Sky Tutorials
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IIT-JEE | NEET | Foundation

NEET

Time: 200 Minute **M.M. 720**

ALL INDIA SKY TEST SERIES

Samarth Batch – Neet

Date : 05/11/2023

SYLLABUS

PHYSICS	CHEMISTRY	BOTANY	ZOOLOGY
Previous + W.P.E.	All Previous Chapter	Previous + Anatomy of Flowering Plants	Animal Kingdom

Please read the instructions carefully. You are allotted **5** minutes specifically for this purpose.

INSTRUCTIONS:

1. This Question paper is divided in to four parts physics, chemistry, botany, zoology and each part is further divided into two sections.
   Section –A contains 35 Questions Section B contains 15 questions. Please ensure that the Questions paper you have received contains **ALL THE QUESTIONS** in each Part.
2. **In Section A all the 35 Questions are compulsory and in Section B Contain 15 Question, out of these 15 Questions**, candidates can choose to attempt any 10 Questions. Each Question has four choices (a), (b), (c), (d) out of which **only one is correct & Carry 4 marks each 1 mark** will be deducted for each wrong answer.

GENERAL INSTRUCTION

1. Use only **blue/black pen (avoid gel pen)** for darkening the bubble.
2. Indicate the correct answer for each question by filling appropriate bubble in your **OMR** answer sheet.
3. The answer sheet will be checked through computer hence, the answer of the question must be marked by –shading the circles against the question by dark **blue/black pen**
4. Blank papers, Clipboards, Log tables, Slide Rule, Calculator, Cellular Phones Papers and Electronic Gadgets in any form are **not** allowed to be carried inside the examination hall.

Name of the candidate:_____

Signature of the candidate: _____**Signature of the invigilator:**_____

PHYSICS

SECTION – A

1. The displacement-time graph for two particles *A* and *B* are straight lines inclined at angles of 30^o and 60^o with the time axis. The ratio of velocities of $V_A : V_B$ is

(a) $1:2$ (b) $1:\sqrt{3}$

(c) $\sqrt{3}:1$ (d) $1:3$

2. A particle experiences a constant acceleration for 20 sec after starting from rest. If it travels a distance S_1 in the first 10 sec and a distance S_2 in the next 10 sec, then

(a) $S_1 = S_2$ (b) $S_1 = S_2/3$

(c) $S_1 = S_2/2$ (d) $S_1 = S_2/4$

3. A 120 *m* long train is moving in a direction with speed 20 *m/s*. A train *B* moving with 30 *m/s* in the opposite direction and 130 *m* long crosses the first train in a time

(a) 6s (b) 36 *s*

(c)38 *s* (d) None of these

4. An object is projected upwards with a velocity of $100\,m/s$. It will strike the ground after (approximately)

(a) 10 sec (b) 20 sec

(c) 15 sec (d) 5 sec

5. The angular speed of a fly wheel making 120 *revolutions/minute* is

(a) 2π rad/s (b) $4\pi^2$ rad/s

(c) π rad/s (d) 4π rad/s

6. A car when passes through a convex bridge exerts a force on it which is equal to

(a) $Mg + \frac{Mv^2}{r}$ (b) $\frac{Mv^2}{r}$

(c) Mg (d) None of these

7. In uniform circular motion, the velocity vector and acceleration vector are

(a) Perpendicular to each other

(b) Same direction

(c) Opposite direction

(d) Not related to each other

8. An aeroplane flying 490 *m* above ground level at 100 *m/s*, releases a block. How far on ground will it strike

(a) 0.1 *km* (b) 1 *km*

(c) 2 *km* (d) None

9. If a bullet of mass 5 *gm* moving with velocity 100 *m/sec*, penetrates the wooden block upto 6 *cm*. Then the average force imposed by the bullet on the block is

(a) 8300 *N* (b) 417 *N*

(c) 830 *N* (d) Zero

10. A man is at rest in the middle of a pond on perfectly smooth ice. He can get himself to the shore by making use of Newton's

(a) First law (b) Second law

(c) Third law (d) All the laws

11. A uniform rope of length *l* lies on a table. If the coefficient of friction is μ, then the maximum length l_1 of the part of this rope which can overhang from the edge of the table without sliding down is

(a) $\frac{l}{\mu}$ (b) $\frac{l}{\mu+1}$

(c) $\frac{\mu l}{1+\mu}$ (d) $\frac{\mu l}{\mu-1}$

12. On the horizontal surface of a truck (μ = 0.6), a block of mass 1 *kg* is placed. If the truck is accelerating at the rate of 5*m/sec*^{2} then frictional force on the block will be

(a) 5 *N* (b) 6 *N* (c)5.88 *N* (d) 8 *N*

13. A body of mass 5*kg* rests on a rough horizontal surface of coefficient of friction 0.2. The body is pulled through a distance of 10*m* by a horizontal force of 25 *N*. The kinetic energy acquired by it is (g = 10 *ms*^{2})

(a) 330 *J* (b) 150 *J* (c) 100 *J* (d) 50 *J*

14. A cylinder of 10 *kg* is sliding in a plane with an initial velocity of 10 *m/s*. If the coefficient of friction between the surface and cylinder is 0.5 then before stopping, it will cover. $(g = 10\,m/s^2)$

(a) 2.5 *m* (b) 5 *m* (c) 7.5 *m* (d) 10 *m*

15. When a body is placed on a rough plane inclined at an angle θ to the horizontal, its acceleration is

(a) $g(\sin\theta - \cos\theta)$

(b) $g(\sin\theta - \mu\cos\theta)$

(c) $g(\mu\sin\theta 1 - \cos\theta)$

(d) $g\mu(\sin\theta - \cos\theta)$

16. A given object takes n times as much time to slide down a 45° rough incline as it takes to slide down a perfectly smooth 45° incline. The coefficient of kinetic friction between the object and the incline is given by

(a) $\left(1-\frac{1}{n^2}\right)$ (b) $\frac{1}{1-n^2}$

(c) $\sqrt{\left(1-\frac{1}{n^2}\right)}$ (d) $\sqrt{\frac{1}{1-n^2}}$

17. A block is kept on an inclined plane of inclination θ of length l. The velocity of particle at the bottom of inclined is (the coefficient of friction is μ)

(a) $\sqrt{2gl(\mu\cos\theta-\sin\theta)}$

(b) $\sqrt{2gl(\sin\theta-\mu\cos\theta)}$

(c) $\sqrt{2gl(\sin\theta+\mu\cos\theta)}$

(d) $\sqrt{2gl(\cos\theta+\mu\sin\theta)}$

18. A body of mass M is kept on a rough horizontal surface (friction coefficient μ). A person is trying to pull the body by applying a horizontal force but the body is not moving. The force by the surface on the body is F, where

(a) $F=Mg$

(b) $F=\mu Mgf$

(c) $Mg\le F\le Mg\sqrt{1+\mu^2}$

(d) $Mg\ge F\ge Mg\sqrt{1+\mu^2}$

19. A body of mass m is moving in a circle of radius r with a constant speed v. The force on the body is $\frac{mv^2}{r}$ and is directed towards the centre. What is the work done by this force in moving the body over half the circumference of the circle

(a) $\frac{mv^2}{\pi r^2}$ (b) Zero

(c) $\frac{mv^2}{r^2}$ (d) $\frac{\pi r^2}{mv^2}$

20. A force acts on a 30 gm particle in such a way that the position of the particle as a function of time is given by $x=3t-4t^2+t^3$, where x is in *metres* and t is in seconds. The work done during the first 4 seconds is

(a) 5.28 J (b) 450 mJ

(c) 490 mJ (d) 530 mJ

21. A force of 5 N acts on a 15 kg body initially at rest. The work done by the force during the first second of motion of the body is

(a) 5 J (b) $\frac{5}{6}$J

(c) 6 J (d) 75J

22. A body of mass 6kg is under a force which causes displacement in it given by $S=\frac{t^2}{4}$ *metres* where t is time. The work done by the force in 2 seconds is

(a) 12 J (b) 9 J

(c) 6 J (d) 3 J

23. A particle moves under the effect of a force $F = Cx$ from $x = 0$ to $x=x_1$. The work done in the process is

(a) Cx_1^2 (b) $\frac{1}{2}Cx_1^2$

(c) Cx_1 (d) Zero

24. Two springs of spring constants 1500 N/m and 3000 N/m respectively are stretched with the same force. They will have potential energy in the ratio

(a) 4 : 1 (b) 1 : 4

(c) 2 : 1 (d) 1 : 2

25. A position dependent force $F=7-2x+3x^2$ N acts on a small body of mass 2 kg and displaces it from $x=0$ to $x=5$m. The work done in *joules* is

(a) 70 (b) 270

(c) 35 (d) 135

26. The force constant of a wire is k and that of another wire is 2k. When both the wires are stretched through same distance, then the work done

(a) $W_2=2W_1^2$ (b) $W_2=2W_1$

(c) $W_2=W_1$ (d) $W_2=0.5W_1$

27. The spring extends by x on loading, then energy stored by the spring is :
(if T is the tension in spring and k is spring constant)

(a) $\frac{T^2}{2k}$ (b) $\frac{T^2}{2k^2}$

(c) $\frac{2k}{T^2}$ (d) $\frac{2T^2}{k}$

28. The potential energy of a body is given by, $U = A - Bx^2$ (Where x is the displacement). The magnitude of force acting on the particle is
(a) Constant
(b) Proportional to x
(c) Proportional to x^2
(d) Inversely proportional to x

29. A body of mass m accelerates uniformly from rest to v_1 in time t_1. As a function of time t, the instantaneous power delivered to the body is
(a) $\frac{mv_1t}{t_1}$ (b) $\frac{mv_1^2t}{t_1}$
(c) $\frac{mv_1t^2}{t_1}$ (d) $\frac{mv_1^2t}{t_1^2}$

30. A motor boat is travelling with a speed of 3.0 m/sec. If the force on it due to water flow is 500 N, the power of the boat is
(a) 150 kW (b) 15 kW
(c) 1.5 kW (d) 150 W

31. A coin placed on a rotating turn-table slips, when it is placed at a distance of 9 cm from the centre, if the angular velocity of the turn-table is trippled. It will just slip, if its distance from the centre is:
(a) 27 cm (b) 9 cm (c) 3 cm (d) 1 cm

32. The velocity and acceleration vectors of a particle undergoing circular motion are $\vec{v} = 2\hat{i}\,m/s$ and $\vec{a} = 2\hat{i} + 4\hat{j}\,m/s^2$ respectively at an instant of time. The radius of the circle is :
(a) 1 m (b) 2 m (c) 3 m (d) 4 m

33. If a_r and a_t represent radial and tangential accelerations, the motion of a particle will be uniformly circular if :
(a) $a_r = 0$ and $a_t = 0$ (b) $a_r = 0$ but $a_t \neq 0$
(c) $a_r \neq 0$ and $a_t = 0$ (d) $a_r \neq 0$ and $a_t \neq 0$

34. 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?
(a) 2m/sec^2 (b) 2.7 m/sec^2
(c) 1.8 m/sec^2 (d) 9.8 m/sec^2

35. A particle moves in a circular path of radius 25 cm at two revolutions per second. The acceleration of the particle in m/s^2 is :
(a) π^2 (b) $8\pi^2$ (c) $4\pi^2$ (d) $2\pi^2$

SECTION -B

36. A particle of mass m is fixed to one end of a light spring of force constant k and unstretched length l. The system is rotated about the other end of the spring with an angular velocity ω, in gravity free space. Then increase in length of the spring will be:
(a) $\frac{m\omega^2 l}{k}$ (b) $\frac{m\omega^2 l}{k - m\omega^2}$ (c) $\frac{m\omega^2 l}{k + m\omega^2}$ (d) N.O.T.

37. A disc initially at rest, is rotated about its axis with uniform angular acceleration. In the first 2s, it rotates an angle θ. In the next 2s, the disc rotates through an angle
(a) θ (b) 2θ (c) 3θ (d) 4θ

38. A body is projected with an initial velocity $(a\hat{i} + b\hat{j})$ ms^{-1}. If the range of the projectile is double of the maximum height reached by it then.
(a) a = 2b (b) b = 4a (c) b = 2a (d) b = a

39. Two bodies thrown from the same point at angles 30^o and 60^o with the horizontal attain the same height. The ratio of their initial velocities is:
(a) 1 : 1 (b) 2 : 1 (c) $\sqrt{3}:1$ (d) 1 : 3

40. The projectile is thrown at an angle β with the vertical. It reaches a maximum height H. The time taken to reach the highest point of its path is:
(a) $\sqrt{\frac{H}{g}}$ (b) $\sqrt{\frac{2H}{g}}$ (c) $\sqrt{\frac{H}{2g}}$ (d) $\sqrt{\frac{2H}{g\cos\beta}}$

41. The equation of the projectile is $y = \sqrt{3}x - \frac{gx^2}{2}$. The angle of projection is:
(a) $\tan\theta = \frac{1}{\sqrt{3}}$ (b) $\tan\theta = \sqrt{3}$
(c) $\pi/2$ (d) Zero

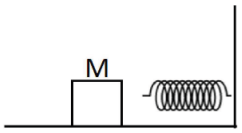
42. For a projectile, the angle of projection is 30^o, then how many times is the horizontal range larger than the maximum height:
(a) 2 (b) 3 (c) $3\sqrt{3}$ (d) $4\sqrt{3}$

43. A body is projected vertically upwards. The time corresponding to height 'h' while ascending and descending are t_1 and t_2 respectively. Then the velocity of projection is:
(g= Acceleration due to gravity)
(a) $g\frac{\sqrt{t_1.t_2}}{2}$ (b) $\frac{g(t_1 + t_2)}{2}$
(c) $gt_1 + t_2$ (d) $\frac{t_1.t_2}{(t_1 + t_2)}$

44. Two stones are projected with the same velocity in magnitude but make different angles with the horizontal. Their ranges are equal. If the angle of projection of one is $\pi/3$ and the maximum height is y_1, then the maximum height of the other will be.

(a) $3y_1$ (b) $2y_1$ (c) $\frac{y_1}{2}$ (d) $\frac{y_1}{3}$

45. The block of mass M moving on the frictionless horizontal surface collides with the spring of spring constant K and compresses it by length L.



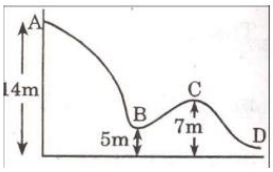
The maximum momentum of the block after collision is:

(a) zero (b) $\frac{ML^2}{K}$ (c) $\sqrt{MK}\,L$ (d) $\frac{KL^2}{2M}$

46. A man does a given amount of work in 10 sec. Another man does the same amount of work in 20 sec. The ratio of the output power of first man to the second man is :

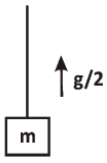
(a) 1 (b) 1/2 (c) 2/1 (d) None

47. Figure show the vertical section of frictionless surface. A block of mass 2 kg is released from the position A; its KE as it reaches the position C its KE is :



(a) 180 J (b) 140 J (c) 40 J (d)280 J

48. A string is used to pull a block of mass m vertically up by a distance h at a constant acceleration g/2. The work done by tension in the string is :



(a) $\frac{+3mgh}{2}$ (b) $\frac{-mgh}{4}$

(c) $+\frac{5}{4}mgh$ (d) + mgh

49. Power supplied to a body of mass 2 kg varies with time as $P=\frac{3t^2}{2}$ watt. Here t is in seconds. If velocity of particle at t = 0 is v = 0 , the velocity of particle at time t = 2 s will be :

(a) 1 m/s (b) 4 m/s (c) 2 m/s (d) $2\sqrt{3}$ m/s

50. If the momentum of a body increases by 20 %, the percentage increase in its K.E. is equal to :

(a) 44 (b) 66 (c) 20 (d) 88

CHEMISTRY

SECTION – A

51. What is the value of K_c if K_b and k_f are 1.2×10^{-3} and 1.4×10^{-2} respectively?

(a) 11.66 (b) 0.88 (c) 1.166 (d) 8.8

52. Calculate K_c for the reversible process given below if $K_p = 167$ and $T = 800^oC$.

$CaCO_{3(s)} \rightleftharpoons CaO_{(s)} + CO_{2(g)}$

(a) 1.95 (b) 1.85 (c) 1.89 (d) 1.60

53. A 20 litre container at 400 K contains $CO_{2(g)}$ at pressure 0.4 atm and an excess of SrO (negalect the volume of solid SrO). The volume of the container is now decreased by moving the movable piston fitted in the container. The maximum volume of the container, when pressure of CO_2 attains its maximum value, will be.

(Given that : $SrCO_{3(s)} \rightleftharpoons SrO_{(s)} + CO_{2(g)}, K_p = 1.6$ atm)

(a) 10 litre (b) 4 litre (c) 2 litre (d) 5 litre

54. Which one of the following aqueous solution of salts has the lowest pH value?

(a) CH_3COONa (b) $NaCl$

(c) NH_4OOCCH_3 (d) NH_4Cl

55. 25 mL of 0.2 M $Ca(OH)_2$ is neutralized by 10 mL of 1 M HCl. Then pH of resulting solution is.

(a) 1.37 (b) 9 (c) 12 (d) 7

56. A monobasis weak acid solution has a molarity of 0.005 M and pH of 5. What is its percentage ionization in this solution?

(a) 2.0 (b) 0.2 (c) 0.5 (d) 0.25

57. Concentration of the Ag^+ ions in a saturated solution of $Ag_2C_2O_4$ is 2.2×10^{-4} mol L^{-1}. Solubility product of $Ag_2C_2O_4$

(a) 2.66×10^{-12} (b) 4.5×10^{-11}

(c) 5.3×10^{-12} (d) 2.42×10^{-8}

58. For $Fe(OH)_3$, the solubility product K_{sp} is.

(a) $27S^4$ (b) S^2 (c) $4S^3$ (d) $8S^4$

59. When equal volume of $AgNO_3$and NaCl solutions are mixed, the precipitation of AgCl ($K_{sp} = 1.81 \times 10^{-10}$)

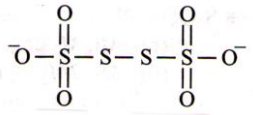
(a) 10^{-3} M (Ag^+) and 10^{-10} M (Cl^-)

(b) 10^{-5} M (Ag^+) and 10^{-5} M (Cl^-)

(c) 10^{-6} M (Ag^+) and 10^{-5} M (Cl^-)

(d) 10^{-4} M (Ag^+) and 10^{-4} M (Cl^-)

60. The oxidation states of S stoms $S_4O_6^{2-}$ from left to right respectively are



(a) +6, 0,0, +6 (b) +3, +1, +1, +3
(c) +5, 0,0, +5 (d) +4, +1, +1, +4

61. H_5IO_6 is a
(a) strong reducing agent
(b) strong base
(c) strong oxidizing agent
(d) weak base.

62. The ratio between kinetic energy and the total energy of the electrons of hydrogen atom according to Bohr's model is :
(a) 1 : 1 (b) 1 : 5 (c) 1 : 2 (d) 2 : 1

63. The ratio of the difference in energy of electron between the first second Bohr's orbit to that between second and third Bohr's orbit is:
(a) $\frac{1}{3}$ (b) $\frac{27}{5}$ (c) $\frac{9}{4}$ (d) $\frac{4}{9}$

64. Of the following transitions in hydrogen atom, the one which gives an absorption line of maximum wavelength is:
(a) n = 1 to n = 2 (b) n = 3 to n = 8
(c) n = 2 to n = 1 (d) n = 8 to n = 3

65. What possible can the ratio of the Broglie wavelengths for two electrons having the same initial energy and accelerated through 50 V and 200 V?
(a) 3 : 10 (b) 10 : 3 (c) 1 : 2 (d) 2 : 1

66. The number of electrons in sulphur atom having $n + l = 3$
(a) 2 (b) 4 (c) 6 (d) 8

67. Maximum numbers of electrons in a subshell is given by:
(a) $(2l + 1)$ (b) $2(2l + 1)$
(c) $(2l + 1)^2$ (d) $2(2l + 1)^2$

68. How many electrons in $_{19}K$ have $n = 3; l = 0$?
(a) 1 (b) 2 (c) 4 (d) 3

69. The 3d – orbitals having electron density in all the three axes is:
(a) $3d_{xy}$ (b) $3d_{z^2}$ (c) $3d_{yz}$ (d) $3d_{zx}$

70. The following quantum numbers are possible for how many orbitals? n = 3, l = 2, m = +2
(a) 3 (b) 2 (c) 1 (d) 4

71. The number of nodes in a 4d – orbital is:
(a) 0 (b) 1 (c) 2 (d) 3

72. Number of electrons present in 6 g of CO_3^{2-} is.
(a) 1.806×10^{24} (b) 1.9264×10^{24}
(c) 3.7324×10^{24} (d) None of these

73. Mass of calcium that has same number of atoms as in 16 g CH_4 is.
(a) 200 g (b) 100 g (c) 40 g (d) 20 g

74. 20 moles of A and 14 moles of B are mixed and allowed to react according to the equation.
$A + 2B \rightarrow 3C$
What is the maximum number of moles of C which could be prepared?
(a) 14 (b) 21 (c) 13 (d) 7

75. How many moles of electron weight one kilogram?
(a) 6.023×10^{23} (b) $\frac{1}{9.108} \times 10^{31}$
(c) $\frac{6.023}{9.108} \times 10^{54}$ (d) $\frac{1}{9.108 \times 6.023} \times 10^{8}$

76. The empirical formula and molecular mass of a compound are CH_2O and 180 g respectively. What will be the molecular formula of the compound?
(a) $C_9H_{18}O_9$ (b) CH_2O
(c) $C_6H_{12}O_6$ (d) $C_2H_4O_2$

77. For the reaction $A + 2B \rightarrow C$, 5 mol of A and 8 mol of B will produce
(a) 5 mole of C (b) 4 mole of C
(c) 8 mole of C (d) 13 mole of C

78. Which of the following contains the least number of molecules?
(a) 4.4 g CO_2 (b) 3.4 g NH_3
(c) 1.6 g CH_4 (d) 3.2 g SO_2

79. An ionic bond $A^+ + B^-$ is most likely to be formed when
(a) the ionization energy of A is high and the electron affinity of B is low
(b) the ionization energy of A is low and the electron affinity of B is high
(c) the ionization energy of A and the electron affinity of B is high
(d) the ionization energy of A and the electron affinity of B is low.

80. The corret order of the increasing ionic character is.
(a) $BeBr_2 < MgBr_2 < CaBr_2 < BaBr_2$
(b) $BeBr_2 < MgBr_2 < BaBr_2 < CaBr_2$
(c) $BeBr_2 < BaBr_2 < MgBr_2 < CaBr_2$
(d) $BaBr_2 < MgBr_2 < CaBr_2 < BeBr_2$

81. $SnCl_4$ is a covalent liquid because.
(a) Electron clouds of the Cl^- ions are weakly polarized to envelop the cation
(b) Electron clouds of the Cl^- ions are strongly polarized to envelop the cation
(c) Its molecules are attracted to one another by strong van der Waals forces
(d) Sn shows inert pair effect.

82. Which of the following species are hypervalent?
1. ClO_4^- 2. BF_3 3. SO_4^{2-} 4. CO_3^{2-}
(a) 1, 2, 3 (b) 1, 3 (c) 3, 4 (d) 1, 2

83. NH_3 and BF_3 combine readily because of the formation of:
(a) a covalent bond (b) a hydrogen bond
(c) a coordinate bond (d) an ionic bond

84. Which of the following has been arranged in increasing order of size of the hybrid orbitals?
(a) $sp < sp^2 < sp^3$ (b) $sp^3 < sp^2 < sp$
(c) $sp^2 < sp^3 < sp$ (d) $sp^2 < sp < sp^3$

85. Consider the following molecules:

H_2O	H_2S	H_2Se	H_2Te
I	II	III	IV

Arrange these molecules in increasing order of bond angles
(a) I < II < III < IV (b) IV < III < II < I
(c) I < II < IV < III (d) II < IV < III < I

SECTION- B

86. For BF_3 molecules which of the following is true?
(a) B – atom is sp^2 hybridised
(b) There is a $P\pi - P\pi$ back bonding in this molecule
(c) Observed B – F bond length is found to be less than the expected bond length
(d) All of these

87. Of the following molecules, the one, which has permanent dipole moment, is.
(a) SiF_4 (b) BF_3 (c) PF_3 (d) PF_5

88. Which of the following has the least dipole moment?
(a) NF_3 (b) CO_2 (c) SO_2 (d) NH_3

89. Which of the following is least volatile?
(a) HF (b) HCl (c) HBr (d) HI

90. Which one of the following does not have intermolecular H – bonding?
(a) H_2O (b) o – nitro phenol
(c) HF (d) CH_3COOH

91. Among the following species, which has the minimum bond length?
(a) B_2 (b) C_2 (c) F_2 (d) O_2^-

92. Which of the following have bond order three?
(a) O_2^+ (b) NO^+ (c) CN^- (d) CN^+

93. In PO_4^{3-} ion the formal charge on the oxygen atom of P – O bond is.
(a) + 1 (b) – 1 (c) – 0.75 (d) + 0.75

94. Number of π bonds and σ bonds in **Napthalene** is.
(a) 6, 19 (b) 4, 20 (c) 5, 19 (d) 5, 20

95. The molecular formula of the compound formed from B and C will be.
(a) BC (b) B_2C (c) BC_2 (d) B_4C_3

96. The bond between B and C will be.
(a) Ionic (b) Covalent
(c) Hydrogen (d) Coordinate

97. The correct sequence of increasing covalent character is represented by.
(a) LiCl < NaCl < $BeCl_2$ (b) $BeCl_2$ < LiCl < NaCl
(c) NaCl < LiCl < $BeCl_2$ (d) $BeCl_2$ < NaCl, LiCl

98. Which one of the following is the correct of interactions?
(a) Covalent < hydrogen bonding < vander Waals < dipole – dipole
(b) Vander Waals < hydrogen bonding < dipole - dipole< covalent
(c) Vander Waals < dipole – dipole < hydrogen bonding < covalent
(d) Dipole – dipole < vander Waals < hydrogen bonding < cavalent

99. Match the columns

	Column – I		Column – II
A	BeH_2	(p)	Odd electron molecules
B.	SF_6	(q)	Expanded octet
C.	NO_2	(r)	Incomplete octet of central atom

(a) A – (p), B – (q), C – (r)
(b) A – (q), B – (r), C – (p)
(c) A – (r), B – (q), C – (p)
(d) A – (r), B – (p), C – (q)

100. **Assertion:** Shape of NH_3 molecule is tetrahedral.
Reason: In NH_3 nitrogen is sp^3 hybridized
(a) Assertion is correct, reason is correct; reason is a correct explanation for assertion
(b) Assertion is correct, reason is correct; reason is not a correct explanation for assertion
(c) Assertion is correct, reason is incorrect
(d) Assertion is incorrect, reason is correct

BOTANY

SECTION – A

101. How many given features are related to meristematic tissue?
1. Cells are always in active state of division.
2. Helps in regeneration of parts removed by grazing animals.
3. Helps in both primary and secondary growth of plant.
4. Never form axillary bud.
(a) Three (b) Two (c) One (d) Four

102. Which of the following is made up of living cells?
(a) Sclerenchyma (b) Collenchyma
(c) Xylem vessels (d) Phloem fibres

103. Sclereids are obliterated cells. They are found in all, **except**
(a) Fruit walls of walnut
(b) Pulp of fruit like guava
(c) Tea leaves
(d) Sunhemp stem

104. Which of the following statements is **incorrect** for sieve tube elements?
(a) Thin walled living structures
(b) Having peripheral cytoplasm with prominent nucleus
(c) Are food conducting elements of plants
(d) End walls are perforated in sieve-like manner to form the sieve plates.

105. The stomatal aperture, guard cells and the surrounding subsidiary cells are together called
(a) Egg apparatus (b) Golgi apparatus
(c) Stomatal apparatus (d) Hydathodes

106. When xylem and phloem are jointly situated on the same radius of the vascular bundles is called
(a) Radial vascular bundles
(b) Conjoint vascular bundles
(c) Bicollateral vascular bundles
(d) Concentric vascular bundles

107. Sclerenchyma fibres are
(a) Highly lignified that the lumen is greatly increased
(b) Highly elongated cells
(c) Found generally singly not in group
(d) Found associated with xylem only

108. The meristem which is intercalated in between the permanent tissues
(a) Reduces the length of plants or its organs
(b) Is found in woody trees only
(c) Is primary meristem
(d) Is commonly known as cylindrical meristem

109. Collenchyma is present in
(a) Monocot root (b) Dicot root
(c) Monocot stem (d) Dicot stem

110. Which of the following statements is **not** related to parenchyma?
(a) Cells are closely packed or have small intercellular space
(b) Group of cells mainly for storage of food
(c) They are present in all parts of higher plant except root
(d) They form the main bulk of the plant body

111. Select **correct** option w.r.t. tracheids
(a) These are present in gymnosperm but not in pteridophytes
(b) They provide mechanical support to the plant body
(c) Inner layer show thickening of suberin as they vary in form
(d) Living cells with abundant cytoplasm and without nucleus

112. Which cells help in maintaining the pressure gradient in the sieve tubes of phloem?
(a) Companion cells
(b) Sieve cells
(c) Phloem parenchyma cells
(d) Cells of transfusion tissue

113. The epidermal hairs present on stem, which prevent water loss due to transpiration is:
(a) Root hairs (b) Filament
(c) Trichomes (d) None of these

114. Select the incorrect statement w.r.t. lateral meristem.
(a) Found in mature regions of roots and shoots
(b) Generally not present from the very beginning of the life of a plant
(c) Helps in increasing the girth of the stems and roots
(d) Helps in increasing length of the plant

115. In roots, the arrangement of xylem and vascular bundles is _____ and _____, respectively.
(a) Endarch, radial (b) Endarch, conjoint
(c) Exarch, radial (d) Exarch, conjoint

116. How many of the given cells do not possess nucleus?
Companion cells, Albuminous cells, Mature sieve tube, Xylary fibres, Sclereids, Phloem parenchyma
(a) One (b) Three
(c) Four (d) Two

117. Which of the following components of phloem is mostly absent in primary phloem?
(a) Companion cells
(b) Phloem fibres
(c) Sieve tube elements
(d) Phloem parenchyma

118. All of the following statements are correct for guard cells except
(a) Bean shaped in dicots
(b) Are green
(c) Dumb-bell shaped in grasses (monocot)
(d) Outer walls are thick and the inner walls are thin

119. During the formation of leaves and elongation of stem, some cells 'left behind' from the shoot apical meristem, constitute the
(a) Lateral meristem
(b) Axillary bud
(c) Cork cambium
(d) Fascicular cambium

120. Which of the following is correctly matched?
(a) Formation of false septum – Axile placentation
(b) Presence of true septum – Marginal placentation
(c) Absence of septum – Free central placentation
(d) Presence of ventral suture – Parietal placentation

121. Coconut is fibrous drupe because it has
(a) Fibrous epicarp and stony endocarp
(b) Fibrous mesocarp and stony epicarp
(c) Fibrous endocarp and stony seed coat
(d) Fibrous mesocarp and stony endocarp

122. Which of the following statements is not **true** for maize seed?
(a) Seed coat is membranous
(b) Seed is endospermous
(c) Sheath of the plumule is coleorrhiza
(d) Seed coat is fused with fruit wall

123. Which one of the following is a fumigatory plant?
(a) Belladonna (b) Muliathi
(c) Tobacco (d) *Aloe*

124. Swollen placenta with large number of ovules is the characteristic of a family
(a) Having umbellate clusters of flower
(b) Showing fibrous and adventitious roots
(c) Having ex-albuminous seeds
(d) Having persistent calyx

125. Find **odd** one w.r.t. gram seed
(a) Presence of testa and tegmen
(b) Embryonal axis with plumule and radicle
(c) Endosperm as food storing tissue
(d) Cotyledons as food storing parts

126. Which of the following represents dye yielding crop and medicinal plant respectively?
(a) *Indigofera* and Belladonna
(b) Chilli and Muliathi
(c) Ashwagandha and Tulip
(d) *Withania* and *Colchicum*

127. Drupe is usually one seeded fruits with pericarp differentiated into
(a) Epicarp, mesocarp and hard and stony endocarp
(b) Fleshy mesocarp and epicarp only
(c) Epicarp and endocarp, which is edible
(d) Epicarp and mesocarp which form skin

128. Name the scar on the seed coat through which the developing seeds are attached to the fruit
(a) Replum (b) Micropyle
(c) Hilum (d) Epiblast

129. The family liliaceae is characterized by
(a) Vexillary aestivation, tepals five, capsule fruit
(b) Endospermous seed, tap root, asymmetric flower
(c) Valvate aestivation, stamen six, umbellate clusters
(d) Underground bulbs, ovary superior, tetracarpellary

130. Which type of aestivation in petals is seen in *Petunia*?
(a) Valvate type (b) Imbricate type
(c) Twisted type (d) Vexillary type

131. Chief characteristic feature of Bryophytes are given below. Among them select the correct option:
(i) Amphibians of the plant kingdom
(ii) Play an important role in plant succession on bare rocks/soil
(iii) Rhizoids of them are unicellular as well as multicelluar and sex organs are unicellular
(iv) Main plant body is gametophytic or haploid
(a) i, iv (b) i, iii, iv
(c) i, ii, iv (d) i, ii, iii, iv

132. Pick out wrong statement regarding gymnosperms:
(a) Double fertilization is unique to gymnosperms and monocotyledons seeds are with testa
(b) *Sequoia*, a gymnosperm, is one of the tallest tree and also known as red wood tree
(c) The multicellular female gametophyte is retained within the megasporangium
(d) The gymnosperms are heterosporous and its endosperm is haploid

133. Match the following columns:

	Column – I		**Column – II**
(a)	Chara	(i)	Brown algae
(b)	Dictyota	(ii)	Green algae
(c)	Porphyra	(iii)	Liverwords
(d)	Male Marchantia	(iv)	Red algae

(a) a – i, b – ii, c – iii, d – iv
(b) a – i, b – ii, c – iv, d – iii
(c) a – ii, b – iv, c – i, d – iii
(d) a – ii, b – i, c – iv, d – iii

134. Haplo – diplontic life cycle found in:
(a) *Polysiphonia* an alga
(b) Bryophytes only
(c) Both (a) and (b)
(d) Gymnosperms

135. In kingdom plantae alteration of generation is not associated with
(a) Sporophytic and gametophytic phase
(b) Length of haploid & diploid phases
(c) Number of haploid and diploid phases
(d) Freeliving or dependent nature of haploid & diploid phases

SECTION – B

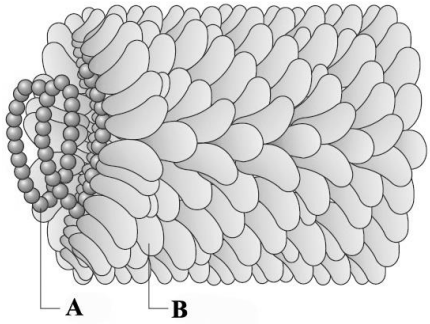
136. Which pair of the following belongs to basidiomycetes:
(a) Puffballs and *Claviceps*
(b) *Puccinia* and *Alternaria*
(c) Morels and mushrooms
(d) Bracket fungi and puffballs

137. Match the following

A.	D.J. Ivanowsky	(i)	Discovery of viroids
B.	Beijerinek	(ii)	Crystallisation of virus
C.	W.M. Stanley	(iii)	Demonstration of virus
D.	T.O. Diener	(iv)	Discovery of virus

(a) A (iv), B (iii), C (ii), D (i)
(b) A (iv), B (iii), C (i), D (ii)
(c) A (iii), B (iv), C (ii), D (i)
(d) A (ii), B (iii), C (iv), D (i)

138. Structure of TMV is shown below label A and B:



(a) A – DNA, B – capsomere
(b) A – RNA, B – capsid
(c) A – cDNA, B – capsomere
(d) A – Capsid, B – capsomere

139. Multicellular eukaryotic organisms which decomposes dead and decaying organic matter have been placed in the kingdom:
(a) Monera (b) Protista
(c) Fungi (d) Plantae

140. The group of neglected plants, showing great diversity in morphology and habitat, having various classes. Which of the following is not applicable on phycomycetes:
(a) Obligate parasites on plants
(b) Found in moist and damps places
(c) Septate, Coenocytic mycelium
(d) Endogenously produced spores

141. In taxonomic hierarchy, which of the following group of taxa will have more number of similarities as compared to other?
(a) Anacardiaceae,Convolvulaceae and Poaceae
(b) Polymoniales, Poales and Sapindales
(c) *Solanum*, *Petunia* and *Datura*
(d) Leopard, tiger and lion

142. Live specimens are used for reference in taxonomic studies in
(a) Museum
(b) Zoological parks
(c) Botanical gardens
(d) More than one option is correct

143. What do A, B and C represent in the give scientific name respectively?
Mangifera indica Linn
C B A
(a) Generic name, specific name and author's name
(b) Specific name generic name an author's name
(c) Author's name, specific name and generic name
(d) Generic name, author's name and specific name

144. Which of the following is not correct about the vacuole?
(a) Vacuole contains water, sap and excretory products
(b) In plant cells, the vacuoles can occupy up to 90 percent of the volume of the cell
(c) Vacuole is the part of endomembrane system
(d) Vacuole is bound by double membrane called tonoplast

145. Match the columns

	Column I		Column II
A.	Endoplasmic reticulum	i.	Stack of cisternae
B.	Sphaerosomes	ii.	Stores oil
C.	Dictyosomes	iii.	Synthesis and storage of lipids
D.	Peroxisomes	iv.	Photorespiration
E.	Elaioplasts	v.	Detoxification of drugs

(a) A-v, B-iii, C-i, D-iv, E-ii
(b) A-v, B-iii, C-ii, D-iv, E-i
(c) A-ii, B-iii, C-i, D-iv, E-v
(d) A-iii, B-v, C-i, D-iv, E-ii

146. If a diploid daughter cell formed after mitosis has 16 chromosomes and 2C content of DNA, what would have been the chromosome number and DNA content in its parent cell?
(a) After G_1 phase content of DNA = 1C
Number of chromosomes = 16
(b) After S-phase content of DNA = 2C
Number of chromosomes = 32
(c) After S-phase content of DNA = 4C
Number of chromosomes = 16
(d) Before G_2 phase content of DNA = 2C
Number of chromosomes = 8

147. The phase of mitosis in which chromosomes are thickest and shortest is
(a) Metaphase (b) Prophase
(c) Telophase (d) Anaphase

148. Which among the following statement is incorrect:
(a) Lipids are generally water insoluble
(b) Simple lipid is glycerol which is trihydroxy propane
(c) Arachidonic acid has 16 carbon atoms including the carboxyl carbon
(d) Palmitic acid has 15 carbons excluding carboxyl carbon

149. Which among the following is a drug:
(a) Vinblastin (b) Ricin
(c) Codeine (d) Morphine

150. Which is a correct matching set:

	Column – I		Column – II
A.	Collagen	I.	Hormone
B.	Trypsin	II.	Enzyme
C.	Insulin	III.	Enable glucose transport into cells
D.	GLUT – 4	IV.	Fights infectious agents
E.	Antibody	V.	Intercellular ground substance

(a) A – V, B – II, C – I, D – III, E – IV
(b) A – V, B – I, C– II, D – IV, E – III
(c) A – IV, B – II, C – I, D – IV, E – V
(d) A – IV, B – I, C – II, D – III, E – V

ZOOLOGY
SECTION - A

Section - A

151. When any plane passing through the central axis of the body divides the organism into two identical halves, the organism is called _____.
(a) radially symmetrical
(b) bilaterally symmetrical
(c) asymmetrical
(d) metamerically segmented

152. Which of the following is not the common fundamental feature for animal classification?
(a) Germinal layers.
(b) Pathway of water transport.
(c) Pattern of organization of cells.
(d) Serial repetition of the segments.

153. Animals like annelids, arthropods, etc. where the body can be divided into identical left and right halves in only one plane, exhibit_____symmetry.
(a) radial (b) bilateral
(c) asymmetrical (d) non- symmetrical

154. Which of the following is a fresh water sponge?
(a) *Sycon* (b) *Euspongia*
(c) *Spongilla* (d) *Pleurobrachia*

155. Few cnidarians like corals have a skeleton composed of
(a) calcium hydroxide (b) calcium sulphate
(c) calcium carbonate (d) sodium bicarbonate

156. *Meandrina* (brain coral) belongs to phylum
(a) porifera (b) coelenterata
(c) ctenophora (d) Platyhelminthes

157. In ctenophora, the body bears _____ external rows of ciliated comb plates, which help in locomotion.
(a) five (b) six (c) seven (d) eight

158. Flame cells present in platyhelminthes are specialized in
(a) respiration and absorption.
(b) osmoregulation and circulation.
(c) respiration and excretion.
(d) osmoregulation and excretion.

159. Polyp phase is absent in
(a) *Hydra* (b) *Aurelia*
(c) *Physalia* (d) *Obelia*

160. _____ is responsible for maintaining the current of water in sponge.
(a) Osculum (b) Porocytes
(c) Spongocoel (d) Choanocytes

161. Aquatic annelids (like *Nereis*) possess lateral appendages called _____, which help in swimming.
(a) visceral hump (b) parapodia
(c) radula (d) spicules

162. Which of the following is a living fossil?
(a) *Balanoglossus* (b) *Echinus*
(c) *Ancylostoma* (d) *Limulus*

163. In phylum echinodermata, the adult echinoderms are _____A_____ but larvae are _____B_____ .
(a) A – radially symmetrical; B – bilaterally symmetrical
(b) A – bilaterally symmetrical; B – radially symmetrical
(c) A – bilaterally symmetrical; B – asymmetrical
(d) A – metamerically segmented; B – asymmetrical

164. In which of the phylum, excretory organ like proboscis gland is present?
(a) Hemichordata (b) Chordata
(c) Echinodermata (d) Annelida

165. Which of the following is an incorrect statement regarding flatworms ?
(a) They are acoelomates.
(b) They are bilaterally symmetrical.
(c) They lack a digestive system.
(d) They have a circulatory system.

166. Which of the following is not a characteristic of phylum echinodermata ?
(a) They have a water vascular system.
(b) They have an internal skeleton.
(c) They are protostomes.
(d) They have bilateral symmetry at larval stage.

167. Which of the following statement(s) is/are correct regarding phylum mollusca?
(a) They are bilaterally symmetrical, triploblastic and coelomate animals.
(b) Body is covered by a calcareous shell and is unsegmented with a distinct head, muscular foot and visceral hump.
(c) The mouth contains a file-like rasping organ for feeding, called radula.
(d) All of the above

168. Match the characteristic feature/terms given in column I with the phylum to which they belongs given in column II and choose the correct option.

	Column – I (Characteristic feature/term)		**Column – II (Phylum)**
A.	Choanocytes	I.	Platyhelminthes
B.	Cnidoblasts	II.	Ctenophora
C.	Flame cells	III.	Porifera
D.	Nephridia	IV.	Coelenterata
E.	Comb plates	V.	Annelida

(a) A – II; B – I; C – IV; D – V; E – III
(b) A – II; B – IV; C – I; D – V; E – III
(c) A – V; B – I; C – III; D – II; E – IV
(d) A – III; B – IV; C – I; D – V; E – II

169. Column I contains zoological names of animals and column II contains their common name. Match the following and choose the correct option.

	Column – I		**Column – II**
A.	*Physalia*	I.	Sea anemone
B.	*Meandrina*	II.	Brain coral
C.	*Gorgonia*	III.	Sea fan
D.	*Adamsia*	IV.	Portuguese man-of-war

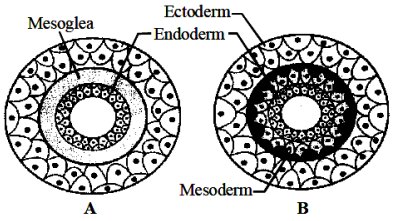
(a) A – III; B – II; C – I; D – IV
(b) A – IV; B – III; C – II; D – I
(c) A – IV; B – II; C – III; D – I
(d) A – II; B – III; C – I; D – IV

170. Match the features given in column I with their examples given in column II and choose the correct match from the option given below.

	Column – I (Feature)		**Column – II (Example)**
A.	Pseudocoelomates	(i)	*Hydra, Adamsia*
(B)	Diploblastic	(ii)	*Ctenoplana, Aurelia*
(C)	Cellular level of organization	(iii)	*Ascaris, Wuchereria*
(D)	Radial symmetry	(iv)	*Sycon, Spongilla*
(E)	Metamerism	(v)	*Pheretima, Neries*

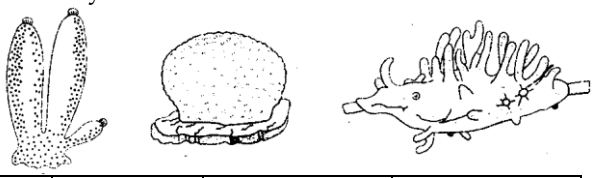
	A	**B**	**C**	**D**	**E**
(a)	(v)	(ii)	(iv)	(iii)	(i)
(b)	(iii)	(i)	(iv)	(ii)	(v)
(c)	(ii)	(i)	(iii)	(v)	(iv)
(d)	(iii)	(ii)	(iv)	(i)	(v)

171. The given figures (A & B) shows the germinal layer.



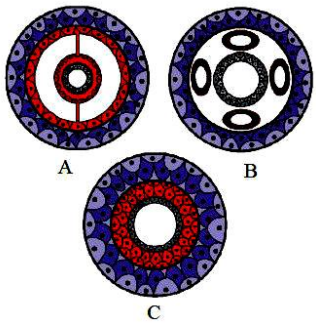
The animals having structures shown in the figures are respectively called
(a) diploblastic, triploblastic
(b) triploblastic, diploblastic
(c) diploblastic, diploblastic
(d) triploblastic, triploblastic

172. Examine the figures A, B and C. In which one of the four options all the items A, B and C are correctly identified ?



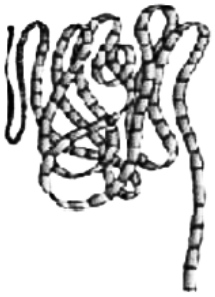
	A	B	C
(a)	*Sycon*	*Euspongia*	*Spongilla*
(b)	*Euspongia*	*Spongilla*	*Sycon*
(c)	*Spongilla*	*Sycon*	*Euspongia*
(d)	*Euspongia*	*Sycon*	*Spongilla*

173. Identify the figures and select the correct option



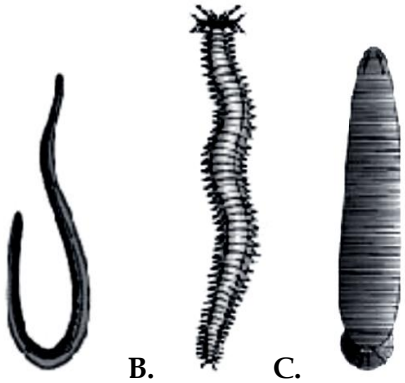
(a) A - Pseudocoelomate; B - Coelomate, C-Acoelomate
(b) A - Coelomate, B - Pseudocoelomate, C- Acoelomate
(c) A - Coelomate; B- Acoelomate; C - Pseudocoelomate
(d) A - Coelomate; B- Acoelomate; C-Eucoelomate

174. Identify the figure with its correct name and phylum.



(a) *Sycon* - Porifera
(b) *Aurelia* - Coelenterata
(c) *Pleurobrachia* - Ctenophora
(d) Tapeworm – Platyhelminthes

175. Identify the figures A, B and C and choose the correct option.



A. **B.** **C.**

(a) A - Male *Ascaris*, B - *Hirudinaria* (leech), C- *Nereis*
(b) A - Female *Ascaris*, B - *Nereis*, C-*Hirudinaria* (leech)
(c) A - Female *Ascaris* B- *Hirudinaria* (leech), C - *Nereis*
(d) A - Male *Ascaris*, B - *Nereis*, C- *Hirudinaria* (leech)

176. Identify the animals shown in the given figures A, B and C from options given below.

A B C

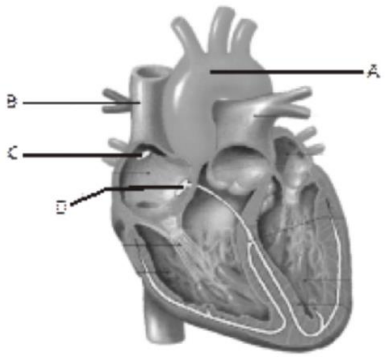
(a) A - Octopus; B -*Asterias*, C- *Ophiura*
(b) A - *Asterias*; B - *Ophiura*, C- Octopus
(c) A - *Echinus*; B - Octopus C - *Ophiura*
(d) A - *Ophiura*; B - *Echinus*, C- Octopus

177. Identify the figure with its correct name and phylum.

(a) *Cucumaria* – Echinodermata
(b) *Ascidia* – Urochordata
(c) *Balanoglossus* – Hemichordata
(d) *Hirudinaria* – Annelida

178. Which leucocytes are phagocytic cells that destroys foreign organisms entering the body :
(a) Neutrophils (b) Eosinophils
(c) Basophils (d) All of these

179. Identify A, B, C and D in given diagram & choose the correct option :



(a) A-Aorta, C-Vena cava
(b) B-Aorta, D-Sino-atrial node
(c) C-Sino-atrial node, D-Atrio-ventricular node
(d) C-Aorta, B-Vena cava

180. The opening between the right atrium and the right ventricle is guarded by which valve :
(a) Tricuspid valve (b) Bicuspid valve
(c) Mitral valve (d) Thebesian valve

181. What is responsible for depolarisation of atria, during ECG.
(a) P-wave (b) Q-wave
(c) QRS-complex (d) T-wave

182. Select the correct statements
(A) Fibrinogen helps in maintenance of osmotic pressure
(B) Glucose is absent in plasma
(C) Serum does not clot
(D) Lymph is a connective tissue
(a) A & B (b) B & C (c) C & D (d) All

183. Volume of air that will remain in the lungs after a normal expiration is called :
(a) Inspiratory Capacity
(b) Expiratory Capacity
(c) Functional Residual Capacity
(d) Vital Capacity

184. What is partial pressure of O_2 in atmospheric air
(a) 104 mmHg (b) 159 mmHg
(c) 40 mmHg (d) 45 mmHg

185. Inspiration is initiated by
(a) Contraction of diaphragm
(b) Relaxation in external intercostal muscles
(c) Contraction in internal intercostal muscles
(d) Both a and c

Section - B

186. Which of the following statements (i – v) are incorrect?
(i) Parapodia are lateral appendages in arthropods used for swimming.
(ii) Radula in molluscs are structures involved in excretion.
(iii) Aschelminthes are dioecious.
(iv) Echinoderm adults show radial symmetry.
(v) Ctenophorans are diploblastic.
(a) (i) and (ii) (b) (i) and (iii)
(c) (i), (iv) and (v) (d) (iii) and (v)

187. Which of the following statements (i – v) are incorrect?
(i) Circulatory system in arthropods is of closed type.
(ii) Parapodia in annelids helps in swimming.
(iii) Phylum mollusca is the second largest animal phylum.
(iv) Aschelminthes are dioecious.
(a) (i) only (b) (iii) only
(c) (i) and (iii) (d) (iii) and (iv)

188. Which one of the following statement regarding coelom of given animals is correct?
(a) Round worms (aschelminthes) are pseudocoelomates.
(b) Molluscs are acoelomates.
(c) Insects are pseudocoelomates.
(d) Flatworms (platyhelminthes) are coelomates.

189. Which of the following statements is incorrect ?
(a) Prawn has two pairs of antennae.
(b) Nematocysts are characteristic feature of the phylum cnidaria.
(c) Millipedes have two pairs of appendages in each segment of the body.
(d) Animals that belong to phylum porifera are exclusively marine.

190. Which of the following statement(s) is/are correct regarding phylum aschelminthes?
(i) The body is circular in cross-section hence the name roundworms.
(ii) Alimentary canal is complete with a well-developed muscular pharynx.
(iii) Sexes are separate (dioecious), i.e., males and females are distinct.
(iv) Nephridia help in osmoregulation and excretion.
(a) (i) and (ii) (b) (iii) and (iv)
(c) (i), (ii) and (iii) (d) All of these

191. Which of the following statement is incorrect?
(a) Platyhelminthes has incomplete digestive system.
(b) In coelenterates, the arrangement of cells is more complex.
(c) *Nereis* is monoecious but earthworms and leeches are dioecious.
(d) Simple and compound eyes are present in the animals of those phylum whose over two-thirds of all named species on earth are arthropods.

192. Match the organisms given in column-I with their common name given in column-II and choose the correct option.

	Column – I (Organisms)		**Column – II (Comman name)**
A.	*Pennatula*	I.	Sea-lily
B.	*Antedon*	II.	Sea- pen
C.	*Echinus*	III.	Sea-urchin
D.	*Cucumaria*	IV.	Sea - cucumber

(a) A – II; C – III; D – I; E – IV
(b) A – II; C – IV; D – I; E – III
(c) A – II; C – I; D – III; E – IV
(d) A – II; C – I; D – III; E – IV

193. In which one of the following the genus name, its two characters and phylum are not correctly matched ?

	Genus	**Two character**	**Phylum**
(a)	Pila	(i) Body segmented	Mollusca
		Mouth with radula	
(b)	Asterias	(ii) Spiny skinned	Echinodermata
		Water vascular system	
(c)	Sycon	(iii) Pore bearing	Porifera
		Canal system	
(d)	Periplaneta	(iv) Jointed appendage	Arthropoda
		Chitinous exoskeleton	

194. Match the terms/feature given in column I with their examples given in column II and select the correct match from the option given below.

	Column – I (Term/Feature)		Column – II (Examples)
A.	Gregarious pest	(i)	*Hirudinaria*
B.	Vector	(ii)	Planaria
C.	Oviparous with indirect development	(iii)	Sepia
D.	Metameres	(iv)	Aedes
E.	High regeneration capacity	(v)	Locust

	A	B	C	D	E
(a)	(i)	(ii)	(iii)	(iv)	(v)
(b)	(iii)	(v)	(ii)	(iv)	(i)
(c)	(iii)	(i)	(v)	(ii)	(iv)
(d)	(v)	(iv)	(iii)	(i)	(ii)

95. Functional residual capacity is equal to
(a) Expiratory reserve volume + residual volume
(b) Tidal volume + Inspiratory reserve volume
(c) Tidal volume + Expiratory reserve volume
(d) Expiratory reserve volume + Inspiratory reserve volume

96. Pneumotaxic centre is present in
(a) Cerebrum (b) Medulla oblongata
(c) Pons (d) Cerebellum

97. The damage of the alveolar walls due to cigarette smoking cause
(a) Asthma
(b) Occupational respiratory disorder
(c) Emphysema
(d) Jaundice

98. Which statement is correct :
(a) A healthy individual has 20-25 gms of haemoglobin in every 100 ml of blood.
(b) Platelets can not be involved in the coagulation of blood.
(c) Basophils are involved in inflammatory reactions.
(d) Lymphocytes are 90-95 percent.

99. Which one is Rh incompatibile marriage :
(a) Rh negative female and Rh positive male
(b) Rh positive female and Rh positive male
(c) Rh negative female and Rh negative male
(d) Rh positive female and Rh negative male

100. At which partial pressure of O2, 100% saturation of Hb occurs
(a) 110 mmHg (b) 95 mmHg
(c) 104 mmHg (d) 60–90 mmHg