

AIM NEET Part Test-01

PHYSICS

TOPIC COVERED

Physics:	Physical World, Unit and Measurement, Motion in a Straight Line, Motion in a Plane, Laws of Motion
Chemistry:	Some Basic Concepts of Chemistry, Structure of Atoms, Classification of Elements and Periodicity of Elements
Botany:	The Living World, Biological Classification, Plant Kingdom
Zoology:	Animal Kingdom, Structural Organisation in Animals

Duration: 3 hr 20 min

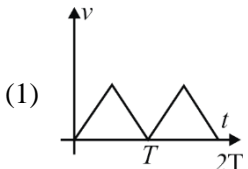
Max Marks: 720

General Instructions:

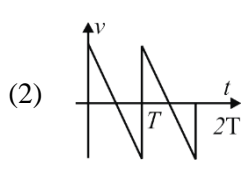
- The test will contain 200 Questions of Physics, Chemistry, Botany, and Zoology & The test will be objective type. (Attempt only 180).
- Every subject contains two Part A- 35 Questions and Part B-15 Questions (Attempt only 10).
- All 35 Questions of Part-A are Compulsory to attempt
- Time given for test is 200 minutes..
- Marking is +4 for every correct answer, – 1 for every wrong answer.
- You can reattempt the test in case of any technical issue.
- Test will start at 2:00 pm and students can attempt test at any time of their own preferences

SECTION - A

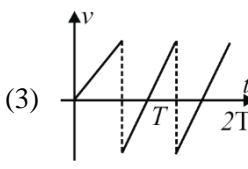
- If dimensions of length are expressed as $G^x C^y H^z$ where G , c and h are the universal gravitational constant, speed of light and Planck's constant respectively, then the value of x , y and z are
 (1) $1/2, -3/2, 1/2$ (2) $1/2, -3/2, -1/2$
 (3) $1/2, 3/2, 1/2$ (4) $-1/2, -3/2, 1/2$
- Sum of the number 37.46, 12.3 and 1.4 is given by
 (1) 51.16 (2) 51.1
 (3) 51.2 (4) 51
- A substance weighing 5.74 g occupies a volume of 1.2 cm^3 . Its density with due regard to significant figures is
 (1) 4.78 g/cm^3 (2) 4.378 g/cm^3
 (3) 4.8 g/cm^3 (4) 5 g/cm^3
- A physical parameter a can be determined by measuring the parameters b , c , d and e using the relation $a = b^{\alpha} c^{\beta} / d^{\lambda} e^{\delta}$. If the maximum errors in the measurement of b , c , d and e are $b_1\%$, $c_1\%$, $d_1\%$ and $e_1\%$, then the maximum error in the value of a determined by the experiment is
 (1) $(b_1 + c_1 + d_1 + e_1)\%$
 (2) $(b_1 + d_1 - d_1 - e_1)\%$
 (3) $(ab_1 + \beta c_1 - \gamma d_1 - \delta e_1)\%$
 (4) $(ab_1 + \beta c_1 + \gamma d_1 + \delta e_1)\%$
- Thickness of a pencil measured by using a screw gauge (least count $.001 \text{ cm}$) comes out to be 0.802 cm . The percentage error in the measurement is
 (1) 0.125% (2) 2.43%
 (3) 4.12% (4) 2.14%
- Consider the two screw gauges described below:
 A : pitch is 1 mm and 100 divisions on circular scale
 B: pitch is 0.5 mm and 50 divisions on circular scale
 Select the correct alternative.
 (1) Both have same least count
 (2) A has lower least count
 (3) B has lower least count
 (4) least count of main scale is same for both
- The vector sum of two forces is perpendicular to their vector differences. In that case, the forces
 Select one:
 (1) Are equal to each other in magnitude
 (2) Are not equal to each other in magnitude
 (3) Cannot be predicted
 (4) Are equal to each other

8. If the sum of two unit vectors is a unit vector, then magnitude of difference is
 (1) $\sqrt{2}$ (2) $\sqrt{3}$
 (3) $1/\sqrt{2}$ (4) $\sqrt{5}$
9. The angle between two vectors $-2\hat{i} + 3\hat{j} + \hat{k}$ and $\hat{i} + 2\hat{j} + 2\hat{k}$ is
 (1) 0° (2) 90°
 (3) 180° (4) None of the above
10. If $\vec{A} \times \vec{B} = \vec{C}$ then which of the following statements is wrong?
 (1) $\vec{C} \perp \vec{A}$ (2) $\vec{C} \perp \vec{B}$
 (3) $\vec{C} \perp (\vec{A} + \vec{B})$ (4) $\vec{C} \perp (\vec{A} \times \vec{B})$
11. A car is moving with speed 30 m/sec on a circular path of radius 500 m. Its speed is increasing at the rate of 2 m/sec^2 . What is the acceleration of the car
 (1) 2 m/sec^2 (2) 2.7 m/sec^2
 (3) 1.8 m/sec^2 (4) 9.8 m/sec^2
12. The area of the parallelogram whose sides are represented by the vectors $\hat{j} + 2\hat{k}$ and $\hat{i} + 2\hat{j} - \hat{k}$ is
 (1) $\sqrt{59}$ sq. unit (2) $\sqrt{69}$ sq. unit
 (3) 50 sq. unit (4) 60 sq. unit
13. A body moves 6 m north, 8 m east and 10 m vertically upwards, what is its resultant displacement from initial position.
 (1) $10\sqrt{2}$ m (2) 10 m
 (3) $\frac{10}{\sqrt{2}}$ m (4) 10×2 m
14. Which of the following four statements is false
 (1) A body can have zero velocity and still be accelerated
 (2) A body can have a constant velocity and still have a varying speed
 (3) A body can have a constant speed and still have a varying velocity
 (4) The direction of the velocity of a body can change when its acceleration is constant
15. A very broad elevator is going up vertically with a constant acceleration of 2 m/s^2 . At the instant when its velocity is 4 m/s a ball is projected from the floor of the lift with a speed of 4 m/s relative to the floor at an elevation of 30° . The time taken by the ball to return to the floor is: ($g = 10\text{ m/s}^2$)
 (1) 0.5 s (2) 0.33 s
 (3) 0.25 s (4) 1 s
16. When a ceiling fan is switched off its angular velocity reduces to 50% while it makes 36 rotations. How rotation will it make before coming to rest (Assume uniform angular retardation)
 (1) 18 (2) 12
 (3) 36 (4) 48
17. A man running at 6 km/hr on a horizontal road in vertically falling rain observes that the rain hits him at 30° from the vertical. The actual velocity of rain has magnitude.
 (1) 6 km/hr
 (2) $6\sqrt{3}$ km/hr
 (3) $2\sqrt{3}$ km/hr
 (4) 2 km/hr
18. The displacement of a particle is given by $y = a + bt + ct^2 - dt^4$. The initial velocity and acceleration are respectively
 (1) $b, -4d$ (2) $-b, -2c$
 (3) $b, 2c$ (4) $2c, -4d$
19. A ball is dropped from certain height on a glass floor so that it rebounds elastically to the same height. If the process continues, the velocity-time graph for such a motion would be-
- 

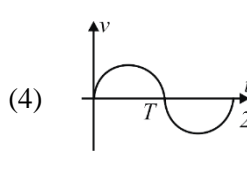
(1)

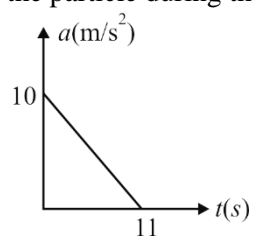


(2)



(3)



(4)
20. A particle starting from rest undergoes a rectilinear motion with acceleration a . The variation of a with time t is shown in figure. The maximum velocity attained by the particle during the motion is:
- 
- (1) 55 m/s

(3) 110 m/s

(2) 500 m/s

(4) 650 m/s
21. A road is 10 m wide. Its radius of curvature is 50 m. The outer edge is above the lower edge by a distance of 1.5 m. This road is most suited for the velocity
 (1) 2.5 m/sec (2) 4.5 m/sec
 (3) 6.5 m/sec (4) 8.5 m/sec

22. The co-ordinates of a moving particle at any time t are given by $x = ct^2$ and $y = bt^2$ the speed of the particle is given by

- (1) $2t(c + b)$ (2) $2t - \sqrt{c^2 - b^2}$
 (3) $t\sqrt{(c^2 + b^2)}$ (4) $2t\sqrt{(c^2 + b^2)}$

23. The horizontal range is four times the maximum height attained by a projectile. The angle of projection is

- (1) 90° (2) 60°
 (3) 45° (4) 30°

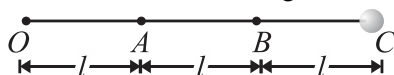
24. A stone projected with a velocity u at an angle θ with the horizontal reaches maximum height H_1 . When it is projected with velocity u at an angle $\left(\frac{x}{2} - \theta\right)$ with the horizontal, it reaches the maximum height H_2 . The relation between the horizontal range R of the projectile, H_1 and H_2 is

- (1) $R = 4\sqrt{H_1 H_2}$ (2) $R = 4(H_1 - H_2)$
 (3) $R = 4(H_1 + H_2)$ (4) $R = \frac{H_1^2}{H_2^2}$

25. A projectile can have the same range R for two angles of projection. If t_1 and t_2 be the times of flights in the two cases, then the product of the two times of flights is

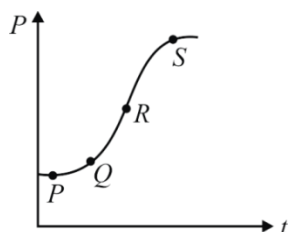
- (1) $t_1 t_2 \propto R^2$
 (2) $t_1 t_2 \propto R$
 (3) $t_1 t_2 \propto \frac{1}{R}$
 (4) $t_1 t_2 \propto \frac{1}{R^2}$

26. Three identical particles are joined together by a thread as shown in figure. All the three particles are moving in a horizontal plane. If the velocity of the outermost particle is v_0 , then the ratio of tensions in the three sections of the string is



- (1) 3 : 5 : 7 (2) 3 : 4 : 5
 (3) 7 : 11 : 6 (4) 3 : 5 : 6

27. The variation of momentum with the time of one of the bodies in a two-body collision is shown in fig. The instantaneous force is maximum corresponding to point:

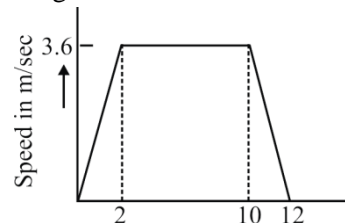


- (1) P (2) Q
 (3) R (4) S

28. When forces F_1, F_2, F_3 are acting on a particle of mass m such that F_2 and F_3 are mutually perpendicular, then the particle remains stationary. If the force F_1 is now removed then the acceleration of the particle is

- (1) F_1/m (2) $F_2 F_3 / m F_3$
 (3) $(F_2 - F_3)/m$ (4) F_2/m

29. A lift is going up. The total mass of the lift and the passenger is 1500 kg. The variation in the speed of the lift is as given in the graph. The tension in the rope pulling the lift at $t = 11^{\text{th}}$ sec will be



- (1) 17400 N (2) 14700 N
 (3) 12000 N (4) Zero

30. A Diwali rocket is ejecting 0.05 kg of gases per second at a velocity of 400 m/s relative to rocket. The accelerating force on the rocket is

- (1) 20 dynes (2) 20 N
 (3) 22 dynes (4) 1000 dynes

31. A lift is moving downwards with an acceleration equal to the acceleration due to gravity. A body of mass m kept on the floor of the lift is pulled horizontally. If the coefficient of friction is μ , then the friction resistance offered by the body is:

- (1) mg (2) μmg
 (3) $2 \mu mg$ (4) Zero

32. The maximum speed that can be achieved without skidding by a car on a circular unbanked road of radius R and coefficient of static friction μ , is

- (1) μRg (2) $Rg\sqrt{\mu}$
 (3) $\mu\sqrt{Rg}$ (4) $\sqrt{\mu Rg}$

33. A block of mass m placed on an inclined plane of angle of inclination θ slides down the plane with constant speed. The coefficient of kinetic friction between block and inclined plane is

- (1) $\sin \theta$ (2) $\cos \theta$
 (3) $\tan \theta$ (4) $\tan^{-1} \theta$

34. A particle describes a horizontal circle in a conical funnel whose inner surface is smooth with speed of 0.5 m/s. What is the height of the plane of circle from vertex of the funnel?

- (1) 0.25 cm (2) 2 cm
 (3) 4 cm (4) 2.5 cm

35. A fireman of mass 60 kg slides down a pole. He is pressing the pole with a force of 600 N. The coefficient of friction between the hands and the pole is 0.5, with what acceleration will the fireman slide down ($g = 10 \text{ m/s}^2$)

- (1) 1 m/s^2 (2) 2.5 m/s^2
(3) 10 m/s^2 (4) 5 m/s^2

SECTION - B (ATTEMPT ANY 10 QUESTIONS)

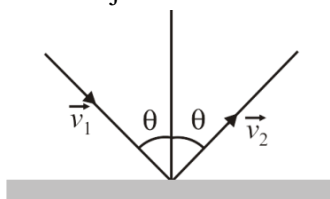
36. The value of 10 joule on a system 100 g, 10 cm, and 30 s as fundamental units is

- (1) 9×10^5 new unit (2) 9×10^9 new unit
(3) 9×10^6 new unit (4) 9×10^3 new unit

37. The sum of magnitudes of two forces acting at a point is 16N. If the resultant force is 8N and its direction is perpendicular to minimum force, then the forces are

- (1) 6 N and 10 N (2) 8 N and 12 N
(3) 4 N and 12 N (4) 2 N and 14 N

38. An object of $m \text{ kg}$ with speed of $v \text{ m/s}$ strikes a wall at an angle θ and rebounds at the same speed and same angle. Find the magnitude of change in the momentum of object will be



- (1) $2 mv \cos \theta$
(2) $2 mv \sin \theta$
(3) 0
(4) $2 mv$

39. A point moves in a straight line so that its displacement x at time t is given by $x^2 = 1 + t^2$. Its acceleration at any time t is:

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

40. A ball is dropped from the top of a building of height 80 m. At same instant another ball is thrown upwards with speed 50 m/s from the bottom of the building. The time at which balls will meet is

- (1) 1.6 s (2) 5 s
(3) 8 s (4) 10 s

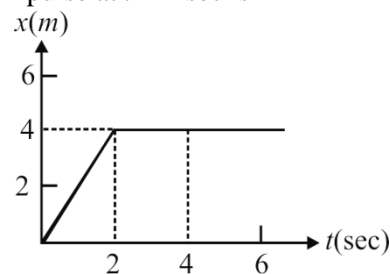
41. Two objects are thrown up at angles of 45° and 60° respectively, with the horizontal. If both objects attain same vertical height, then the ratio of magnitude of velocities with which these are projected is

- (1) $\sqrt{\frac{5}{3}}$ (2) $\sqrt{\frac{3}{5}}$
(3) $\sqrt{\frac{2}{3}}$ (4) $\sqrt{\frac{3}{2}}$

42. A particle is thrown over a triangle from one end of a horizontal base and after grazing the vertex falls on the other end of the base. If α and β be the base angles and θ the angle of projection, the correct relation between $[\theta]$ $[\alpha]$ and $[\beta]$ is

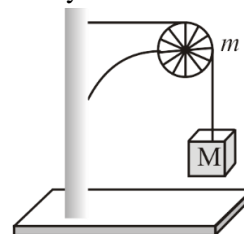
- (1) $\tan \alpha = \tan \theta + \tan \beta$
(2) $\tan \theta = \tan \alpha + \tan \beta$
(3) $\tan \theta = \tan \alpha - \tan \beta$
(4) $\tan \beta = \tan \theta + \tan \alpha$

43. In the figure given below, the position-time graph of a particle of mass 0.1 Kg is shown. The impulse at $t = 2 \text{ sec}$ is



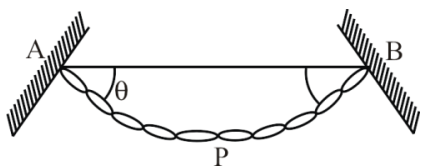
- (1) 0.2 kg msec^{-1} (2) $-0.2 \text{ kg msec}^{-1}$
(3) 0.1 kg msec^{-1} (4) 0.4 kg msec^{-1}

44. A string of negligible mass going over a clamped pulley of mass m supports a block of mass M as shown in the figure. The force on the pulley by the clamp is given by



- (1) $\sqrt{2} Mg$
(2) $\sqrt{2} mg$
(3) $\sqrt{(M+m)^2 + m^2} g$
(4) $\sqrt{(M+m)^2 + M^2} g$

45. A flexible chain of mass m hangs between two fixed points A and B at the same level. The inclination of the chain with the horizontal at the two points of support is θ . The tension at the mid-point of the chain is:

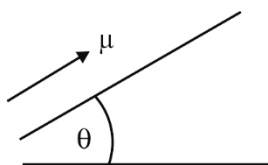


- (1) $\frac{mg}{\tan \theta}$ (2) $\frac{mg}{2 \tan \theta}$
 (3) zero (4) $mg \frac{(\sin \theta + \cos \theta)}{2}$

46. A uniform chain of length L changes partly from a table which is kept in equilibrium by friction. The maximum length that can withstand without slipping is l , then the coefficient of friction between the table and the chain is:

- (1) $\frac{l}{L}$ (2) $\frac{l}{L+l}$
 (3) $\frac{l}{L-l}$ (4) $\frac{L}{L+l}$

47. A block is placed at the bottom of an inclined plane and projected upwards with some initial speed. It slides up the incline, stops after time t_1 , and slides back in a further time t_2 . The angle of inclination of the plane with the horizontal is θ and the coefficient of friction is μ .



- (a) $t_1 > t_2$
 (b) $t_1 < t_2$

- (c) The retardation of the block while moving up is $g(\sin \theta + \mu \cos \theta)$.
 (d) The rate at which block retards while moving down is $g(\sin \theta - \mu \cos \theta)$.
 (1) (a), (b), (c) (2) (b), (c), (d)
 (3) (a), (c), (d) (4) (a), (b), (d)

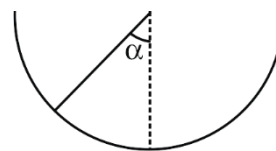
48. A boy is running on the plane road with velocity v with a long hollow tube in his hand. The rain is falling vertically downwards with velocity u . At what angle to the vertical, he must incline the tube so that the rain drops enters it without touching in its side :-

- (1) $\tan^{-1} \frac{v}{u}$ (2) $\sin^{-1} \frac{v}{u}$
 (3) $\tan^{-1} \frac{u}{v}$ (4) $\cos^{-1} \frac{u}{v}$

49. The velocity of a particle increases linearly with time t i.e. $v = kt$, where $k = 2 \text{ m/sec}^2$. The distance covered in first three sec. will be

- (1) 6 m (2) 9 m
 (3) 12 m (4) 18 m

50. An insect crawls up a hemispherical surface very slowly. (see the figure). The coefficient of friction between the insect and the surface is $1/3$. If the line joining the centre of the hemispherical surface to the insect makes an angle α with the vertical, the maximum possible value of α is given by



- (1) $\cot \alpha = 3$ (2) $\tan \alpha = 3$
 (3) $\sec \alpha = 3$ (4) $\text{cosec } \alpha = 3$

CHEMISTRY

SECTION - A

- 51.** Consider the isoelectronic species, Na^+ , Mg^{2+} , F^- and O^{2-} . The correct order of increasing length of their radii is
 (1) $\text{F}^- < \text{O}^{2-} < \text{Mg}^{2+} < \text{Na}^+$
 (2) $\text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-}$
 (3) $\text{O}^{2-} < \text{F}^- < \text{Na}^+ < \text{Mg}^{2+}$
 (4) $\text{O}^{2-} < \text{F}^- < \text{Mg}^{2+} < \text{Na}^+$
- 52.** The elements in which electrons are progressively filled in 4f-orbital are called
 (1) Actinoids (2) Transition elements
 (3) Lanthanoids (4) Halogens
- 53.** The screening effect of d-electron is
 (1) Equal to that of p-electrons
 (2) More than that of p-electrons
 (3) Same as f-electrons
 (4) Less than p-electrons
- 54.** Cause of diagonal relationship is
 (1) Similar electronic configuration of the elements
 (2) Similar e/r ratio of the elements
 (3) Same number of valency electrons in the elements
 (4) Same atomic weights of the elements
- 55.** Which ionization potential (IP) in the following equations involves the greatest amount of energy?
 (1) $\text{Na} \rightarrow \text{Na}^+ + e^-$
 (2) $\text{K}^+ \rightarrow \text{K}^{2+} + e^-$
 (3) $\text{C}^{2+} \rightarrow \text{C}^{3+} + e^-$
 (4) $\text{Ca}^+ \rightarrow \text{Ca}^{2+} + e^-$
- 56.** The successive ionization energy values for an element X are given below
 A. 1st ionization energy = 410 kJ mol⁻¹
 B. 2nd ionization energy = 820 kJ mol⁻¹
 C. 3rd ionization energy = 1100 kJ mol⁻¹
 D. 4th ionization energy = 1500 kJ mol⁻¹
 E. 5th ionization energy = 3200 kJ mol⁻¹
 Find out the number of valence electron for the atom X
 (1) 4 (2) 3
 (3) 5 (4) 2
- 57.** If first orbit energy of He^+ is -54.4 eV, then the second orbit energy will be
 (1) -54.4 eV (2) -13.6 eV
 (3) -27.2 eV (4) +27.2 eV
- 58.** Among Al_2O_3 , BeO , P_2O_3 and SO_2 the correct order of acidic strength is
 (1) $\text{Al}_2\text{O}_3 < \text{BeO} < \text{SO}_2 < \text{P}_2\text{O}_3$
 (2) $\text{BeO} < \text{SO}_2 < \text{Al}_2\text{O}_3 < \text{P}_2\text{O}_3$
 (3) $\text{SO}_2 < \text{P}_2\text{O}_3 < \text{BeO} < \text{Al}_2\text{O}_3$
 (4) $\text{BeO} < \text{Al}_2\text{O}_3 < \text{P}_2\text{O}_3 < \text{SO}_2$
- 59.** The most stable oxidation state exhibited by thallium is
 (1) 0 (2) +1
 (3) +2 (4) +3
- 60.** In which block 106th element belongs
 (1) s-block (2) p-block
 (3) d-block (4) f-block
- 61.** 5 litres of a solution contains 25 gm of CaCO_3 . What is its concentration in ppm (mol. wt. of CaCO_3 is 100)?
 (1) 25 (2) 1
 (3) 5000 (4) 2500
- 62.** Air contains 20% O_2 by volume. How much volume of air will be required for the oxidation of 100 cc of acetylene
 (1) 500 cc (2) 1064 cc
 (3) 212.8 cc (4) 1250 cc
- 63.** The total number of gm-molecules of SO_2Cl_2 in 13.5 g of sulphuryl chloride is
 (1) 0.1 (2) 0.2
 (3) 0.3 (4) 0.4
- 64.** The number of electrons in a mole of hydrogen molecule is
 (1) 6.02×10^{23}
 (2) 12.046×10^{23}
 (3) 3.0115×10^{23}
 (4) Indefinite
- 65.** A 400 mg iron capsule contains 100 mg of ferrous fumarate, $(\text{CHCOO})_2\text{Fe}$. The percentage of iron present in it is approximately
 (1) 33% (2) 25%
 (3) 14% (4) 8%
- 66.** When 100 ml of 1M NaOH solution and 10 ml of 10N H_2SO_4 solution are mixed together, the resulting solution will be
 (1) Alkaline (2) Acidic
 (3) Strongly acidic (4) Neutral
- 67.** Sulphur forms the chlorides S_2Cl_2 and SCl_2 . The equivalent mass of sulphur in SCl_2 is
 (1) 8 g/mol (2) 16 g/mol
 (3) 64.8 g/mol (4) 32 g/mol
- 68.** The law of multiple proportions is illustrated by the two compounds
 (1) Sodium chloride and sodium bromide
 (2) Ordinary water and heavy water
 (3) Caustic soda and caustic potash
 (4) Sulphur dioxide and sulphur trioxide

69. The number of significant figures in 6.02×10^{23} is
 (1) 23 (2) 3
 (3) 4 (4) 26
70. How many ions per molecule are produced in the solution when molar salt is dissolved in excess of water
 (1) 6 (2) 4
 (3) 10 (4) 5
71. The mass of 112 cm^3 of CH_4 gas at STP is
 (1) 0.16 g (2) 0.8 g
 (3) 0.08 g (4) 1.6 g
72. If 10^{21} molecules are removed from 200 mg of CO_2 , then the number of moles of CO_2 left are
 (1) 2.88×10^{-3} (2) 28.8×10^{-3}
 (3) 0.288×10^{-3} (4) 1.68×10^{-2}
73. 20.0 g of a magnesium carbonate sample decomposes on heating to give carbon dioxide and 8.0 g magnesium oxide. What will be the percentage purity of magnesium carbonate in the sample?
 (1) 75 (2) 96
 (3) 60 (4) 84
74. Which of the following represents Schrodinger equations?
 (1) $\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2} \right) \psi + \frac{8\pi^2 m}{h^2} [E - V] \psi = 0$
 (2) $\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2} \right) \psi - \frac{8\pi^2 m}{h^2} [E - V] \psi = 0$
 (3) $\left(\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2} \right) \psi + \frac{8\pi^2 m}{h^2} [E + V] \psi = 0$
 (4) All of them
75. Which of the following does not represent the mathematical expression for the Heisenberg uncertainty principle?
 (1) $\Delta x \cdot \Delta p \geq h/(4\pi)$ (2) $\Delta x \cdot \Delta v \geq h/(4\pi m)$
 (3) $\Delta E \cdot \Delta t \geq h/(4\pi)$ (4) $\Delta E \cdot \Delta x \geq h/(4\pi)$
76. A stream of electrons from a heated filament was passed between two charged plates kept at a potential difference V volt. If e and m are charge and mass of an electron respectively, then the value of h/λ (where λ is wavelength associated with electron wave) is given by
 (1) $2meV$ (2) \sqrt{meV}
 (3) $\sqrt{2meV}$ (4) meV
77. In photoelectric effect, the kinetic energy of photoelectrons increases linearly with the
 (1) Wavelength of incident light
 (2) Frequency of incident light
 (3) Velocity of incident light
 (4) Atomic mass of an element
78. According to Bohr's principle, the relation between principle quantum number (n) and radius of orbit is
 (1) $r \propto n$ (2) $r \propto n^2$
 (3) $r \propto \frac{1}{n}$ (4) $r \propto \frac{1}{n^2}$
79. In hydrogen spectrum the different lines of Lyman series are present in
 (1) UV field
 (2) IR field
 (3) Visible field
 (4) Far IR field
80. If the 1st ionization energy of H atom is 13.6 eV, then the 2nd ionization energy of He atoms is
 (1) 27.2 eV (2) 40.8 eV
 (3) 54.4 eV (4) 108.8 eV
81. Rutherford's experiment on scattering of particles showed for the first time that the atom has
 (1) Electrons (2) Protons
 (3) Nucleus (4) Neutrons
82. The number of electrons in one molecule of CO_2 are
 (1) 22 (2) 44
 (3) 66 (4) 88
83. Number of angular nodes for 4d orbital is.....
 (1) 4 (2) 3
 (3) 2 (4) 1
84. Total number of orbitals associated with third shell will be.....
 (1) 2 (2) 4
 (3) 9 (4) 3
85. An object absorbs a photon of wavelength λ and re-emits the same energy into two photons of wavelengths λ_1 and λ_2 respectively. The wavelength λ is related with λ_1 and λ_2 as:
 (1) $\lambda = \frac{\lambda_1 + \lambda_2}{\lambda_1 \lambda_2}$
 (2) $\lambda = \frac{\lambda_1 \lambda_2}{\lambda_1 + \lambda_2}$
 (3) $\lambda = \frac{\lambda_1^2 \lambda_2^2}{\lambda_1 + \lambda_2}$
 (4) $\lambda = \frac{\lambda_1 \lambda_2}{(\lambda_1 + \lambda_2)^2}$

SECTION - B (ATTEMPT ANY 10 QUESTIONS)

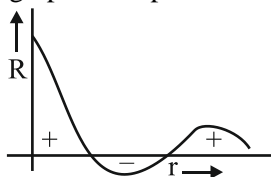
86. In a 3d subshell, all the five orbitals are degenerate. What does it mean?
 (1) All the orbitals have the same orientation
 (2) All the orbitals have the same shape
 (3) All the orbitals have the same energy
 (4) All the orbitals are unoccupied

87. Which of the following sets of quantum numbers describes the electron which is removed most easily from a potassium atom in its ground state?

- (1) $n = 3, l = 1, m_l = 1, m_s = -\frac{1}{2}$
- (2) $n = 2, l = 1, m_l = 0, m_s = -\frac{1}{2}$
- (3) $n = 4, l = 0, m_l = 1, m_s = +\frac{1}{2}$
- (4) $n = 4, l = 0, m_l = 0, m_s = +\frac{1}{2}$

88. Wave function of an orbital is plotted against the distance from nucleus. The graphical representation is of:

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



89. How do the energy gaps between successive electron energy levels in an atom vary from low to high n values?

- (1) All energy gaps are the same
- (2) The energy gap decreases as n increases
- (3) The energy gap increases as n increases
- (4) The energy gap changes unpredictably as n increases

90. If an electron is transferred from A to B forming A^+ and B^- . The above reaction is possible when (EN is electron-negativity)

- (1) EN of A > EN of B
- (2) EN of A = EN of B
- (3) EN of B > EN of A
- (4) None of the above

91. The correct statement regarding BOH is (χ is electron-negativity)

- (1) If $\chi_O - \chi_B > \chi_O - \chi_H$, BOH will be basic
- (2) If $\chi_O - \chi_B > \chi_O - \chi_H$, BOH will be acidic
- (3) If $\chi_O - \chi_B = \chi_O - \chi_H$, BOH will be acidic
- (4) If $\chi_O - \chi_B < \chi_O - \chi_H$, BOH will be basic

92. The first ionization potentials of Na, Mg, Al and Si are in the order

- (1) $Na < Al < Mg < Si$
- (2) $Na > Mg > Al > Si$
- (3) $Na < Mg < Al > Si$
- (4) $Mg > Na > Al < Si$

93. A gaseous mixture of H_2 and CO_2 gas contains 66 mass % of CO_2 . The vapour density of the mixture is:

- (1) 6.10
- (2) 5.40
- (3) 2.56
- (4) 10.80

94. Concentrated HNO_3 is 63% HNO_3 by mass and has a density of 1.4 g/mL. How many millilitres of this solution are required to prepare 250 mL of a 1.20M HNO_3 solution?

- (1) 18.0
- (2) 21.42
- (3) 20.0
- (4) 14.21

95. An element A is tetravalent and another element B is divalent. The formula of the compound formed from these elements will be:

- (1) A_2B
- (2) AB
- (3) AB_2
- (4) A_2B_2

96. One of the following combinations illustrate the law of reciprocal proportions:

- (1) N_2O_3, N_2O_4, N_2O_5
- (2) NaCl, NaBr, NaI
- (3) CS_2, CO_2, SO_2
- (4) PH_3, P_2O_3, P_2O_5

97. The relation between molarity (M) and molality (m) is given by: (d = density of solution (g/mL), M_w = molecular weight of solute)

- (1) $M = \frac{md \times 1000}{(1000 + nM_w)}$
- (2) $m = \frac{Md \times 1000}{(1000 + nM_w)}$
- (3) $M = \frac{d \times 1000}{(1000 + M_w)}$
- (4) $m = \frac{d \times 1000}{(1000 + M_w)}$

98. What is the charge of 96 amu of S^{2-} ?

- (1) 2C
- (2) $2.2 \times 10^{-19}C$
- (3) $9.6 \times 10^{-19}C$
- (4) 6C

99. 3.011×10^{22} atoms of an element weight 1.15 gm. The atomic mass of the element is:

- (1) 10 amu
- (2) 2.3 amu
- (3) 35.5 amu
- (4) 23 amu

100. A sudden large jump between the values of second and third ionization energies of an element would be associated with the electronic configuration

- (1) $1s^2, 2s^2 2p^6, 3s^1$
- (2) $1s^2, 2s^2 2p^6, 3s^2 3p^1$
- (3) $1s^2, 2s^2 2p^6, 3s^2 3p^6$
- (4) $1s^2, 2s^2 2p^6, 3s$

BOTANY

SECTION - A

- 101.** Plants with haplontic life cycle:
(1) Fucus
(2) Ectocarpus
(3) Spirogyra
(4) Kelp
- 102.** Chlamydomonas belongs to kingdom of type of organism in five kingdom classification:
(1) Unicellular Prokaryotes
(2) Multicellular plants
(3) Multicellular fungi
(4) Unicellular Eukaryotes
- 103.** Mark the correctly matched-
(1) Family of cat – Felidae
(2) Botanical Garden – Dead plant specimen
(3) Herbarium – Storage of live plant specimen
(4) Museum – Live animal specimen
- 104.** Albugo belong to Class of fungi having hyphae:
(1) Septate
(2) Aseptate
(3) Sexual reproduction absent
(4) Septate and branched
- 105.** Which of the following have RNA genome:
(1) Bacteria (2) TMV
(3) Prions (4) Bacteriophage
- 106.** Lateral unequal Flagella is Feature of:
(1) Rhodophyceae (2) Phaeophyceae
(3) Chlorophyceae (4) Angiosperm
- 107.** Which of the following example have pigments like higher plants
(1) Euglena (2) Amoeba
(3) Slime mould (4) Paramecium
- 108.** Cat and Dog have common taxonomic category which is:
(1) Genus
(2) Family
(3) Order
(4) Species
- 109.** Methanogen differ from Eubacteria in
(1) Ribosome
(2) Cell wall
(3) Presence of plastids
(4) Presence of nucleoid
- 110.** Place where live plant specimen is kept for taxonomic studies are
(1) Zoological park
(2) Key
(3) Botanical Garden
(4) Herbarium
- 111.** Wheat and Rice belong to common Taxonomic group is
(1) Solanum (2) Poaceae
(3) Sapindales (4) Angiospermae
- 112.** Floridean starch is storage present in
(1) Gonolaulax (2) Volvox
(3) Gracilaria (4) Ulothrix
- 113.** Mark the incorrect statement:
(1) Mycoplasma completely lack cell wall
(2) Fast multiplication of some red dinoflagellates can cause Red tides
(3) Euglenoids found in Running marine water
(4) Spores of slime mould disperse through air currents
- 114.** Nutrition Present in Fungi is
(1) Parasitic on Plants
(2) Parasitic on plants, Saprophytic
(3) Parasitic on plants and animals, Saprophytic and Symbiotic
(4) Saprophytic, Symbiotic and Photosynthetic
- 115.** Which are not photoautotrophic bacteria-
(1) nostoc (2) green sulphur bacteria
(3) Anabaena (4) Nitrosomonas
- 116.** Dominant sporophyte stage is present in..... Plant life cycle
(1) Fern (2) Gelidium
(3) Moss (4) Liverworts
- 117.** Feature which is common in both Angiosperm and gymnosperm is:
(1) Fruit (2) Haploid endosperm
(3) Presence of Seed (4) Flower
- 118.** Which group of fungi lack asexual spores:
(1) phycmycetes
(2) ascomycetes
(3) basidiomycetes
(4) deuteromycetes
- 119.** Dikaryon stage is not visible in Sexual reproduction of:
(1) Neurospora (2) Claviceps
(3) Ustilago (4) Albugo
- 120.** Scientist who Crystallized virus was
(1) Ivanovsky
(2) Beijerinck
(3) Pasteur
(4) Stanley

- 121.** In lichen shelter provided by-
 (1) phycobiont
 (2) mycobiont
 (3) both phycobiont and mycobiont
 (4) cyanobacteria
- 122.** Artificial System of classification proposed by Linnaeus is based on:
 (1) structure of ovary
 (2) morphology of flowers
 (3) androceium structure
 (4) phylogenetic feature
- 123.** Cell wall is absent in
 (1) Cyanobacteria (2) Methanogen
 (3) P. P. L. O. (4) Diatom
- 124.** Budding in Protonema is method of asexual reproduction in:
 (1) Marchantia (2) Sphagnum
 (3) Pteris (4) Pinus
- 125.** Correct biological name of House fly is:
 (1) Musca indica
 (2) Musca Domestica
 (3) Musca domestica
 (4) Apis Domestica
- 126.** Each statement in Taxonomic key is known as
 (1) Couplet (2) Lead
 (3) Manual (4) Flora
- 127.** National botanical Research institute is located at
 (1) Lucknow (2) Delhi
 (3) Kanpur (4) Howrah
- 128.** Ribosomes of Nostoc are of.....type
 (1) 50 S (2) 60 S
 (3) 70 S (4) 80 S
- 129.** First zygotic organisms of R.H Whittaker classification belong to
 (1) Fungi (2) Algae
 (3) Monera (4) Protista
- 130.** Some primitive mode of DNA transfer occurs in group of organisms as method of Sexual reproduction –
 (1) Bacteria (2) Protista
 (3) Plantae (4) Animalia
- 131.** Moss differs from Pteridophyte in presence of-
 (1) Root
 (2) Motile gametes
 (3) Archegonia
 (4) Dominant gametophyte
- 132.** In Gymnosperms, the ovule is naked because-
 (1) Ovary wall is absent
 (2) Integuments are absent
 (3) Flower is absent
 (4) Nucellus is absent
- 133.** Life cycle of Salvinia and Pinus Respectively is–
 (1) Haplodiplontic and diplontic
 (2) Diplontic and Haplontic
 (3) Diplontic and Diplontic
 (4) Haplodiplontic and haplontic
- 134.** Moss used for transport of living material and also used as fuel is –
 (1) Funaria (2) Sphagnum
 (3) Marchantia (4) Lycopodium
- 135.** Green algae which show Oogamous type of reproduction is –
 (1) Volvox (2) Spirogyra
 (3) Chlamydomonas (4) Gelidium
- SECTION - B (ATTEMPT ANY 10 QUESTIONS)**
- 136.** Which of the following have Fucoxanthin as pigment
 (1) volvox (2) kelp
 (3) porphyra (4) pinus
- 137.** Which of the following taxonomic category to which Datura belong
 (1) Mangifera (2) Mammalia
 (3) Diptera (4) Solanaceae
- 138.** Mark the correctly matched
 (1) Dog – Canis
 (2) Leopard – felis
 (3) Potato – fabaceae
 (4) Wheat – dicotyledonae
- 139.** In..... type of taxonomy in phylogenetic system each character is given equal weightage.
 (1) Karyotaxonomy (2) Numerical taxonomy
 (3) Cytotaxonomy (4) Chemotaxonomy
- 140.** Which of the following is Single strand RNA virus-
 (1) bacteriophage ϕ X 174
 (2) bacteriophage lambda
 (3) T4 phage
 (4) TMV
- 141.** Marine protist which is responsible for producing toxins in sea:
 (1) Slime mould (2) Dinoflagellates
 (3) Diatom (4) Euglenoids
- 142.** Asexual spore produced in Ascomycetes are-
 (1) Exogenously (2) Motile
 (3) Zoospore (4) Endogenously
- 143.** Scientist who gave statement “contagium vivum fluidum” was:
 (1) Stanley
 (2) Beijerinck
 (3) Ivanowsky
 (4) Diener





- 144.** Which is not common in pteridophyte and gymnosperm:
(1) Vascular bundle present
(2) Dominant sporophyte
(3) Diploid plant
(4) Seed habit
- 145.** Most of Pteridophytes in plant kingdom are:
(1) Diplontic (2) Homosporous
(3) Haplontic (4) Heterosporous
- 146.** Dryopteris belong to group:
(1) sphenopsida (2) lycopsida
(3) Pteropsida (4) psilopsida
- 147.** Consider the following statement-
(A) Dependent gametophyte present in Gymnosperm
(B) Fucus is Diplontic algae
Mark the correct statement:
(1) only A (2) only B
(3) both A and B (4) neither A nor B
- 148.** From the following example which of the following use for ex-situ conservation-
(1) Botanical garden
(2) Museum
(3) Flora
(4) Monograph
- 149.** Term Mangifera and Anacardiaceae is respectively:
(1) Order and Genus
(2) Division and Family
(3) Genus and family
(4) division and sub family
- 150.** Which of the following is not archaeobacteria-
(1) methanomonas
(2) thermoacidophile
(3) Nitrobacter
(4) Halophile

ZOOLOGY

SECTION - A

- 151.** Which of the following is not a characteristic of sponges?
- (1) They are the most primitive multicellular animals and have cellular level of organisation
 - (2) They have collar cells which line the spongocoel
 - (3) Their protein skeleton is composed of spicules
 - (4) Digestion is intracellular
- 152.** Which of the following is an example of an organism with medusa body form?
- (1) A hydra
 - (2) A coral
 - (3) An anemone
 - (4) A jellyfish
- 153.** Which trait easily identifies an annelid?
- (1) Body cavity
 - (2) Cephalisation
 - (3) Nephridia
 - (4) Segmentation
- 154.** What is true about the deuterostomes?
- (a) Blastopore develops into mouth, and a second opening forms at the other end of archenteron, forms anus
 - (b) Mesoderm splits to form coelom
 - (c) Cleavage is indeterminate
 - (d) The process of coelom formation is enterocoelous.
 - (e) Most of them undergo radial cleavage
- (1) (a), (b) & (c)
 - (2) (c) & (d)
 - (3) (b), (c) & (d)
 - (4) (c), (d) & (e)
- 155.** Which one of the following set of animals belongs to the same taxonomic group?
- (1) Shipworm, tongue worm, pinworm
 - (2) Silverfish, crayfish, cuttle fish
 - (3) Sea star, sea lily, brittle star
 - (4) Sea hare, sea pen, seafur
- 156.** From the list of animals in the box, how many are bipedal tetrapods?
- | |
|---|
| Kangaroo, Parrot, Krait, Toad, Pigeon, Human, Whale |
|---|
- (1) Six
 - (2) Five
 - (3) Four
 - (4) Three
- 157.** Choose the group of animals which show parental care
- (1) *Hippocampus*, *Alytes*, *Columba*
 - (2) *Alytes*, *Pipa*, *Chelone*
 - (3) *Pavo*, *Pteropus*
 - (4) *Pavo*, *Pteropus*, *Hemidactylus*
- 158.** Adult jawed vertebrates possess all of the following features, except
- (1) Ventral myogenic heart
 - (2) Kidneys for osmoregulation
 - (3) Paired fins or limbs
 - (4) Persistent notochord
- 159.** The characteristic not applicable to *Trygon* (sting ray) is
- (1) Dorso-ventrally flattened body
 - (2) Dorsal fin on the tail modified as sting
 - (3) Pectoral fin modified as clasper in males
 - (4) Gill slits are on the ventral surface
- 160.** Choose the **incorrect** match
- (1) *Ascidia* - Sessile chordate
 - (2) *Pterophyllum* - Angel fish
 - (3) *Torpedo* - Ctenoid scales
 - (4) *Hyla* - Tree frog
- 161.** Pelvic fins are modified into claspers meant for copulation in
- (1) *Pristis*
 - (2) *Carcharodon*
 - (3) *Scoliodon*
 - (4) All of these
- 162.** Choose the **incorrect** pair
- (1) Bats & whales - Echo location
 - (2) *Salmon* & *Hilsa* - Anadromous migration
 - (3) *Hippocampus* & *Pipa* - Parental care by males
 - (4) Frog & *Hyla* - External fertilisation
- 163.** What is a common between *Columba* (Pigeon) and *Struthio* (Ostrich)?
- (1) Body covered with feathers
 - (2) Presence of preen gland at the base of the tail
 - (3) Feet adapted for perching
 - (4) Sternum with keel

164. The following are figures of representative reptiles with their characteristics. Choose the option which is **not** correct?

- (1)  - It is tree lizard, with prehensile tail and is viviparous
- (2)  - It is a crocodile, having four chambered heart
- (3)  - It is tortoise with dorsal carapace and ventral plastron
- (4)  - It is poisonous land snake with neurotoxic venom

165. The outermost covering of *Ascidia* is

- (1) Mantle (2) Tunic
(3) Telson (4) Skin

166. Which of the following protochordate retains notochord even in adult?

- (1) *Branchiostoma* (2) *Herdmania*
(3) *Saccoglossus* (4) *Myxine*

167. Choose of option in which all animals are oviparous and endotherms

- (1) *Aptenodytes*, *Testudo*, *Psittacula*
(2) *Ornithorhynchus*, *Chelone*, *Pavo*
(3) *Ornithorhynchus*, *Neophron*, *Struthio*
(4) *Pavo*, *Corvus*, *Clarias*

168. Identify the connective tissue from the options that is pliable but resist compression.

- (1) Bone (2) Cartilage
(3) Muscles (4) Blood

169. The activity of which of the cells increase the blood calcium level?

- (1) Chondroblasts (2) Osteoblasts
(3) Osteoclasts (4) Osteocytes

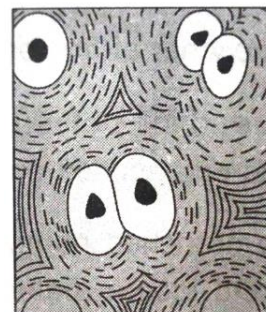
170. Malpighian tubules and _____ help in excretion in case of female cockroach.

- (1) Fat body (2) Ureose gland
(3) Labial palps (4) Both (1) & (2)

171. The female reproductive system of cockroach consists of two large ovaries lying

- (1) Dorsally in the 2nd – 6th abdominal segments
(2) Laterally in the 2nd – 8th body segments
(3) Dorsally in the 2nd – 6th body segments
(4) Laterally in the 2nd – 6th abdominal segments

172. Which of the following structure is absent in given tissue?



- (1) Lacuna (2) Matrix
(3) Lamellae (4) Collagen fibers

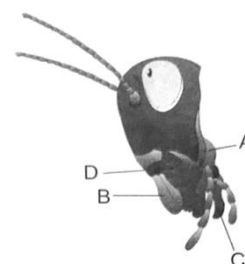
173. In female cockroach, each ootheca contains

- (1) 9-10 eggs in one row
(2) 14-16 eggs in two rows
(3) 9-10 eggs in two rows
(4) 14-16 eggs in one row

174. Among all the given tissues like tendon, blood, bone, cartilage, lymph, ligament, muscle, how many belong to the category of specialised connective tissue?

- (1) Three (2) Four
(3) Five (4) Six

175. Given below is a diagrammatic representation of parts of head region of cockroach.



Which of the following mouth part helps in grinding of food?

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

176. In a female cockroach, all the given structures are present in a brood or genital pouch, **except**

- (1) Female gonopore
(2) Spermathecal pores
(3) Oviduct
(4) Collateral glands

177. Read the following statements w.r.t. cockroach

- (a) Hypopharynx acts as tongue
- (b) Antennae have sensory receptors that helps in monitoring the environment
- (c) Tegmina are transparent, membranous wing and are used in flight
- (d) Head is formed by the fusion of six segments.

How many of the given statement/s is/are **correct**?

- (1) One
- (2) Two
- (3) Three
- (4) Four

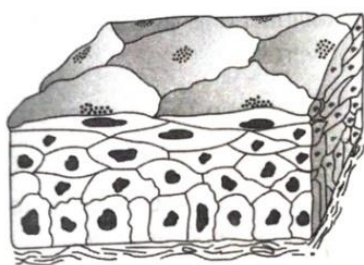
178. Read the following statements

- (a) In epithelial tissue, cells are compactly packed with little intercellular material
- (b) Epithelial tissue is highly vascular so has high regeneration capacity.
- (c) In ciliated epithelium, the function of cilia is to move particles or mucus in any direction over the epithelium.
- (d) Connective tissues are most abundant and widely distributed in the body of complex animals.

Choose the correct option which includes incorrect statement

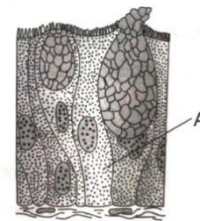
- (1) (a) & (b) only
- (2) (b) & (c) only
- (3) (a), (b) & (c) only
- (4) (b) & (d) only

179. Mark the **incorrect** statement regarding tissue given below



- (1) Provides protection against chemical and mechanical stresses
- (2) Covers the dry surface of the skin
- (3) Vital role in secretion and absorption
- (4) Covers the moist surface of buccal cavity

180. Identify the correct option w.r.t. the secretion of given gland A in the diagram below



- (1) Saliva
- (2) Ear wax
- (3) Mucus
- (4) Oil

181. Brush border epithelium is found in -

- (1) PCT and intestine
- (2) DCT and stomach
- (3) Gall bladder and stomach
- (4) Lung alveoli

182. Match the columns I and II, and choose the correct combination from the option given

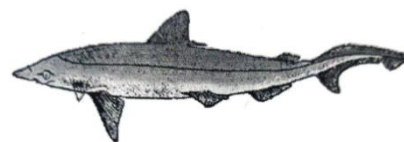
	Column – I		Column – II
a.	Body cavity is lined by mesoderm	(i)	
b.	Body cavity is absent	(ii)	
c.	Body cavity is not lined by mesoderm, instead, the mesoderm is present as scattered pouches in between ectoderm and endoderm	(iii)	

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

183. Ligament is a-

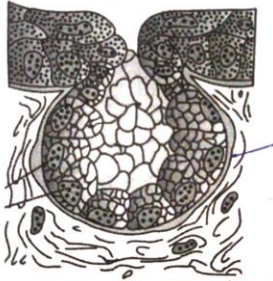
- (1) Modified white fibrous connective tissue
- (2) Modified yellow fibrous connective tissue
- (3) Areolar tissue
- (4) Dense irregular connective tissue

184. How many statements are true for the given figure?



- (a) Notochord is persistent throughout life
 - (b) Gill slits are separate and without operculum
 - (c) In males, pelvic fins bear claspers
 - (d) They are viviparous
- (1) Four
 - (2) Three
 - (3) Two
 - (4) One

185. Given below is diagrammatic representation of modified epithelial tissue



Choose the **incorrect** option w.r.t. the secretion of the given tissue

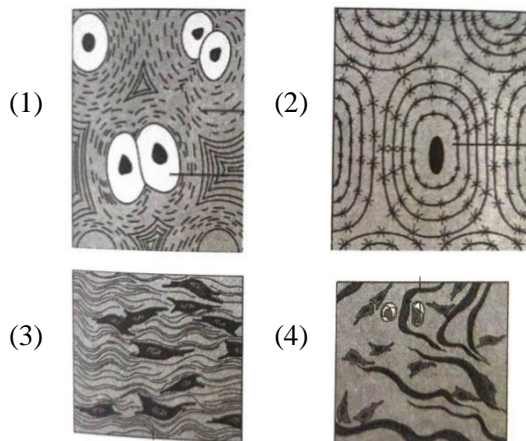
- (1) Saliva
- (2) Insulin
- (3) Ear wax
- (4) Milk

SECTION - B (ATTEMPT ANY 10 QUESTIONS)

186. Read the following statements

- (a) Ground substance is hard and non-pliable
- (b) Rich in collagen fibres and calcium salts
- (c) Main tissue that provides structural frame to the body.

Identify the tissue on the basis of given characteristics and choose the correct option from the given diagrams



187. Find out the **incorrect** one related to compound epithelium

- (1) Dry surface of skin
- (2) Salivary gland duct
- (3) Pancreatic duct
- (4) PCT

188. Find the **incorrect** match

- (1) Osteoblast - Bone forming cells
- (2) Fibroblast - Cells secrete the matrix

- (3) Chondroblast - Cells dissolve bone matrix
- (4) Mast cell - Non-motile, release chemical that promote inflammation

189. The type of tissue which is widely distributed throughout the body, forms packing between glands and attaches the skin to underlying tissues is

- (1) Adipose tissue
- (2) Areolar connective tissue
- (3) Dense regular collagenous connective tissue
- (4) Dense regular elastic connective tissue

190. Epithelial tissue

- (1) Is avascular
- (2) Has a free surface
- (3) Provides a covering or a lining for some part of the body
- (4) All of these

191. Mouth, throat, sweat gland duct, salivary gland duct, mammary gland duct, urinary bladder, ureters, renal pelvis, how many of them contain transitional epithelium?

- (1) 8
- (2) 6
- (3) 3
- (4) 2

192. Which cell junction perform cementing to keep neighbouring cells together?

- (1) Tight junction
- (2) Adhering junctions
- (3) Gap junctions
- (4) Inter digitation

193. Which of the following tissues is/are **non-vascular**?

- (a) Skeletal muscles
- (b) Dense reticular tissue
- (c) Cartilage
- (d) Epithelium
- (e) Tendons

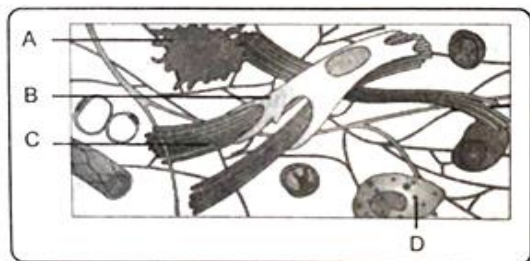
- (1) (c) and (d) only
- (2) (a), (c) and (d)
- (3) (c), (d) and (e)
- (4) (b), (c) and (d)

194. The epithelium which protects against mechanical and osmotic shocks is present in all, **except**:

- (1) Vagina
- (2) Larger ducts of pancreas

- (3) Buccal cavity
- (4) Tubular parts of nephron

195. Given below is the diagrammatic sketch of a certain type of connective tissue. identify the parts labelled A, B, C and D and select the right option about them:



	Part-A	Part-B	Part-C	Part-D
(1)	Micro phage	Collagen fibres	Fibroblast	Mast cell
(2)	Mast cell	Collage fibres	Fibroblast	Micro phage
(3)	Macro phage	Fibroblast	Collagen fibres	Mast cell
(4)	Mast cell	Micro phage	Air bladder	Collagen fibres

196. Given below are some structures present in body

- (a) Nasal septum
- (b) Tip nose
- (c) Intervertebral disc
- (d) Ear auricle
- (e) Epiglottis
- (f) Eustachian tube
- (g) Between ribs and sternum
- (h) Thyroid cartilage of larynx

How many of the given structures have elastic cartilage?

- (1) Four
- (2) Three
- (3) Six
- (4) Five

197. The body tissue which exerts the greatest control over the body's responsiveness to changing conditions consists

- (1) Neuron – An excitable cell
- (2) Neuroglia – Mesodermal cells which support neuron
- (3) Oligodendrocyte – Form myelin sheath in PNS
- (4) All of these

198. Mark the odd one w.r.t. wings of cockroach

- (1) Mesothoracic wings
- (2) Hind wings
- (3) Tegmina
- (4) Elytra

199. All of the following structures help in excretion in cockroach, **except**

- (1) Nephrocyte
- (2) Collateral gland
- (3) Ureose gland
- (4) Malpighian tubule

200. In female cockroach, which of the following structure is boat shaped?

- (1) 7th Tergite
- (2) 7th Sternite
- (3) 7th Pleurite
- (4) All of the above