E-TECH ACADEMY (NEET & IIT-JEE)

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Sec: XI   **Integrated-A Booster Test-01**   **Date : 30-08-2023**
Time : 3:20 mins   **Max. Marks: 720**

Exam Syllabus

Physics   : Basic Mathematics & Vectors, Kinematics 1D & 2D, Units and Measurement
Chemistry : Mole Concept & Atomic Structure, BOC & Nomenclature
Botany   : Cell the unit of life, Cell Division & Mineral Nutrition
Zoology   : Living World, Animal Kingdom & Body Fluids and Circulation

Part-1 : Physics : Section-A (1-35)

1. A car travels first 1/3 of the distance AB at 30 km/hr, next 1/3 of the distance at 40 km/hr, last 1/3 of the distance at 24 km/hr. Its average speed in km/hr for the whole journey is –

1) 40   2) 35
3) 30   4) 28

2. A particle travels A to M along a straight line with a velocity of 8 m/s and M to A with a velocity of 2 m/s, then the average velocity for the whole journey is –

1) 3.2 m/s   2) -5 m/s
3) -3.2 m/s   4) 0 m/s
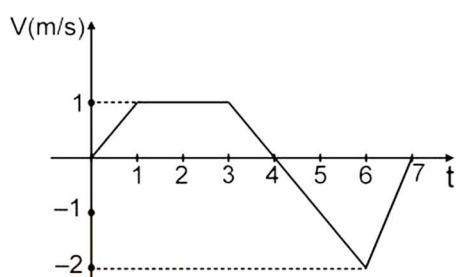
3. A thief is running away on a straight road in jeep moving with a speed of 9 ms^{-1}. A police man chases him on a motor cycle moving at a speed of 10 ms^{-1}. If the instantaneous separation of the jeep from the motorcycle is 100 m, how long will it take for the police to catch the thief

1) 1 s
2) 19 s
3) 90 s   4) 100 s

4. A particle moves along the x-axis in such a way that its coordinate (x) varies with time (t) according to the expression $x = 2 - 5t + 6t^2$ m. The time t is in second. The initial velocity of the particle is

1) -5 m/s
2) -3 m/s
3) 6 m/s   4) 3 m/s

5. The velocity-time graph of a body travelling along a straight line is given below. The distance travelled and displacement of the body are respectively

1) 6m, 0   2) 6m, 3m   3) 6m, - 3m   4) 0, 0

6. A particle is rotating in a circle of radius r. The distance traversed by it in completing half circle would be

1) r   2) πr   3) 2πr   4) Zero

7. A ball is released from a height h above the ground. It takes a time T to reach the ground. Where is the ball at the time T/2
   1) at a height h/4 from the ground
   2) at a height h/2 from the ground
   3) at a height 3h/4 from the ground
   4) none of these

8. The density of a cube is measured by measuring its mass and length of its sides. If the maximum errors in the measurement of its mass and length are 4% and 3% respectively, the maximum error in density is
   1) 1%   2) 7%   3) 5%   4) 13%

9. A rectangular plate has length (2 ±0.02) cm and width (1 ± 0.01) cm. The maximum percentage error in the measurement of its area is:
   1) 1%   2) 2%   3) 3%   4) 5%

10. To keep on object moving in a circle at constant speed requires a force $F \propto m^a v^b r^c$. According to dimensional analysis the a, b, c are:
    1) a = 1,b = 2,c = -1   2) a = 1,b = 2,c = 1
    3) a = 0,b = 2,c = -1   4) a = 1,b = 2,c = 0

11. If y represents distance and x-represents time, dimensions of $\dfrac{d^2 y}{dx^2}$ are:
    1) LT^{-1} 2) $L^2 T^2$ 3) $L^2 T^{-1}$ 4) $L^2 T^{-2}$

12. If $S = \dfrac{1}{3} ft^3$, 'f' has the dimensions of:
    (S = distance, t = time)
    1) $[M^0 L^{-1} T^3]$ 2) $[M^1 L^1 T^{-3}]$
    3) $[M^0 L^1 T^{-3}]$ 4) $[M^0 L^{-1} T^{-3}]$

13. The resultant of the two vectors having magnitude 2 and 3 is 1. What is the magnitude of their cross product
    1) 6   2) 3   3) 1   4) 0

14. The angles which a vector $\hat{i} + \hat{j} + \sqrt{2}\hat{k}$ makes with X, Y and Z axes respectively are
    1) 60°, 60°, 60°   2) 45°, 45°, 45°
    3) 60°, 60°, 45°   4) 45°, 45°, 60°

15. A particle moves towards east with velocity 5 m/s. After 10 seconds its direction changes towards north with same velocity. The average acceleration of the particle is
    1) Zero   2) $\dfrac{1}{\sqrt{2}} m/s^2 N-W$
    3) $\dfrac{1}{\sqrt{2}} m/s^2 N-E$ 4) $\dfrac{1}{\sqrt{2}} m/s^2 S-W$

16. What vector must be added to the two vectors $\hat{i} - 2\hat{j} + 2\hat{k}$ and $2\hat{i} + \hat{j} - \hat{k}$, so that the resultant may be a unit vector along x-axis
    1) $2\hat{i} + \hat{j} - \hat{k}$ 2) $-2\hat{i} + \hat{j} - \hat{k}$
    3) $2\hat{i} - \hat{j} + \hat{k}$ 4) $-2\hat{i} - \hat{j} - \hat{k}$

17. The unit vector along $\hat{i} + \hat{j}$ is
    1) $\hat{k}$ 2) $\hat{i} + \hat{j}$ 3) $\dfrac{\hat{i} + \hat{j}}{\sqrt{2}}$ 4) $\dfrac{\hat{i} + \hat{j}}{2}$

18. A cricketer can throw a ball to a maximum horizontal distance of 100 m. With the same effort, he throws the ball vertically upwards. The maximum height attained by the ball is
    1) 100 m   2) 80 m   3) 60 m   4) 50 m

19. A ball thrown by one player reaches the other in 2 sec. The maximum height attained by the ball above the point of projection will be about
    1) 10 m   2) 7.5 m   3) 5 m   4) 2.5 m

20. A projectile is fired at 30° with momentum p. Neglecting friction, the change in kinetic energy when it returns to the ground will be
    1) Zero   2) 30%   3) 60%   4) 100%

21. **The maximum horizontal range of a projectile is 400 m. The maximum height attained by it will be**
   1) 100 m   2) 200 m   3) 400m   4) 800m

22. **Two projectiles A and B are thrown with the same speed such that A makes angle q with the horizontal and B makes angle q with the vertical, then**
   1) Both must have same time of flight
   2) Both must achieve same maximum height
   3) A must have more horizontal range than B
   4) Both may have same time of flight

23. **A particle is projected with a velocity v such that its range on the horizontal plane is twice the greatest height attained by it. The range of the projectile is (where g is acceleration due to gravity)**
   1) $\dfrac{4v^2}{5g}$ 2) $\dfrac{4g}{5v^2}$ 3) $\dfrac{v^2}{g}$ 4) $\dfrac{4v^2}{\sqrt{5g}}$
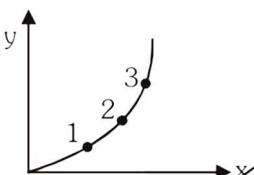
24. **Two projectiles A and B are projected with same speed at angles 30° and 60° to horizontal, then choose the wrong statement? (Symbols have their usual meaning)**
   1) $R_A = R_B$ 2) $H_B = 3H_A$
   3) $\sqrt{3}\,T_B = T_A$ 4) All of these

25. **As θ increases from 0° to 90°, the value of cos θ:**
   1) Increases
   2) Decreases
   3) Remains constant
   4) First decreases then increases.

26. **The slope of graph as shown in figure at points 1, 2 and 3 is m_1, m_2 and m_3 respectively then**
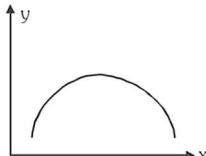
   1) $m_1 > m_2 > m_3$ 2) $m_1 < m_2 < m_3$
   3) $m_1 = m_2 = m_3$ 4) $m_1 = m_3 > m_2$

27. **What is the maximum number of rectangular components into which a vector can be split in its own plane?**
   1) 2   2) 3   3) 4   4) Infinite

28. **Magnitude of slope of the shown graph.**

   1) First increases then decreases
   2) First decreases then increases
   3) Increases
   4) Decreases

29. **If the sum of two unit vectors is a unit vector, then the magnitude of their difference is :**
   1) $\sqrt{2}$ 2) $\sqrt{3}$ 3) $\dfrac{1}{\sqrt{2}}$ 4) $\sqrt{5}$

30. **A unitless quantity**
   1) Does not exist
   2) Always has a nonzero dimension
   3) Never has a nonzero dimension
   4) May have a nonzero dimension
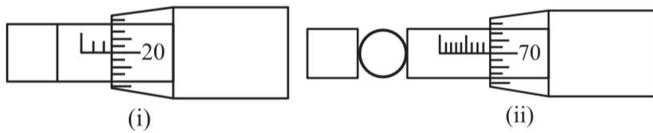
31. **An experiment measures quantities a, b and c, and X is calculated from $X = ab^2/c^3$. If the percentage error in a, b and c are ±1%, ± 3% and ± 2% respectively, the percentage error in X will be –**
   1) ±13%   2) ±7%   3) ±4%   4) ±1%

32. **Which of the following is incorrect statement**
   1) A dimensionally correct equation may be correct
   2) A dimensionally correct equation maybe incorrect

3) A dimensionally incorrect equation may be correct

4) A dimensionally incorrect equation is incorrect

33. **Least count of main scale of screw gauge is 1 mm and there are 100 equal calibration on circular scale, circular scale move 1 part main scale on 1 rotation of circular scale, then what will be the diameter of ball as shown in diagram (i) and (ii)?**

(i)   (ii)

1) 8.70 mm   2) 6.70 mm

3) 6.50 mm   4) None

34. **A vernier callipers has 20 divisions on the vernier scale which coincide with 19 divisions on the main scale. The least count of the instrument is 0.1 mm. The main scale divisions are of**

1) 0.5 mm   2) 1mm   3) 2 mm   4) 1/4 mm

35. **A screw gauge has least count of 0.01 mm and there are 50 divisions in its circular scale. The pitch of the screw gauge is:**

1) 0.25 mm   2) 0.5 mm

3) 1.0 mm   4) 0.01 mm

Part-2 : Physics : Section-B (36-50)
Answer Any Ten Questions
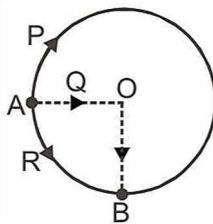
36. **A student measured the diameter of a small steel ball using a screw gauge of least count 0.001 cm. The main scale reading is 5 mm and zero of circular scale division coincides with 25 divisions above the reference level. If screw gauge has a zero error of -0.004 cm, the correct diameter of the ball is:**

1) 0.521 cm   2) 0.525 cm

3) 0.053 cm   4) 0.529 cm
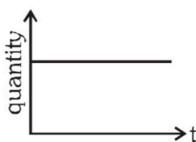
37. **The vector $\vec{B} = 5\hat{i} + 2\hat{j} - S\hat{k}$ is perpendicular to the vector $\vec{A} = 3\hat{i} + \hat{j} + 2\hat{k}$ if S =**

1) 1   2) 4.7   3) 6.3   4) 8.5

38. **If $\vec{P} \times \vec{Q} = \vec{R}$, then which of the following statements is not true?**

1) $\vec{R} \perp \vec{P}$ 2) $\vec{R} \perp \vec{Q}$

3) $\vec{R} \perp (P + \vec{Q})$ 4) $\vec{R} \perp (P \times \vec{Q})$

39. **What is the component of $(3\hat{i} + 4\hat{j})$ along $(\hat{i} + \hat{j})$?**

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

3) $\dfrac{5}{2}(\hat{j} + \hat{i})$ 4) $\dfrac{7}{2}(\hat{j} + \hat{i})$

40. **If $|\vec{a}| = 11, |\vec{b}| = 23, |\vec{a} - \vec{b}| = 30$, then $|\vec{a} + \vec{b}|$ is:**

1) 10   2) 20   3) 30   4) 40

41. **A man walks 30 m towards north, then 20 m towards east and in the last $30\sqrt{2}$ m towards south - west. The displacement from origin is:**

1) 10 m towards west

2) 10 m towards east

3) $60\sqrt{2}$ m towards north west

4) $60\sqrt{2}$ m towards east north

42. **A man walks for some time T with velocity (v) due east. Then he walks for same time 't' with velocity (v) due north. The average velocity of the man is:**

1) 2v   2) $\sqrt{2}\,v$ 3) v   4) $\dfrac{v}{\sqrt{2}}$

43. **The displacement of a particle is represented by the following equation: $s = 3t^3 + 7t^2 + 5t + 8$ where s is in metres and t in seconds. The acceleration of the particle at t = Is is :-**

1) 14 m/s^2 2) 18 m/s^2 3) 32 m/s^2 4) zero

44. Three particles P, Q and R are situated at point A on the circular path of radius 10 m. All three particles move along different paths and reach point B as shown in figure. Then the ratio of distance traversed by particles P and Q is :

1) $\dfrac{3}{4}$ 2) $\dfrac{1}{3}$ 3) $\dfrac{3\pi}{4}$ 4) $\dfrac{\pi}{3}$

45. In the graph shown in fig. time is plotted along x-axis. Which quantity associated with a projectile motion is plotted along the y - axis?


1) kinetic energy   2) momentum

3) horizontal velocity   4) none of the above

46. The speed of a projectile at its maximum height is $\dfrac{\sqrt{3}}{2}$ times of its initial speed u' of projection. Its range on the horizontal plane is :

1) $\dfrac{\sqrt{3}u^2}{2g}$ 2) $\dfrac{u^2}{2g}$ 3) $\dfrac{3u^2}{2g}$ 4) $\dfrac{3u^2}{g}$
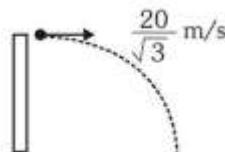
47. A body starts from rest and with a uniform acceleration of 10 ms^{-2} for 5 seconds. During the next 10 seconds it moves with uniform velocity. The total distance travelled by the body is :-

1) 100 m 2) 125 m 3) 500 m 4) 625 m

48. Three particles A, B and C are projectile from the same point with the same initial speeds making angles 30°, 45° and 60° respectively with the horizontal. Which of the following statements are correct?

1) A, B and C have unequal ranges

2) Ranges of A and C are equal and less than that of B

3) Ranges of A and C are equal and greater than that of B

4) A, B and C have equal ranges

49. A particle is projected horizontally with a speed of $\dfrac{20}{\sqrt{3}}$ m/s, from some height at t = 0. At what time will its velocity make 60° angle with the initial velocity

1) 1 sec 2) 2 sec 3) 1.5 sec 4) 2.5 sec

50. Two stones are projected with the same speed but making different angles with the horizontal. Their ranges are equal. If the angle of projection of one is $\dfrac{\pi}{3}$ and its maximum height is y_1 then the maximum height of the other will be:

1) $3y_1$ 2) $2y_1$ 3) $\dfrac{y_1}{2}$ 4) $\dfrac{y_1}{3}$

Part-1 : Chemistry : Section-A (51-85)

51. The number of mole of ammonia in 4.25 g of ammonia is :

1) 0.425   2) 0.25

3) 0.236   4) 0.2125

52. Number of atoms in 560 g of Fe (atomic mass 56 gmol^{-1}) is :

1) Twice that in 70 g N

2) Half that in 10 g of H

3) Both (1) and (2)

4) Twice of 240 g C

53. How many moles of electron weigh one kilogram

1) 6.023×10^{23} 2) $\dfrac{1}{9.108} \times 10^{31}$

3) $\dfrac{6.023}{9.108} \times 10^{54}$ 4) $\dfrac{1}{9.108 \times 6.023} \times 10^{8}$

54. A gas is found to have the formula $(CO)_x$. It's VD is 70 the value of x must be :

1) 7   2) 4   3) 5   4) 6

55. A hydrocarbon contains 75% of carbon. Then its molecular formula is :

1) CH_4 2) C_2H_4 3) C_2H_6 4) C_2H_2

56. Insulin constans 3.4% sulphur. The minimum mol. wt. of insulin is –

1) 941.176   2) 944

3) 945.27   4) None

57. For the reaction $2P + Q \rightarrow R$, 16 mol of P and excess of Q will produce :

1) 8 mol of R   2) 5 mol of R

3) 4 mol of R   4) 13 mol of R

58. For the complete combustion of 4 litre ethane, how much oxygen is required?

1) 14 litre   2) 4 litre

3) 8 litre   4) 12 litre

59. The weight of $CaCO_3$ obtained by heating 200 kg of 95% pure lime stone is :

1) 98.4 kg   2) 106.4 kg

3) 112.8 kg   4) 122.6 kg

60. A solution of $FeCl_3$ is $\dfrac{M}{30}$ its molarity for Cl^- ion will be :

1) $\dfrac{M}{90}$ 2) $\dfrac{M}{30}$ 3) $\dfrac{M}{10}$ 4) $\dfrac{M}{5}$

61. The atomic weights of two elements A and B are 40u and 80u respectively. If x g of A contains y atoms, how many atoms are present in 2x g of B?

1) $\dfrac{y}{2}$ 2) $\dfrac{y}{4}$ 3) y   4) 2y
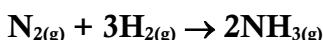
62. A mixture of gases contains H_2 and O_2 gases in the ratio of 1 : 4 (w/w). What is the molar ratio of the two gases in the mixture ?

1) 4 : 1   2) 16 : 1   3) 2 : 1   4) 1 : 4

63. The number of moles of hydrogen molecules required to produce 20 moles of ammonia through Haber's process is :
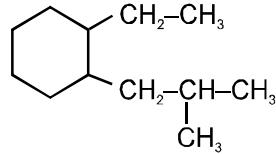
1) 40   2) 10   3) 20   4) 30

64. Which has the maximum number of molecules among the following?

$N_{2(g)} + 3H_{2(g)} \rightarrow 2NH_{3(g)}$
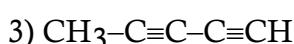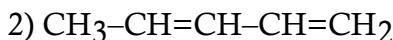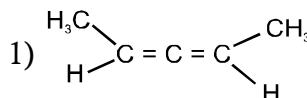
1) 44g CO_2 2) 48 g O_3

3) 8 g H_2 4) 64 g SO_2

65. The number of primary hydrogen in the following structure are respectively:

1) 12   2) 9   3) 3   4) 14
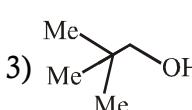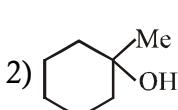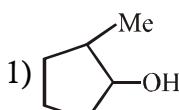
66. Which of the following compound has sp, and sp^3 hybrid carbon atoms ?

1)

2) $CH_3-CH=CH-CH=CH_2$

3) $CH_3-C\equiv C-C\equiv CH$

4) $CH_2=CH-C\equiv CH$

67. The alicyclic compound is :

1) Cyclohexane   2) Benzene

3) Pyrrole   4) Hexane

68. Primary (1°) alcohol is :

1)

2)

3)
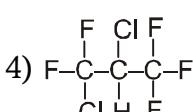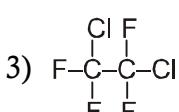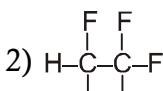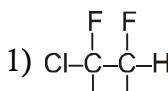
4) All of these
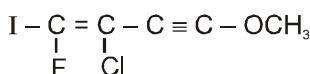
69. IUPAC name of $(CH_3)_2CHCH(CH_3)_2$ is :

1) 2,2-Dimethylbutane

2) 2,3-Dimethylbutane

3) 2,4-Dimethylbutane

4) 1-Methylpentane

**70. What is the correct chemical formula for 1,2– Dichloro tetrafluoroethane?**

1) $Cl-\underset{\underset{Cl}{|}}{\overset{\overset{F}{|}}{C}}-\underset{\underset{Cl}{|}}{\overset{\overset{F}{|}}{C}}-H$

2) $H-\underset{\underset{Cl}{|}}{\overset{\overset{F}{|}}{C}}-\underset{\underset{Cl}{|}}{\overset{\overset{F}{|}}{C}}-F$

3) $F-\underset{\underset{F}{|}}{\overset{\overset{Cl}{|}}{C}}-\underset{\underset{F}{|}}{\overset{\overset{F}{|}}{C}}-Cl$

4) $F-\underset{\underset{Cl}{|}}{\overset{\overset{F}{|}}{C}}-\underset{\underset{H}{|}}{\overset{\overset{Cl}{|}}{C}}-\underset{\underset{F}{|}}{\overset{\overset{F}{|}}{C}}-F$
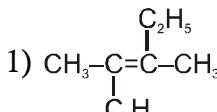
71. The correct IUPAC name of the given compound is :

$I-\underset{\underset{F}{|}}{C}=\underset{\underset{Cl}{|}}{C}-C\equiv C-OCH_3$
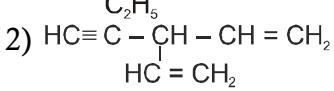
1) 3–Chloro–1–fluoro–1–iodo–4–methoxybut–1– en–3–yne

2) 4–Methoxy–2–chloro–1–fluoro–1–iodobutenyne

3) 3–Chloro–4–fluoro–4–iodo–1– methoxybutenyne

4) 2–Chloro–1–fluoro–1–iodo–4–methoxybutenyne
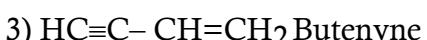
72. Which IUPAC name is correct :

1) $CH_3-\underset{\underset{C_2H_5}{|}}{\overset{\overset{C_2H_5}{|}}{C}}=C-CH_3$ 2,3–Diethylbutene

2) $HC\equiv C-\underset{\underset{HC=CH_2}{|}}{CH}-CH=CH_2$ 2-Ethynylpenta-1, 4-diene

3) $HC\equiv C- CH=CH_2$ Butenyne
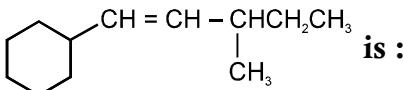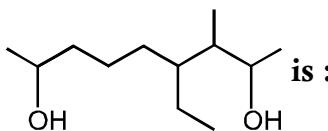
4) $CH_3-CH=CH-C\equiv CH$ Pent–2–en–3–yne

73. IUPAC name of the compound

 is :
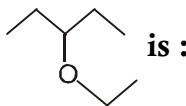
1) 1-Cyclohexyl-3-methylpent-1-ene

2) 3-Methyl-5-cyclohexylpent-1-ene

3) 1-Cyclohexyl-3-ethylbut-1-ene

4) 1-Cyclohexyl-3,4-dimethylbut-1-ene

74. The correct IUPAC name of the compound

 is :

1) 4-Ethyl-3-methylnonane-2, 8- diol

2) 6-Ethyl-7-methylnonane-2, 8-diol

3) 5-Ethyl-1, 6, 7-trimethylheptane-1, 7-diol

4) 4-Ethyl-2-methylnonane-2, 7-diol

75. The correct IUPAC name of the compound

 is :
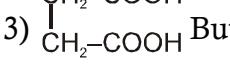
1) 2-Ethoxypentane   2) 3-Ethoxypentane

3) 3-Pentoxyethane   4) 3-Ethylpentan-3-ol
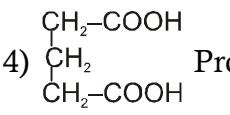
76. Which is the incorrect IUPAC name :

1) $\underset{COOH}{\overset{COOH}{|}}$ Ethanedioic acid

2) $\underset{COOH}{\overset{\overset{COOH}{|}}{CH_2}}$ Propanedioic acid

3) $\underset{CH_2-COOH}{\overset{CH_2-COOH}{|}}$ Butanedioic acid

4) $\underset{\underset{CH_2-COOH}{|}}{\overset{\overset{CH_2-COOH}{|}}{CH_2}}$ Propane-1,3-dicarboxylic acid
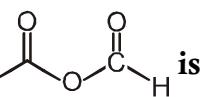
77. The correct IUPAC name of the $H-\overset{\overset{O}{\|}}{C}-\overset{\overset{O}{\|}}{C}-\overset{\overset{O}{\|}}{C}-OH$ **is :**

1) 3-Aldo-2-oxopropanoic acid
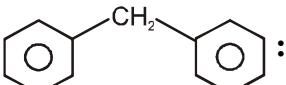
2) 2,3-Dioxopropanoic acid

3) 1-Hydroxy propane-1,2,3-trione

4) 2-Aldo-2-Keto methanoic acid

78. The correct IUPAC name of is

1) Butane-2, 4-dione

2) Formyl ethanoate

3) Acetic anhydride

4) Ethanoic methanoic anhydride

79. IUPAC name of the :

1) Methyldibenzene

2) Isophenyl methane

3) Dimethylbenzene   4) Diphenyl methane

80. The correct IUPAC name of   HOOC–CH–COOH
                                   |
                                COOH
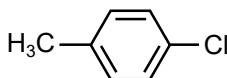
is:

1) Tricarboxymethane

2) Propanetrioic acid

3) Tributanoic acid

4) Methanetricarboxylic acid

81. The IUPAC name of $CH_3–CH_2–NH–CH_3$ is :-

1) Methylethylamine

2) 1-methylaminoethane

3) N-methylethanamine

4) N-ethylmethanamine

82. The IUPAC name(s) of the following compound is (are)

1) 4-methylchlorobenzene

2) 1-chlorotoluene

3) 1-chloro-4-methylbenzene

4) 1-methyl-4-chlorobenzene

83. In $^{80}_{35}Br$, the number of protons, neutrons, and electrons are-

1) 25, 45, 45   2) 35, 45, 35

3) 45, 45, 35   4) 80, 35, 35

84. The Vividh Bharati station of All India Radio, Delhi, broadcasts on a frequency of 1,368 kHz (kilohertz). The wavelength of the electromagnetic radiation emitted by the transmitter and the part of the electromagnetic spectrum does it belong are-

1) 319.3, Microwave

2) 219.3, Radiowave

3) 219.3, Ultraviolet Wave

4) 249.3, Radiowave
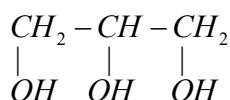
85. A 100-watt bulb emits monochromatic light of wavelength 400 nm. The number of photons emitted per second by the bulb is-

1) 40.12×10^{20} s^{-1} 2) $2.2.012 \times 10^{21}$ s^{-1}

3) 2.012×10^{20} s^{-1} 4) 20.12×10^{21} s^{-1}

Part-2 : Chemistry : Section-B (86-100)

Answer Any Ten Questions

86. The IUPAC name of glycerine is-

$$CH_2 - CH - CH_2$$
$$\quad | \qquad | \qquad |$$
$$OH \quad OH \quad OH$$

1) Glycerol

2) 1, 2-Ethanediol

3) Propane-1,2,3- triol

4) 1, 2, 3-Trihydroxypropane

87. The energy and the radius of the first orbit of He^+ are respectively-

1) -8.72×10^{-18}J; 0.02645 nm

2) 8.72×10^{-18} J; 0.02645 nm

3) -7.82×10^{-18} J; 0.03655 nm

4) 7.82×10^{-18} J; 0.03655 nm

88. Which of the following conclusions could not be derived from Rutherford's α-particle scattering experiment?

1) Most of the space in the atom is empty.

2) The radius of the atom is about 10^{-10} m while that of a nucleus is 10^{-15} m.

3) Electrons move in circular path of fixed energy called orbits

4) Electrons and the nucleus are held together by electrostatic forces of attraction.
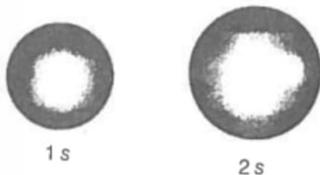
89. **Match the following:**

Column I	Column-II
(a) n = 2, l =1	i = 4s
(b) n = 4, l = 0	ii = 2p
(c) n = 5, l = 3	iii = 3d
(d) n = 3, l = 2	iv = 5f

1) a = iv; b = ii; c = i; d = iii

2) a = ii; b = iii; c = iv; d = i

3) a = ii; b = i; c = iv; d = iii

4) a = iii; b = ii; c = i; d = iv

90. **The probability density plots of 1s and 2s orbitals diagrams are given below**

1 s

2 s

The density of dots in a region represents the probability density of finding electrons in the region.

On the basis of the above diagram which of the following statements is **incorrect?**

1) 1 s and 2s orbitals are spherical in shape

2) The probability of finding the electron is maximum near the nucleus

3) The probability of finding the electron at a given distance is equal in all directions

4) The probability density of electrons for 2s orbital decreases uniformly as the distance from the nucleus increases

91. **Which of the following options does not represent ground state electronic configuration of an atom?**

1) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^8 4s^2$

2) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^9 4s^2$

3) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1$

4) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$

92. **Comprehension given below is followed by some multiple choice questions. Each question has one correct option.**

Choose the correct option.

In the modern periodic table, elements are arranged in order of configuration. Depending upon the type of orbitals receiving the last electron, the elements in the periodic table have been divided into four block, viz s, p, d and f.

The modern periodic table consists of 7 periods and 18 groups. Each period begins with the filling of a new energy shell. In accordance with the Aufbau principle, the seven periods (1 to 7) have 2, 8, 8,18,18, 32 and 32 elements respectively.

The seventh period is still incomplete. To avoid the periodic table being too long, the two series of f-block elements, called lanthanoids and actinoids are placed at the bottom of the periodic table

The element with atomic number 57 belongs to

1) s-block   2) p-block

3) d-block4) f-block

93. **Maximum number of orbitals in an atom which can have the quantum numbers**

n = 3, l = 2, m = + 2 are:

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

94. **The orientation of an atomic orbital is governed by :**

1) azimuthal quantum number

2) spin quantum number

3) magnetic quantum number

4) principal quantum number

95. **Maximum number of electrons in a subshell of an atom in determined by the following:**

1) $4l + 2$ 2) $2l + 1$

3) $4l - 2$ 4) $2n^2$

96. **Which of the following is not permissible set of quantum numbers of electrons in an atom?**

1) $n = 4, l = 0, m = 0, s = -1/2$

2) $n = 5, l = 3, m = 0, s = +1/2$

3) $n = 3, l = 3, m = 0, s = -1/2$

4) $n = 3, l = 2, m = -2, s = -1/2$

97. **If n = 6, the correct sequence for filling of electrons will be :**

1) $ns \to (n-2)f \to (n-1)d \to np$

2) $ns \to (n-1)d \to (n-2)f \to np$

3) $ns \to (n-2)f \to np \to (n-1)d$

4) $ns \to np(n-1)d \to (n-2)f$

98. **Maximum number of electrons in a subshell having n = 4 and *l* = 3 are :**

1) 14   2) 16   3) 10   4) 12

99. **Which of the following combinations of quantum numbers is allowed ?**

	n	l	m	m_S
1)	3	2	1	0
2)	2	0	0	$-\frac{1}{2}$
3)	3	-3	-2	$+\frac{1}{2}$
4)	1	0	1	$+\frac{1}{2}$

100. **The electrons, identified by quantum numbers n and *l* (i) n = 4, *l* = 1 (ii) n = 4, *l* = 0 (iii) n = 3, *l* = 2 (iv) n = 3, *l* = 1 can be placed in order of increasing energy, from the lowest to highest, as**

1) (iv) < (ii) < (iii) < (i)   2) (ii) < (iv) < (v) < (iii)

3) (i) < (iii) < (ii) < (iv)   4) (iii) < (i) < (iv) < (ii)

PART-1 : Botany : Section-A (101-135)

101. **Growing plant in nutrient solution in complete absence of soil was first demonstrated by**

1) Charles Darwin, 1858

2) Julius von Sachs, 1860

3) Agnes Arber. 1938

4) Hugo von Mohl, 1850

102. **In which of the following all three options are macronutrients?**

1) Iron, copper. Molybdenum

2) Molybdenum, magnesium, manganese

3) Nitrogen, sulphur, phosphorus

4) Boron, zinc, manganese

103. **Choose the correct option for the match given below about the element which acts as activator of certain enzymes.**

Activator element   Enzyme

1) Mg^{2+} - RuBisCO, PEP Carboxylase

2) Zn^{2+} - Alcohol dehydrogenase

3)   Mo   - Nitrate reductase

4)   All of the above

104. **The mineral element which helps in protein synthesis opening and closing of stomata and activation of enzymes is**

1) Ca^{2+} 2) K^+ 3) Mg^{2+} 4) Fe^{3+}

105. **Element present in middle lamella is**

1) Zn   2) Cu   3) Ca   4) K

106. **Which of the following elements cause necrosis due to their deficiency?**

1) N, K and S   2) N, K, Mg and Fe

3) Mn, Zn and Mo   4) Ca, Mg, Cu and K

107. **Which of the following is a limiting nutrient for both natural and agricultural ecosystems?**

1) Carbon   2) Nitrogen

3) Sulphur   4) Hydrogen

108. **Observe the steps given below for nitrification**

$$2NH_3 + 3O_2 \rightarrow 2NO_2^- + 2H^+ + 2H_2O$$

$$2NO_2^- + O2 \rightarrow 2NO_3^-$$

The steps given above are carried out by

1) Nitrobacter   2) Nitrosomonas

3) Nitrococcus   4) All of these

109. **Which of the following bacteria reduces nitrate in soil into nitrogen?**

1) Nitrobacter   2) Nitrococcus

3) Thiobacillus   4) Nitrosomonas

110. **The two most abundant amides found in plants are**

1) Asparagine and glutamine

2) Lysine and asparagine

3) Glutamine and lysine

4) None of the above

111. **Assertion (A):** Magnesium is important in photosynthesis and carbohydrate metabolism.

Reason (R): Mg^{2+} is involved in the synthesis of nucleic acids.

1) If both A and R are true and R is the correct explanation of A

2) If both A and R are true, but R is not the correct explanation of A

3) If A is true, but R is false

4) If A is false, but R is true

112. **Assertion (A):** Nitrogen-fixing bacteria of legume root nodules survive in oxygen depleted cells.

Reason (R): Leghaemoglobin completely removes oxygen from nodule cells.

1) If both A and R are true and R is the correct explanation of A

2) If both A and R are true, but R is not the correct explanation of A

3) If A is true, but R is false

4) If A is false, but R is true

113. **Choose the correct option.**

1) Amides arc the transported forms of nitrogen as they have more nitrogen

2) Legumes of tropical origin (e.g. soybean) transport ureides

3) The host produces globin part and bacterial symbiont produces haem part of leghaemoglobin (N_2-fixing pigment)

4) All of the above

114. **Consider the following statements about hydroponics and choose the correct pair of statements from the given options.**

I. Hydroponics technique is useful in areas having infertile and dry soils.

II. Hydroponics can regulate pH, optimum for a particular crop.

III. It reduces the labour cost of growing crops.

IV. It increases the problem of weeding,

1) I and IV   2) I and II

3) I and III   4) Only I

115. **Nodule formation involves a sequence of multiple interactions between Rhizobium and roots of the host plant. The principal stages in the nodule formation are given below.**

I. A mature nodule establishes a direct vascular connection with the host for exchange of nutrients.

II. Root hair curls and the bacteria invade the root hair.

III. Rhizobia multiply and colonise the surrounding of roots and get attached to epidermal and root hair cells.

IV. The infection thread is produced earring the bacteria and grows into the cortex of the root.

V. The bacteria get modified into rod-shaped bacteroids and cause inner cortical layer and pericycle to div ide to form nodule.

The correct sequence is

1) III → II→ IV → IV 2) III → II→ IV→ V→ I

3) IV→V→ III→II→ I 4) I → III → V→ II→ IV

116. **'Omnis cellula-e-cellula, (all cells arise from pre-existing cells). Who gave this concept and modified the cell theory?**

1) Schleiden and Schwann

2) Virchow

3) Robert Brown

4) Leeuwenhoek

117. **Which of the following nucleic acids is present in an organism having 70S ribosomes only?**

1) Single-stranded DNA with protein coat

2) Double-stranded circular naked DNA

3) Double-stranded DNA enclosed in nuclear membrane

4) Double-stranded circular DNA with histone proteins

118. **Glycocalyx differs in composition and thickness among different bacteria. It could be a loose sheath called the……or it may be thick and tough, called the…..**

1) capsule; slime layer

2) slime layer; capsule

3) mesosome; slime layer

4) capsule, mesosome

119. **Which one of the following does not differ in E. coli and Chlamydomonas?**

1) Ribosomes　　2) Chromosomal organisation

3) Cell wall　　　4) Cell membrane

120. **If you remove the fimbriae from the bacterial cell, which of the following would you expect to happen?**

1) The bacteria could no longer swim

2) The bacteria would not adhere to the host tissue

3) Transportation of molecules across the membrane would stop

4) The shape of bacteria would change

121. **Many ribosomes may associate with a single mRNA to form multiple copies of a polypeptide simultaneously. Such string of ribosomes are termed as**

1) plastidome

2) polyhedral bodies

3) polysome　　　4) nucleosome

122. **Select the mismatch.**

1) Gas vacuoles　　　— Green bacteria cells

2) Large central vacuoles —Animal cells

3) Protists　　　　— Eukaryotes

4) Methanogens　　— Prokaryotes

123. **The main organelle involved in modification and routing of newly synthesised proteins to their destination is**

1) mitochondria　　2) endoplasmic reticulum

3) lysosome　　　　4) chloroplast

124. **Smooth endoplasmic reticulum acts as a major site for the synthesis of**

1) lipids and steroids

2) proteins

3) ribosomes

4) DNA

125. **Choose the incorrect pair.**

1) Golgi bodies - Densely stained reticular structure near the nucleus

2) Cisternae - Circular, fixed in number

3) Forming face -Convex cis

4) Maturing face Concave trans

126. **Which of the following is correct regarding the origin of lysosome?**

1) Endoplasmic reticulum→ Golgi bodies→Lysosomes

2) Golgi bodies→ Endoplasmic reticulum→ Lysosomes

3) Nucleus Golgi bodies → Lysosomes

4) Mitochondria → Endoplasmic reticulum→ Golgi bodies → Lysosomes

127. **The colourless plastids are**

1) chloroplasts   2) chromoplasts

3) leucoplasts   4) lymphoplasts

128. **Who discovered ribosomes as dense particles under the electron microscope?**

1) George Palade   2) Kolliker

3) Boveri   4) Strasburger

129. **Choose the incorrect pair.**

1) Cilium or Flagellum - 9 + 2 morphology

2) Axonema - Core of cilium or flagellum

3) Basal body - Centriole-like structure

4) Radial spokes – Connect two microtubules

130. **Non-membranous nucleoplasmic structures in nucleus are the site for active synthesis of**

1) protein synthesis   2) mRNA

3) rRNA   4) rRNA

131. **Which one is only found in plant?**

1) Ribosomc   2) Mitochondria

3) Glyoxysomes   4) Lysosome

132. **Assertion (A)** Chloroplast is a cell organelle.

Reason (R) An organelle is a distinct part of cell which has a particular structure and function.

1) If both A and R an: true and R is the correct explanation of A

2) If both A and R arc true, bin R is not the correct explanation of A

3) If A is true, but R is false

4) If A is false, but R is true

133. **Assertion (A)** Mitochondria and chloroplast are semiautonomous organelles.

Reason (R) These are formed by the division of pre-existing organelles as well as they contain DNA. but lack protein synthesising machinery.

1) If both A and R an: true and R is the correct explanation of A

2) If both A and R arc true, bin R is not the correct explanation of A

3) If A is true, but R is false

4) If A is false, but R is true

134. **Which of the following statements is incorrect about lysosomes?**

1) The hydrolytic enzymes of lysosomes are active under acidic pH

2) Lysosomes are membrane bound structures

3) Lysosomes are formed by the process of packaging in the endoplasmic reticulum

4) Lysosomes have numerous hydrolytic enzymes

135. **Mesosomes are the infoldings of cell membrane, which**

I. help in cell wall formation. DNA replication and respiration.

II. increase the surface area of plasma membrane.

III. are present in both prokaryotic and eukaryotic cells. Which of the following option is most

appropriate?

1) II and III are correct

2) I and II arc correct

3) I and III are correct

4) I, II and III are correct

PART-2 : Botany : Section-B (136-150)

Answer Any Ten Questions

136. The cell cycle of mammalian cell and yeast, respectively, takes about

1) 24 hrs, 90 min   2) 60 min cach

3) 30 min, 24 days   4) 90 min, 24 hrs

137. During cell growth, DNA synthesis takes place in

1) S-phase   2) G_1-phase

3) G_2-phase   4) M-phase

138. The centriole moves to opposite poles of the cell in which stage?

1) Prophase   2) Metaphase

3) Anaphase   4) Telophase

139. Spindle fibres attach on to

1) kinetochore of the chromosome

2) centromere of the chromosome

3) kinetosome of the chromosome

4) telomere of the chromosome

140. Anaphase Promoting Complex (APC) is a protein degradation machinery necessary for proper mitosis of animals cells. If APC is defective in a human cells, which of the following is expected to occur?

1) Chromosomes will not condense

2) Chromosomes will be fragmented

3) Chromosomes will not segregate

4) Recombination of chromosome arms will occur

141. During which phase of mitosis the chromosomes may appear in the V, L, J, or I-shaped structures?

1) Prophase   2) Metaphase

3) Anaphase   4) Telophase

142. When karyokinesis is not followed by cytokinesis, it results in the formation of

1) uninucleate cells   2) multinucleate cells

3) undifferentiated cells 4) diploid cells

143. Meiosis involves two cycles of

1) Cell division   2) Nuclear divisions

3) DNA replication   4) Both (a) and (b)

144. Longest phase of meiosis is

1) prophase-I   2) prophase-II

3) anaphase-I   4) metaphase-II

145. Synaptonemal complex is formed

1) during anaphase

2) during metaphase

3) during prophase-II

4) during prophase-1 of meiosis

146. The enzyme involved in the process of crossing over

1) crossinase   2) DNA ligase

3) recombinase   4) DNA polymerase

147. The stage during which separation of the paired homologous chromosomes begins is

1) diakinesis   2) diplotene

3) pachytene   4) zygotene

148. The X-shaped structures observed during diplotene are

1) chiasmata

2) synaptonemal complex

3) bivalent complex

4) None of these

149. **Assertion (A)** Meiotic division occurs in reproductive cells.

Reason (R) Synapsis occurs during zygotene of meiosis.

1) If both A and R are true and R is the correct explanation of A

2) If both A and R are true, but R is not the correct explanation of A

3) If A is true, but R is false

4) If A is false, but R is true

150 **Arrange the following events of meiosis in correct sequences.**

I. Crossingover.

II. Synapsis.

III. Terminalisation of chiasmata.

IV. Disappearance of nucleolus.

1) II, I, IV and III   2) II, I, III and IV

3) I, II, III and IV   4) II, III, IV and I

Part-1 : Zoology : Section-A (151-185)

151. **In Amoeba, reproduction is synonymous with**

1) digestion   2) growth

3) locomotion   4) none of these

152. **Match Column-I with Column-II and choose the correct option from the codes given below.**

	Column-I (Organism)		Column-II (Method of reproduction)
a	Planaria	(1)	Fragmentation
b	Hydra	(2)	Regeneration
c	Fungi	(3)	Binary fission
d	Amoeba	(4)	Budding

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

4)   1   3   2   4

153. **Match the Column-I with Column-II and choose the correct option from the codes given below.**

	Column-I		Column-II
a	Biodiversity	(1)	Correct descriptionof an organism
b	Nomenclature	(2)	The variety of living organisms
c	Identification	(3)	A system of providing a name with two components
d	Binomial nomenclature	(4)	Naming of living organisms

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

154. **Match Column-I with Column-II and choose the correct option from the codes given below.**

	Column-I		Column-II
a	Mammalia	(1)	Specific epithet
b	*Mangifera*	(2)	Branch of study
c	*indica*	(3)	Taxa
D	Systematics	(4)	Generic name

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

155. **Solanum includes species**

1) nigrum

2) melongena

3) tuberosum

4) all of these

156. Biological museums have collection of

1) preserved plant specimens

2) preserved animal specimens

3) live plants and animals

4) both A and B

157. Each statement of the key is called a

1) couplet   2) lead

3) monograph   4) none of these

158. Which of the following characteristics is correct for reptilia?

1) Body covered with dry and cornified skin, scales over the body are epidermal, they do not have external ears.

2) Body is covered with moist skin and is devoid of scales, the ear is represented by a tympanum, alimentary canal, urinary and reproductive tracts open into a common cloaca.

3) Fresh water animals with bony endoskeleton and air-bladder regulate buoyancy.

4) Marine animals with cartilaginous endoskeleton and body is covered with placoid scales.

159. Match the types of animals given in column I with their examples given in column II and choose the correct option.

Column -I (Types of animals)	Column –II (Examples)
A. Limbless reptiles	I. Elephant
B. Jawless vertebrates	II. Lamprey
C. Flightless bird	III. Ichthyophis
D. Largest terrestrial animal	IV Ostrich
E. Limbless amphibia	V Cobra

1) A-II; B-V; C-IV; D-I; E-III

2) A - V; B - II; C - IV; D -I; E – III

3) A -V; B -II; C-I; D-IV; E-III

4) A -V; B-IV; C-II; D-I; E-III

160. Match the phylum given in column - 1 with the special features present in them given in column - II and choose the correct option.

Column -I (Phylum)	Column- II (Special features present)
A. Porifera	I. Mammary glands
B. Mollusca	II. Cloaca
C. Ctenophora	III. Choanocytes
D. Amphibia	IV. Radula
E. Mammalia	V. Comb plates

1) A-III; B-IV; C-V; D-II; E-I

2) A -IV; B-III; C-V; D-II; E-I

3) A-III; B-IV; C-II; D-V; E-I

4) A-III; B-V; C-IV; D-II; E-I

161. In which one of the following, the genus name, its two characters and its class/phylum are correctly matched?

	Genus name		Two characters	Class/ phylum
1)	Ascaris	(i)	Body segmented	Annelida
		(ii)	Males and females distinct	
2)	Salamandra	(i)	A tympanum represents ear	Amphibia
		(ii)	Fertilization is internal	
3)	Pteropus	(i)	Skin possesses hair	Mammalia
		(ii)	Viviparous	
4)	Aurelia	(i)	Cnidoblasts	Coelenterata
		(ii)	Organ level of organization	

162. In some animal groups, the body is found divided into compartments with at least some organs. This characteristic feature is called
1) Segmentation   2) Metamerism
3) Metagenesis   4) Metamorphosis

163. Given below are types of cells present in some animals. Which of the following cells can differentiate to perform different functions?
1) choanocytes   2) interstitial cells
3) gastrodermal cells 4) nematocytes

164. Which one of the following statements is incorrect?
1) Mesoglea is present in between ectoderm and endoderm in Obelia
2) Asterias exhibits radial symmetry
3) Fasciola is a pseudocoelomate animal
4) Taenia is a triploblastic animal

165. Which one of the following statements is incorrect?
1) In cockroaches and prawns excretion of waste material occurs through malpighian tubules.
2) In ctenophores, locomotion is mediated by comb plates.
3) In Fasciola flame cells take part in excretion
4) Earthworms are hermaphrodites and yet cross fertilisation take place among them.

166. Match the following list of animals with their level of organisation.

Division of Labour Animal
(i) Organ level   A. Pheretima
(ii) Cellular aggregate level   B. Fasciola
(iii) Tissue level   C. Spongilla
(iv) Organ system level   D. Obelia

Choose the correct match showing division of labour with animal example.

1) (i)-B, (ii)-C, (iii)-D and (iv)-A
2) (i)-B, (ii)-D, (iii)-C and (iv)-A
3) (i)-D, (ii)-A, (iii)-B and (iv)-C
4) (i)-A, (ii)-D, (iii)-C and (iv)-B

167. Match the column I with column II and choose the correct option.

Column I   Column II
A. Porifera   1. Canal system
B. Aschelminthes   2. Water vascular system
C. Annelida   3. Muscular Pharynx
D. Arthropoda   4. Jointed appendages
E. Echinodermata   5. Metameres

Codes

	A	B	C	D	E
1)	2	3	5	4	1
2)	2	5	3	4	1
3)	1	3	5	4	2
4)	1	5	3	4	2

168. Planaria possesses high capacity of:
1) Metamorphosis
2) Regeneration
3) Alternation of generation
4) Bioluminescence

169. Select the Taxon mentioned that represents both marine and fresh water species:
1) Echinoderms
2) Ctenophora
3) Cephalochordata
4) Cnidaria

170. Cockroaches are brown or black bodied animals that are included in class_of phylum_.
1) Reptilia; Annelida
2) Insecta; Arthropoda
3) Insecta; Annelida
4) Reptilia; Arthropoda

171. Body having meshwork of cell, internal cavities lined with food filtering flagellated cells and indirect development are the characteristics of phylum.

1) Porifera   2) Mollusca

3) Protozoa   4) Coelenterate

172. Metagenesis refers to:

1) Alteration of generation between asexual and sexual phases of an organisms

2) Occurrence of a drastic change in form during post-embroyonic development

3) Presence of a segmented body and parthenogenetic mode of reproduction

4) Presence of different morphic forms

173. Which of the following characteristic features always holds true for the corresponding group of animals?

1) Cartilaginous endoskeleton	Chondrichthyes
2) Viviparous	Mammalia
3) Possess a mouth	Chordata with an upper and a lower jaw
4) 3 - chambered heart	Reptilia with One incomplete -ly divided ventricle

174. Which of the following features is not present in the Phylum - Arthropoda ?

1) Chitinous exoskeleton

2) Metameric segmentation

3) Parapodia

4) Jointed appendages

175. An important characteristic that Hemichordates share with Chordates is :

1) Ventral tubular nerve cord

2) Pharynx with gill slits

3) Pharynx without gill slits

4) Absence of notochord

176. The most abundant cell in human blood are

1) Neutrophils   2) Monocytes

3) Lymphocytes   4) None of these

177. Basophil secrete

1) Histamine   2) Serotonin

3) Heparin   4) All of these

178. Lymphocyte forms how much per cent of WBCs?

1) 20 to 25   2) 2 to 3

3) 6 to 8   4) 60 to 65

179. Platelets are

1) Cell fragments of megakaryocyte

2) 1.5 to 3.5 lac/mm^3 in blood

3) Also called thrombocytes

4) All of these

180. ABO grouping is based on how many antigens present or absent on WBCs

1) 1

2) 2

3) 3   4) None of these

181. Rh incompatibility in first pregnancy occurs when

1) Foetus develop its heart completely

2) During the delivery of first child

3) When foetal organs completely develop

4) Never occur in the first pregnancy

182. Bicuspid valve/mitral valve is found between
   1) Left atrium and left ventricle
   2) Right atrium and right ventricle
   3) Right atrium and left ventricle
   4) Left atrium and right ventricle

183. Which of the following has the thickest wall?
   1) Left auricle
   2) Left ventricle
   3) Right auricle
   4) Right ventricle

184. Human heart is
   1) Neurogenic
   2) Myogenic
   3) Cardiogenic
   4) Digenic

185. Contraction of right ventricle pumps blood into
   1) Dorsal aorta
   2) Pulmonary vein
   3) Coronary artery
   4) Pulmonary artery

Part-2 : Zoology : Section-B (186-200)
Answer Any Ten Questions

186. The amount of blood to be pumped out by each ventricle/minute is
   1) Stroke volume
   2) Cardiac output
   3) ERV
   4) ZRV

187. Identify the correct sequence of events in a cardiac cycle:
   1) Diastole, atrial systole, ventricular diastole
   2) Atrial systole, ventricular diastole, ventricular systole
   3) Atrial systole, ventricular systole, joint diastole
   4) Ventricular diastole, diastole, ventricular systole, atrial systole

188. Which of the following blood vessels possess semilunar valves?
   1) Vena cava and aorta
   2) Aorta and pulmonary artery
   3) Pulmonary artery and pulmonary vein
   4) Pulmonary vein and vena cava

189. P-wave represents
   1) Depolarization of ventricles
   2) Repolarization of ventricle
   3) Repolarization of atria
   4) Depolarization of atria

190. Select the total number of incorrect matching from the following:
   A) ECG-Electro Cardio Gram
   B) AVN-Atrio Ventricular Node
   C) SAN-Sino Atrial Node
   D) WBC-White Blue Cells
   E) RBC-Red Blood Cells
   1) A
   2) B
   3) C
   4) D

191. Which of the following pair of terms represent both one and the same thing?
   1) Plasma-Serum
   2) Atrioventricular node-Pacemaker
   3) Leucocytes-Lymphocytes
   4) Mitral valve-Bicuspid valve

192. How many times a red blood corpuscle will have to pass through the heart in its journey from hepatic artery to the aorta?
   1) Two times
   2) Only once
   3) Several times
   4) Four times

193. **Maximum pressure of blood is experienced**

    1) When blood enters from left atrium to aorta

    2) When blood enters from right atrium to aorta

    3) When blood enters from left ventricle to aorta

    4) When blood enters from right ventricle to aorta

194. **The true statement about RBC is**

    1) RBCs have an average life span of 120 days.

    2) RBCs are destroyed in the spleen (graveyard of RBCs).

    3) RBCs are devoid of nucleus in most of the mammals.

    4) All the above

195. **An artery is**

    1) Thick walled in which blood flows under low pressure.

    2) Thin walled in which blood flows under high pressure.

    3) Thick walled in which blood flows under high pressure.

    4) Thin walled in which blood flows under low pressure.

196. **There is a vertical transmission of Rh antibody from mother to foetus because they are _____ type of antibody**

    1) Ig M   2) IgG

    3) Ig A   4) Ig D

197. **Ventricles are thick-walled as compared to atrium because**

    1) It is to receive blood from atria

    2) It is present on the posterior side

    3) It has to pump blood

    4) None of these

198. **Cells constituting the wall of capillaries are**

    1) Parietal   2) Endothelial

    3) Oxyntic   4) Haemocytes

199. **The blood circulation, which starts and ends into capillaries is**

    1) Portal circulation

    2) Renal circulation

    3) Hepatic circulation

    4) Lymphatic circulation

200. **Which one of the following is absent in the human beings?**

    1) Hypophyseal-hypothalamic tract

    2) Hepatic portal vein

    3) Renal portal vein

    4) None of these

SPACE FOR ROUGH WORK