the incorrect match -

	I	II
(1)	Chief producer of ocean	Chrysophytes
(2)	Plasmodium formation	Slime mould
(3)	Red tides	Euglenoid
(4)	Stiff cellulose plates	Dinoflagellate

150. **Assertion :-** Slime moulds can survive through adverse conditions.
Reason :- They forms plasmodium.

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

(2) Both A & R are wrong.

(3) Both A & R are correct but R is not a correct explanation of A

(4) A is correct R is wrong.

SECTION-A (ZOOLOGY)

151. What is the principal role of the setae in earthworm :-

(1) Excretion (2) Nutrition

(3) Respiration (4) Locomotion

152. In earthworm, fertilisation and development occurs with in :-

(1) Cocoons (2) Soil

(3) Clitellum (4) Spermathecae

153. Heart of cockroach present in :-

(1) Mid ventral line of thorax and abdomen

(2) Mid dorsal line of thorax and abdomen

(3) Lateral side of body

(4) Head region only

154. In cockroach opening of the spiracles is regulated by :-

(1) Ostia

(2) Sphincters

(3) Valves

(4) Sinuses

155. Tongue of frog is :-

(1) Trilobed

(2) Bilobed

(3) Funnel shaped

(4) Tongue is absent

156. The central nervous system of frog is divided in :-

(1) Cranial and spinal nerves

(2) Sympathetic and parasympathetic system

(3) Fore brain, mid brain only

(4) Brain and spinal cord

157. In earthworm, accessory glands are present :-

(1) One pair each in 17^{th} and 19^{th} segments

(2) Two pair each in 17^{th} and 19^{th} segments

(3) One pair each in 10^{th} and 11^{th} segments

(4) Two pair each in 12^{th} and 13^{th} segments

158. Read the following statements and find out the incorrect statement :-

(1) Earthworm is hermaphrodite

(2) Earthworm is used as bait in game fishing

(3) Packets of sperms are called cocoon

(4) Earthworm have specialised chemoreceptoes

159. In frog during aestivation and hibernation gaseous exchange takes place-through:-

(1) Skin only

(2) Lungs and buccal cavity

(3) Skin and buccal cavity

(4) Skin, lungs and buccal cavity

160. Identify the parts labelled as A, B, C and D from given below diagram and select the right option about them :

Options :

	Part-A	Part-B	Part-C	Part-D
(1)	Fibroblast	Mast cell	Collagen fibres	Macrophage
(2)	Mast cell	Collagen fibres	Fibroblast	Macrophage
(3)	Collagen fibres	Fibroblast	Macrophage	Mast cell
(4)	Macrophage	Mast cell	Fibroblast	Collagen fibres

161. Match column I with column II and select the right option about them :

Column-I		Column-II	
(A)	Dense regular connective tissues	(i)	Cartilage, bones and blood
(B)	Dense irregular connective tissues	(ii)	Between bones of vertebral column and tip of nose
(C)	Specialised connective tissue	(iii)	Skin
(D)	Cartilage	(iv)	Tendons and ligament

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

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

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

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

162. Which of the following tissue is located mainly beneath the skin ?

(1) Dense regular connective tissue

(2) Adipose connective tissue

(3) Simple epithelial tissue

(4) All of the above

163. Tendon which attach skeletal muscle to bone is an example of :

(1) Dense regular connective tissue

(2) Dense irregular connective tissue

(3) Adipose connective tissue

(4) Specialised connective tissue

164. Fill in the blanks

The intercellular material of cartilage is ___A___ and ___B___. Find out the correct option about A and B.

(1) A-Solid, B-Non pliable

(2) A-Hard, B-Pliable

(3) A-Hard, B-Non pliable

(4) A-solid, B-pliable

165. Which type of muscle tissue is found in the wall of internal organs such as *blood vessels*, *stomach* and *intestine*?

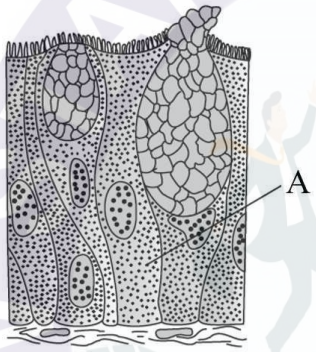
(1) Skeletal muscle tissue

(2) Smooth muscle tissue

(3) Cardiac muscle tissue

(4) Skeletal and smooth both

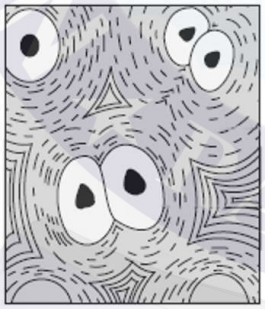
166. Find out correct option about labelled part-A from given below diagram :



(1) Unicellular gland (2) Multicellular gland

(3) Collagen fibres (4) Mast cell

167. The figure given below is of -



(1) Bone

(2) Cartilage

(3) Neural tissue

(4) Dense regular connective tissue

168. In *Leucosolenia*, totipotent cell is-

(1) Archaeocyte (2) Choanocyte

(3) Thesocyte (4) Porocyte

169. Which of the following is a free living platyhelminth.

(1) Planeria

(2) Fasciola

(3) Ascaris

(4) Wuchereria

170. Which of the following organism if found in lymph vessels?

(1) *Plasmodium* (2) *Wuchereria*

(3) *Taenia* (4) *Ascaris*

171. Segmentation of body is not represented in

(1) Cray fish (2) Frog

(3) Grasshopper (4) Star fish

172. Sexual dimorphism is found in

(1) *Ascaris* (2) *Amoeba*

(3) *Pheretima* (4) All of these

173. Which one group contains an hermaphrodite animals

(1) Ascaris, hydra, pheretima

(2) Hydra, homo sapiens, hirudinaria

(3) Fasciola, hydra, palaemon

(4) Hirudinaria, pheretima, taenia

174. Which of the following are 'Cellular grade' organisms

(1) Sponges

(2) Coelenterates

(3) Prokaryotes

(4) Vertebrates

175. In which phylum nerve cells are found but nerves are absent

(1) Porifera (2) Coelenterata

(3) Platyhelminthes (4) Nemathelminthes

176. Nereis possesses lateral appendages called as parapodia which help in -

(1) Locomotion (2) Swimming

(3) Respiration (4) All of these

177. The examples of cold blooded animals are :-

(1) Scoliodon (2) Bufo

(3) Chelone (4) All of them

178. Body of insect is divisible into -

(1) Head, thorax and abdomen

(2) Head, trunk and abdomen

(3) Cephalothorax and abdomen

(4) Head and trunk

179. Out of following which is incorrect match ?

(1) Corvus Crow

(2) Macropus Kangaroo

(3) Calotes Garden lizard

(4) Hyla Toad

180. Open blood circulation is found in -

(1) Earthworm (2) Human

(3) Cockroach (4) Snake

181. Blood colour of insects is -

(1) Colourless (2) Red

(3) Blue (4) Yellow

182. Pearls are obtained from -

(1) Sepia (2) Pinctada

(3) Dentalium (4) Octopus

183. In which of the following phylum larvae are bilaterally symmetrical and adult are radically symmetrical ?

(1) Mollusca (2) Echinodermata

(3) Annelida (4) Arthropoda

184. In which animal body is divided into proboscis collar and trunk ?

(1) Branchiostoma (2) Ascidia

(3) Balanoglossus (4) Scoliodon

185. Out of following how many are the aquarium fishes :-

Catla, Labeo, Betta, Pterophylum, Gambusia

(1) Two (2) Three

(3) Four (4) Five

SECTION-B (ZOOLOGY)

186. In cockroach, labium, labrum and hypopharynx are commonly called :-

(1) Upper lip, lower lip and crop respectively

(2) Upper lip, lower lip and tongue respectively

(3) Lower lip, upper lip and tongue respectively

(4) Lower lip, upper lip and jaw respectively

187. In male cockroach, the external genitalia is represented by :-

(1) Three phallomeres - right, left and dorsal

(2) Three gonapophysis - right, left and ventral

(3) Three phallomeres - right, left and lateral

(4) Chitinous symmetrical structures

188. How many of the following statements are correct :-

(A) Cockroach having 10 pairs of spiracles present on the lateral side of body.

(B) In cockroach fertilised eggs are encased in 8 m.m. long capsules called oothecae.

(C) Frog have hepatic portat system as well as renal portat system.

(D) In earthworm typhlosole increase the effective area of absorption in intestine.

(1) Two (2) Three

(3) One (4) Four

189. **Statement-I :** Connective tissues are most abundant and widely distributed in the body of complex animals.

Statement-II : In all connective tissues except blood, the cells secrete fibres of structural proteins called collagen or Elastin.

(1) Statement I and II both are correct

(2) Statement I and II both are incorrect

(3) Only I statement is correct

(4) Only II statement is correct

190. **Assertion (A) :-** Limb bones, such as the long bones of the legs, serve weight bearing functions.

Reason (R) :- Bones have a hard and non-pliable ground substance rich in calcium salts and collagen fibres which gives bones its strength.

(1) A and R both are correct and R is the correct explaination of A.

(2) A and R both are correct but R is not the correct explaination of A.

(3) A is correct but R is not correct.

(4) A is not correct but R is correct.

191. Read the following four statements A-D :

(A) Loose connective tissue has cells and fibres loosely arranged in a semifluid ground substance.

(B) Adipose tissue is another type of loose connective tissue located mainly beneath the skin.

(C) The cells of adipose tissue are specialised to store fats.

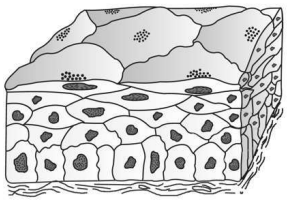
(D) Fibres and fibroblasts are not compactly packed in the dense connective tissues.

How many of the above statements are correct ?

(1) Two (2) Four

(3) One (4) Three

192. Which of the following is incorrect about the figure given below ?



(1) Made up of more than one layer of cells

(2) This provide protection against chemical and mechanical stresses

(3) It covers the dry surface of the skin

(4) Its main function is secretion and absorption

193. Which of the followings are most abundant and widely distributed tissues in the body of complex animals ?

(1) Epithelial tissue (2) Connective tissue

(3) Neural tissue (4) Muscular tissue

194. Cnidoblast cells are found in :-

(1) Hydra

(2) Ctenophora

(3) Sycon

(4) Leucosolenia

195. Malignant malaria is caused by

(1) *Plasmodium vivax*

(2) *P. ovale*

(3) *P. falciparum*

(4) *P. malariae*

196. Physiological division of labour is almost not shown by the animals belonging to

(1) Arthropoda

(2) Aschelminthes

(3) Protozoa

(4) Coelenterata

197. Aristotle classified the animals into two groups. Mark the correct one

(1) Vertebrata and invertebrata

(2) Chordata and non-chordata

(3) Protozoa and metazoa

(4) Enaima and anaima

198. Triploblastic, organ system grade body, coelomate radial symmetric and unsegmented animals are of

(1) Coelenterata (2) Echinodermata

(3) Mollusca (4) Arthropoda

199. They are marine but migrate for spawning to fresh water. After spawning within few days they die. This statement apply for :-

(1) Ostracodermi (2) cyclostomata

(3) Chondrichthyes (4) Osteichthyes

200. In which of the following class of phylum mollusca, torsion occurs ?

(1) Gastropoda

(2) Pelecypoda

(3) Cephalopoda

(4) Monoplacophora