

**HARVIN
ACADEMY**

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PREET VIHAR

JANAKPURI

MEERUT

HFT/1/19

Test Code

Batch 1

720

Max. Marks

3 hrs.

Time Allowed

Important Instructions:

1. This booklet carries 180 multiple choice questions; 45 in Physics, 45 in Chemistry and 90 in Biology.
2. The test is of 3 hours duration. Each question carries 4 marks. For each correct response, the candidate will get 4 marks. For each incorrect response, one mark will be deducted from the total scores.
3. Each question is followed by four alternatives as suggested answers. Mark the most appropriate alternative as your answer in the space provided in the OMR sheet.
4. Only one alternative is to be selected. Any cutting, overwriting, multiple responses will be treated as an incorrect response and will be awarded one negative mark.
5. Read the instructions on the OMR sheet carefully before filling up the responses.
6. Any indiscipline / use of unfair means in the Examination Hall will lead to disqualification of the candidate.
7. Use of white fluid for correction and use of electronic/manual calculator is prohibited.
8. The candidates are allowed to take away this test-booklet with them but must submit the OMR sheet before leaving the Examination Hall.
9. Use Blue/Black Ball Point Pen only for writing particulars on this page/markings responses.

Test Syllabus

Physics : Unit and Measurement, Motion in 1D

Chemistry : Redox Reaction, Some Basic concepts of Chemistry Structure of Atom

Botany : Living world & biological classification (Batch 1), Living world & biological classification upto kingdom protista (Batch 2)

Zoology : Syllabus till covered

Name of the Candidate (in Capitals) : _____

Roll Number (In figures) : _____ Phone No. _____

Centre of Examination (in Capitals) : _____

Date of Examination : _____

Candidate's Signature : _____ Invigilator's Signature : _____

1. $\tan \theta = \frac{rg}{v^2}$ is a formula used for banking of curves where θ is the angle of banking, r = radius of the curved path, g is the acceleration due to gravity and v is the velocity of the automobile. Which of the following is correct about the relationship.
1. Only correct dimensionally
 2. Only correct numerically
 3. Both dimensionally and numerical correct
 4. None
2. If $v = \frac{a}{t} + bt^3$ where v = velocity and t is time the dimensional formula of a and b are
1. T, T^{-3}
 2. L, LT^{-4}
 3. T^{-3}, T
 4. LT^{-4}, L
3. In the equation $y = a \sin(\omega t + kx)$ where y is displacement, ω angular velocity, x is distance, t is time. The dimensional formula of a, k are
1. L, L^{-1}
 2. L^{-1}, L
 3. L, T^{-1}
 4. T^{-1}, L
4. The volume V of a liquid crossing through a tube is related to the area of cross-section A , velocity v and time t as $V \propto A^a v^b t^c$ which of the following is correct
1. $a \neq b \neq c$
 2. $a = b = c$
 3. $a \neq b = c$
 4. $a = b \neq c$
5. The potential energy of a particle varies with distance x from a fixed origin as $v = \frac{A\sqrt{x}}{x^2 + B}$ where A and B are constants. The dimensions of AB are
1. $M^1 L^{5/2} T^{-2}$
 2. $M^1 L^2 T^{-2}$
 3. $M^{3/1} L^{5/2} T^{-2}$
 4. $M^1 L^{7/2} T^{-2}$
6. A bullet moving with a velocity of 100 m/s can just penetrate two planks of equal thickness. The number of such planks penetrated by the same bullet, when the velocity is doubled, will be:
1. 4
 2. 6
 3. 8
 4. 10
7. An automobile travelling with a speed of 60 km/h, can brake to stop within a distance of 20 m. If the car is going twice as fast, i.e., 120 km/h, the stopping distance will be:
1. 20 m
 2. 40 m
 3. 60 m
 4. 80 m
8. The quantities which have the same dimensions are:
1. stress and strain
 2. stress and force
 3. surface energy and surface tension
 4. stress and work
9. The number of significant figures in 0.06900 is
1. 5
 2. 4
 3. 2
 4. 3
10. The sum of the numbers 436.32, 227.2 and 0.301 in appropriate significant figures is
1. 663.821
 2. 664
 3. 663.8
 4. 663.82
11. The mass and volume of a body are 4.237 g and 2.5 cm³, respectively. The density of the material of the body in correct significant figures is
1. 1.6048 g cm⁻³
 2. 1.69 g cm⁻³
 3. 1.7 g cm⁻³
 4. 1.695 g cm⁻³
12. The numbers 2.745 and 2.735 on rounding off to 3 significant figures will give
1. 2.75 and 2.74
 2. 2.74 and 2.73
 3. 2.75 and 2.73
 4. 2.74 and 2.74
13. The length and breadth of a rectangular sheet are 16.2 cm and 10.1 cm, respectively. The area of the sheet in appropriate significant figures and error is
1. $164 \pm 3 \text{ cm}^2$
 2. $163.62 \pm 2.6 \text{ cm}^2$
 3. $163.6 \pm 2.6 \text{ cm}^2$
 4. $163.62 \pm 3 \text{ cm}^2$
14. Which of the following pairs of physical quantities does not have same dimensional formula?
1. Work and torque
 2. Angular momentum and Planck's constant
 3. Tension and surface tension
 4. Impulse and linear momentum

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15. Which of the following measurements is most precise?

1. 5.00 mm
2. 5.00 cm
3. 5.00 m
4. 5.00 km

16. The mean length of an object is 5 cm. Which of the following measurements is most accurate?

1. 4.9 cm
2. 4.805 cm
3. 5.25 cm
4. 5.4 cm

17. Young's modulus of steel is 1.9×10^{11} N/m². When expressed in CGS units of dynes/cm², it will be equal to ($1\text{N} = 10^5$ dyne. $1\text{m}^2 = 10^4$ cm²)

1. 1.9×10^{10}
2. 1.9×10^{11}
3. 1.9×10^{12}
4. 1.9×10^{13}

18. If momentum P, area A and time T are taken to be fundamental quantities, then energy has the dimensional formula

1. $(P^1 A^{-1} T^1)$
2. $(P^2 A^1 T^1)$
3. $(P^1 A^{-1/2} T^1)$
4. $(P^1 A^{1/2} T^{-1})$

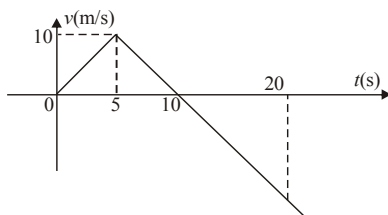
19. A particle moves along a straight line in such a way that it covers one third of its journey with velocity v_1 and the remaining journey with velocity v_2 . The average velocity for the entire journey is

1. $\frac{v_1 + v_2}{2}$
2. $\frac{2v_1 + v_2}{3}$
3. $\frac{v_1 + 2v_2}{3}$
4. Zero

20. A particle is projected from ground vertically upwards with certain velocity. At the highest point

1. Its velocity is zero
2. Its acceleration is non zero
3. Its acceleration is downward
4. All of these are correct

21. The velocity time graph of a particle moving along straight line is shown in adjacent figure. Net displacement of the particle in 20 seconds is

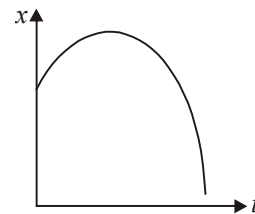


1. 50 m
2. -100 m
3. 150 m
4. -50 m

22. The position (x) of a particle moving along x -axis at any instant ' t ' is given as $x = 20 - 8t + t^2$. The average velocity of the particle from $t = 0$ to $t = 10$ second is

1. 4 m/s
2. 2 m/s
3. 6 m/s
4. 10 m/s

23. The position time graph of a particle moving along x -axis is shown in the adjacent graph. From this graph one can conclude that, speed of the particle



1. is increasing continuously
2. is constant
3. first increases then decreases
4. first decreases then increases

24. A particle starts from rest and moves with constant acceleration of 2 m/s^2 . The displacement of the particle in 6th second is

1. 11 m
2. 9 m
3. 36 m
4. 18 m

25. Select the correct option

1. speed = magnitude of velocity
2. acceleration = rate of change of speed
3. acceleration = rate of change of position
4. speed = rate of change of position

26. The position of a particle moving along x -axis is given as $x = t^3 + t^2 + t + 5$. The acceleration of the particle at $t = 2$ s is

1. 14 m/s^2
2. 12 m/s^2
3. 13 m/s^2
4. 16 m/s^2

27. A particle is projected vertically upwards with a velocity of 50 m/s. The time of ascent is (take $g = 10 \text{ m/s}^2$)

1. 10 s
2. 5 s
3. 15 s
4. 20 s

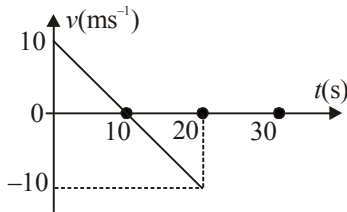
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28. A particle is projected vertically upwards with velocity u . The displacement of particle in the last second of its journey is

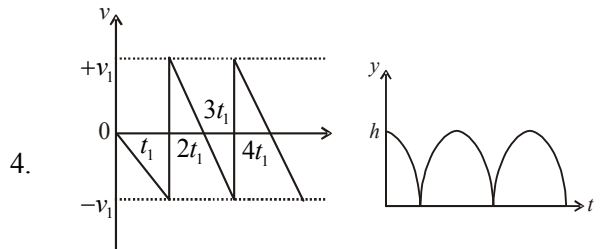
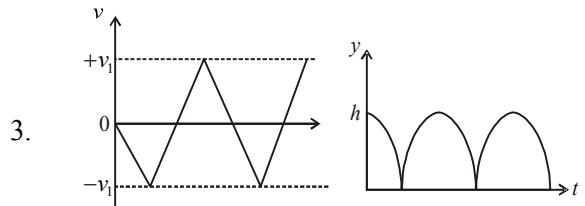
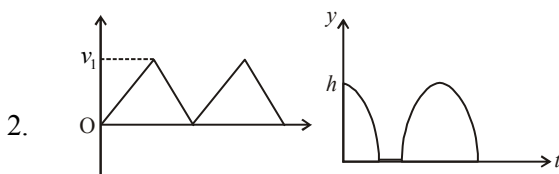
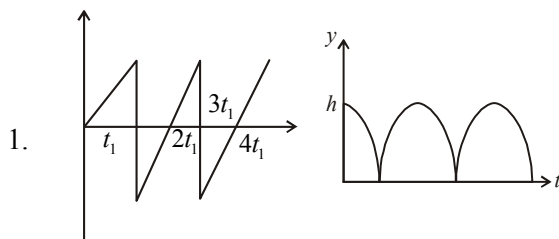
1. $u - \frac{g}{2}$
2. $\frac{g}{2}$
3. $\frac{-g}{2}$
4. $-\left(u - \frac{g}{2}\right)$

29. The velocity - time plot for a particle moving on a straight line is shown below

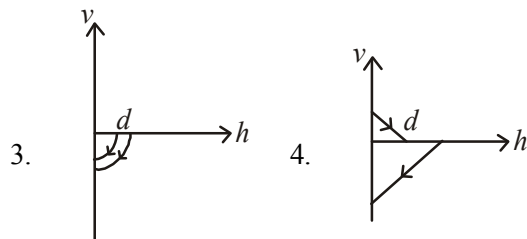
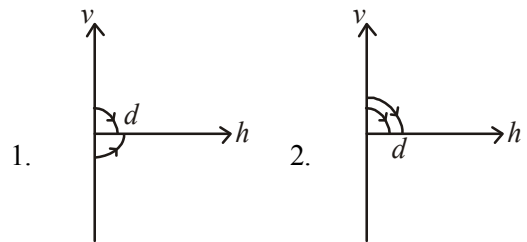


1. The particle has zero displacement
2. The particle has constant acceleration
3. The particle has never turned around
4. The average speed in the interval 0 to 10s is different from the average speed in the interval 10s to 20s

30. Consider a rubber ball freely falling from a height $h = 4.9$ m onto a horizontal elastic plate. Assume that the duration of collision is negligible and the collision with the plate is totally elastic. Then the velocity as a function of time and the height as function of time will be



31. A ball is dropped vertically from a height d above the ground. It hits the ground and bounces up vertically to a height $d/2$. Neglecting subsequent motion and air resistance, its velocity v varies with the height h above the ground as



32. A particle moves along x-axis as

$$x = 4(t - 2) + a(t - 2)^2$$

Which of the following is true?

1. The initial velocity of particle is 4
2. The acceleration of particle is $2a$
3. The particle is at origin at $t = 0$
4. None of the above

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33. The acceleration of a particle is increasing linearly with time t as bt . The particle starts from the origin with an initial velocity v_0 . The distance travelled by the particle in time t will be

1. $v_0t + \frac{1}{3}bt^2$ 2. $v_0t + \frac{1}{3}bt^3$
 3. $v_0t + \frac{1}{6}bt^3$ 4. $v_0t + \frac{1}{2}bt^2$

34. A particle located at $x = 0$ at time $t = 0$, starts moving along the positive x -direction with a velocity v that varies as $v = \alpha\sqrt{x}$. The displacement of the particle varies with time as

1. t^2 2. t
 3. $t^{1/2}$ 4. t^3

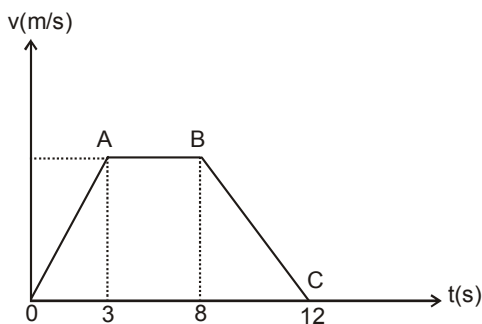
35. The numerical value of the ratio of instantaneous velocity to instantaneous speed is

1. Always less than 1
 2. Always equal to 1
 3. Always more than 1
 4. Equal to or less than 1

36. A stone is dropped from a certain height which can reach the ground in 5 s. It is stopped after 3s of its fall and then it is again released. The total time taken by the stone to reach the ground will be

1. 6s 2. 6.5s
 3. 7s 4. 7.5s

37. From the velocity - time graph, given in figure of a particle moving in straight line, one can conclude that



1. Its average velocity during the 12s interval is $24/7 \text{ ms}^{-1}$.
 2. Its velocity for the first 3s is uniform and is equal to 4 ms^{-1} .
 3. The body has a constant acceleration between $t = 3\text{s}$ and $t = 8\text{s}$.
 4. The body has a uniform retardation from $t = 8\text{s}$ to $t = 12\text{s}$.

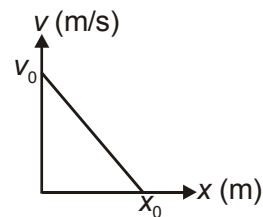
38. Dimensions of 'ohm' are same as [Given that $h = \text{Planck constant}$ and $e = \text{charge}$]

1. $\frac{h}{e}$ 2. $\frac{h^2}{e}$
 3. $\frac{h}{e^2}$ 4. $\frac{h^2}{e^2}$

39. Two particles one with constant velocity 50 m/s and the other with uniform acceleration 10 m/s^2 start moving simultaneously from the same place in the same direction. They will be at a distance of 125 m from each other after

1. 4 second 2. $5(1 + \sqrt{2})$ second
 3. 10 second 4. $10(\sqrt{2} + 1)$ second

40. Given is velocity position graph.



The corresponding $a-x$ graph is

1. 2.
 3. 4.

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41. Dimensions of $\frac{1}{\mu_0 \epsilon_0}$, where symbols have their usual meaning, are
1. $[LT^{-1}]$
 2. $[L^{-1}T]$
 3. $[L^{-2}T^2]$
 4. $[L^2T^{-2}]$
42. The dimensions of $e^2/4\pi\epsilon_0hc$, where e , ϵ_0 , h and c are electronic charge, electric permittivity, Planck's constant and velocity of light in vacuum respectively
1. $[M^0L^0T^0]$
 2. $[M^1L^0T^0]$
 3. $[M^0L^1T^0]$
 4. $[M^0L^0T^1]$
43. If radius of the sphere is (5.3 ± 0.1) cm. Then percentage error in its volume will be
1. $3 + 6.01 \times \frac{100}{5.3}$
 2. $\frac{1}{3} \times 0.01 \times \frac{100}{5.3}$
 3. $\left(\frac{3 \times 0.1}{5.3}\right) \times 100$
 4. $\frac{0.1}{5.3} \times 100$
44. The pressure on a square plate is measured by measuring the force on the plate and the length of the sides of the plate. If the maximum error in the measurement of force and length are respectively 4% and 2%, The maximum error in the measurement of pressure is
1. 1%
 2. 2%
 3. 6%
 4. 8%
45. While measuring the acceleration due to gravity by a simple pendulum, a student makes a positive error of 1% in the length of the pendulum and a negative error of 3% in the value of time period. His percentage error in the measurement of g by the relation $g = 4\pi^2(l/T^2)$ will be
1. 2%
 2. 4%
 3. 7%
 4. 10%
46. Vapour density of air is (considering air as 80% N_2 and 20% O_2)
1. 001293
 2. 1.293
 3. 14.4
 4. 28.9
47. One mole of potassium chlorate is thermally decomposed and excess of aluminium is burnt in the gaseous product. How many mole of aluminium oxide are formed:
1. 1
 2. 1.5
 3. 2
 4. 3
48. 8g of sulphur is burnt to form SO_2 which is oxidised by Cl_2 water. The solution is treated with $BaCl_2$ solution. The amount of $BaSO_4$ precipitated is
1. 1 mole
 2. 0.5 mole
 3. 0.20 mole
 4. 0.25 mole
49. The density of a solution prepared by dissolving 120 g of urea (Mol.Mass = 60u) in 1000 g of water is 1.15 g/mL. The molarity of this solution is
1. 1.02 M
 2. 0.50 M
 3. 2.05 M
 4. 1.78 M
50. The ratio of masses of oxygen and nitrogen of a particular gaseous mixture is 1 : 4. The ratio of number of their molecule is
1. 1 : 4
 2. 7 : 32
 3. 1 : 8
 4. 3 : 16
51. 800 ml of a mixture of O_2 and O_3 weight 1.2 gm at NTP. The volume of O_3 in the mixture is
1. 80 ml
 2. 160 ml
 3. 200 ml
 4. 400 ml
52. Which has greatest number of atoms at NTP?
1. 1ml CH_4
 2. 1ml C_3H_8
 3. 1ml N_2
 4. 1ml H_2O
53. The ratio of number of atoms in 1gm CO_2 and 1gm NH_3 is
1. $\frac{17}{44}$
 2. $\frac{51}{176}$
 3. $\frac{17}{22}$
 4. $\frac{176}{51}$
54. In which case 1 M is more concentrated than 1m ?
1. Density of solution is 1gm/ml
 2. Density is less than 1gm/ml
 3. Density is more than 1gm/ml
 4. Both 1 & 2

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55. 6gm H₂ reacts with 40gm O₂ to form H₂O. How much maximum mass of H₂O is formed?
1. 23 gm
 2. 45 gm
 3. 54 gm
 4. 63 gm
56. The molarity of NaNO₃ solution is 1 M. The density of solution is 1.25 gm/ml. The molality of solution is
1. 1 m
 2. 0.86 m
 3. 1.25 m
 4. 0.625 m
57. The number of atoms in 1.7 gm NH₃ is
1. N_A
 2. 0.1 N_A
 3. 0.2 N_A
 4. 0.4 N_A
58. If you have 2 hydrogen atoms and in which electrons are present at 4th level and these electrons jumps to ground level. How many maximum spectral lines are obtained?
1. 6
 2. 5
 3. 4
 4. 3
59. The relationship between energy E₁ of the radiation with a wavelength 8000 Å and the energy of the radiation with a wavelength 16000 Å is
1. E₁ = 6E₂
 2. E₁ = 2E₂
 3. E₁ = 4E₂
 4. E₁ = 1/2E₂
60. The ratio of the radii of the first three Bohr orbit in H atom is
1. 1:1/2:1/3
 2. 1:2:3
 3. 1:4:9
 4. 1:8:27
61. In an atom two electrons move around the nucleus in circular orbits of radii R and 4R. The ratio of the time taken by them to complete one revolution is :
1. 1:4
 2. 4:1
 3. 1:8
 4. 8:7
62. The orbital configuration of ²⁴Cr is 3d⁵ 4s¹. The number of unpaired electrons in Cr³⁺ (g) is :
1. 3
 2. 2
 3. 1
 4. 4
63. Which of the following is the correct set of quantum numbers for the outer shell electrons of ²¹Sc ?
1. 3, 2, 0, +1/2
 2. 4, 0, 0, +1/2
 3. 3, 0, 0, -1/2
 4. 4, 0, -1, +1/2
64. The electronic configuration of a dipositive ion M²⁺ is 2, 8, 14 and its mass number is 56. The number of neutrons present in
1. 32
 2. 42
 3. 30
 4. 34
65. The kinetic energy of the photoelectrons does not depend upon
1. Intensity of incident radiation
 2. Frequency of incident radiation
 3. Wavelength of incident radiation
 4. Wave number of incident radiation
66. The work function of a metal is 4.2 eV. If radiations of 2000 Å fall on the metal then the kinetic energy of the fastest photo electron is
1. 1.6 × 10⁻¹⁹ J
 2. 16 × 10¹⁰ J
 3. 3.2 × 10⁻¹⁹ J
 4. 6.4 × 10⁻¹⁰ J
67. According to Bohr's theory the angular momentum of an electron in the fourth orbit is
1. $\frac{h}{2\pi}$
 2. $\frac{2h}{\pi}$
 3. $\frac{3h}{2\pi}$
 4. $\frac{3h}{\pi}$
68. The transition of electrons in H atom that will emit maximum energy is :
1. n₃ → n₂
 2. n₄ → n₃
 3. n₅ → n₄
 4. n₆ → n₅
69. For the electronic transition from n = 2 → n = 1 which of the following will produce shortest wavelength ?
1. H atom
 2. D atom
 3. He⁺ ion
 4. Li²⁺ ion
70. In Bohr's model of the hydrogen atom the ratio between the period of revolution of an electron in the orbit n = 1 to the period of revolution of the electron in the orbit n = 2 is
1. 1:2
 2. 2:1
 3. 1:4
 4. 1:8

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71. A cricket ball of 0.5 kg is moving with a velocity of 100 ms^{-1} . The wavelength associated with its motion is :
1. $1/100 \text{ cm}$
 2. $6.6 \times 10^{-34} \text{ m}$
 3. $1.32 \times 10^{-35} \text{ m}$
 4. $6.6 \times 10^{-28} \text{ m}$
72. If uncertainties in the measurement of position and momentum are equal, the uncertainty in the measurement of velocity is:
1. $\frac{1}{2} \sqrt{\frac{mh}{\pi}}$
 2. $\frac{1}{2\pi} \sqrt{\frac{h}{m}}$
 3. $\frac{1}{2m} \sqrt{\frac{h}{\pi}}$
 4. None of these
73. Valency factor (V_p) for following redox reaction is respectively
- (i) $\text{As}_2\text{S}_3 \longrightarrow \text{AsO}_3^- + \text{SO}_4^{2-}$ (ii) $\text{I}_2 \longrightarrow \text{I}^- + \text{IO}_3^-$
- (iii) $\text{H}_3\text{PO}_2 \longrightarrow \text{PH}_3 + 2\text{H}_3\text{PO}_3$
1. $28, \frac{5}{3}, \frac{4}{3}$
 2. $28, \frac{4}{3}, \frac{5}{3}$
 3. 6, 4, 7
 4. 4, 3, 9
74. In which reaction: H_2O_2 acts as reducing agent?
1. $\text{Ag}_2\text{O} + \text{H}_2\text{O}_2 \longrightarrow 2\text{Ag} + \text{H}_2\text{O} + \text{O}_2$
 2. $2\text{KI} + \text{H}_2\text{O}_2 \longrightarrow 2\text{KOH} + \text{I}_2$
 3. $\text{PbS} + 4\text{H}_2\text{O}_2 \longrightarrow \text{PbSO}_4 + 4\text{H}_2\text{O}$
 4. $\text{H}_2\text{O}_2 + \text{SO}_2 \longrightarrow \text{H}_2\text{SO}_4$
75. The oxidation number of phosphorus in $\text{Ba}(\text{H}_2\text{PO}_2)_2$ is:
1. +3
 2. +2
 3. +1
 4. -1
76. For the reaction, $\text{NH}_3 + \text{OCl}^- \rightarrow \text{N}_2\text{H}_4 + \text{Cl}^-$ occurring in basic medium, the coefficient of N_2H_4 in the balanced equation will be
1. 1
 2. 2
 3. 3
 4. 4
77. $a\text{K}_2\text{Cr}_2\text{O}_7 + b\text{KCl} + c\text{H}_2\text{SO}_4 \rightarrow x\text{CrO}_2\text{Cl}_2 + y\text{KHSO}_4 + z\text{H}_2\text{O}$.
The above equation balances when
1. $a = 2, b = 4, c = 6$ and $x = 2, y = 6, z = 3$
 2. $a = 4, b = 2, c = 6$ and $x = 6, y = 2, z = 3$
 3. $a = 6, b = 4, c = 2$ and $x = 6, y = 3, z = 2$
 4. $a = 1, b = 4, c = 6$ and $x = 2, y = 6, z = 3$
78. The difference in the oxidation number of the two types of sulphur atoms in $\text{Na}_2\text{S}_4\text{O}_6$ is :
1. 4
 2. 5
 3. 6
 4. 7
79. How many moles of $\text{K}_2\text{Cr}_2\text{O}_7$ can be reduced by 1 mole of Sn^{2+}
1. $\frac{1}{3}$
 2. $\frac{1}{6}$
 3. $\frac{2}{3}$
 4. 1
80. What is A in the following reaction
- $$2\text{Fe}^{3+}[\text{aq}] + \text{Sn}^{2+}[\text{aq}] \longrightarrow 2\text{Fe}^{2+}[\text{aq}] + \text{A}$$
1. $\text{Sn}^{3+}[\text{aq}]$
 2. $\text{Sn}^{4+}[\text{aq}]$
 3. $\text{Sn}^{2+}[\text{aq}]$
 4. Sn
81. The total number of electrons in a subshell designated by azimuthal quantum number, l is given as
1. $2l + 1$
 2. l^2
 3. $4l + 2$
 4. $2l + 2$
82. How many electrons in ${}_{19}\text{K}$ have $n = 3; l = 0$?
1. 1
 2. 2
 3. 4
 4. 3
83. Which of the following sets of quantum numbers is impossible arrangement ?
1. $n = 3, m = -2, s = +1/2$
 2. $n = 4, m = +3, s = +1/2$
 3. $n = 5, m = +2, s = -1/2$
 4. $n = 3, m = -3, s = -1/2$
84. How many orbitals are populated by one or two electrons in case of Cr ($z = 24$) ?
1. 14
 2. 15
 3. 16
 4. 12.
85. Which is more concentrated?
1. $1\text{NH}_3\text{PO}_2$
 2. $1\text{NH}_3\text{PO}_3$
 3. $1\text{NH}_3\text{PO}_4$
 4. All have same concentration
86. The number of moles of KMnO_4 reduced by one mole of KI in alkaline medium is
1. One fifth
 2. Five
 3. One
 4. Two

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87. 1g of a carbonate (M_2CO_3) on treatment with excess HCl produce 0.01186 mole of CO_2 . The molar mass of M_2CO_3 in $g\ mol^{-1}$ is
1. 118.6
 2. 11.86
 3. 1186
 4. 84.3
88. According to the Bohr Theory, which of the following transition in the hydrogen atom will give rise to the least energetic photon.
1. $n = 6$ to $n = 1$
 2. $n = 5$ to $n = 4$
 3. $n = 6$ to $n = 5$
 4. $n = 5$ to $n = 3$
89. The most probable radius (in pm) for finding the electron in He^+ is
1. 0.0
 2. 52.9
 3. 26.5
 4. 105.8
90. The ionisation energy of He^+ is $19.6 \times 10^{-18} \text{ J atom}^{-1}$. The energy of the first stationary state ($n=1$) of the Li^{2+} is
1. $-2.2 \times 10^{-15} \text{ J atom}^{-1}$
 2. $-8.82 \times 10^{-17} \text{ J atom}^{-1}$
 3. $-4.41 \times 10^{-16} \text{ J atom}^{-1}$
 4. $-4.41 \times 10^{-17} \text{ J atom}^{-1}$
91. What is true for the fungi in which perfect stage is not known?
1. Some members are saprophytes or parasites
 2. Once perfect stage were discovered they were often moved to ascomycetes or basidiomycetes
 3. Large number of them are decomposers of litter and help in mineral cycling
 4. All of them
92. What is the similarity between *Alternaria*, morels and buffles?
- (1) Mycelium is branched and septate
 - (2) Asexual spores are conidia
 - (3) They all belong to ascomycetes
1. (1), (2)
 2. (2), (3)
 3. (1), (3)
 4. All of them
93. Match the scientist with their contribution:
- A. D. J. Ivanowsky (i) Demonstrated extract of the infected plant of tobacco could cause infection in healthy plants
 - B. W. M. Stanley (ii) discovered new infectious agent that was smaller than viruses
 - C. T. O. Diener (iii) Showed viruses could be crystallized and crystals consist largely of proteins
 - D. M. W. Beijerinck (iv) recognized certain microbes or causal organism of the mosaic disease of tobacco.
1. A – I, B – iii, C – ii, D – iv
 2. A – iv, B – iii, C – ii, D – i
 3. A – iv, B – I, C – ii, D – iii
 4. A – I, B – iv, C – iii, D – ii
94. Which of the following form the basis for the division of kingdom fungi?
- (i) mode of nutrition
 - (ii) morphology of mycelium
 - (iii) site of occurrence
 - (iv) mode of spore formation
 - (v) method of sexual reproduction
 - (vi) fruiting bodies
1. I, iv, vi
 2. I, ii, iv
 3. ii, iii, v
 4. ii, iv, vi
95. Members of which group are found in aquatic habitats and on decaying wood in moist and damp places or as obligate parasites
1. Ascomycetes
 2. Deuteromycetes
 3. Phycomycetes
 4. Basidiomycetes
96. What is the appropriate sequence of sexual cycle for the members of puffballs's group? The representations given below
- (i) Karyogamy
 - (ii) Meiosis
 - (iii) Dikaryophase
 - (iv) Ascospores
 - (v) Plasmogamy
 - (vi) Basidiospores
1. v – i – iii – ii – iv
 2. v – iii – i – ii – vi
 3. v – i – iii – ii – vi
 4. v – iii – i – ii – iv

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97. Which spores are produced after asexual reproduction in phycomycetes?
1. sporangiospores, oospores
 2. aplanospores, zoospores
 3. Zygosporangia, oospores
 4. aplanospores, zygosporangia
98. Given below are the four statements regarding virus. Which of them is incorrect?
1. In general, viruses that infect plants have single stranded RNA and bacteriophages are usually double stranded DNA viruses
 2. Capsomeres, are arranged in helical or polyhedral geometric forms
 3. Have inert crystalline structure outside the living cell
 4. Cause disease like AIDS, common cold, and potato spindle tuber disease
99. What is the origin of asexual spore and sexual spores produced in members of ascomycetes respectively?
1. Exogenous, Endogenous
 2. Endogenous, Exogenous,
 3. Exogenous, Exogenous
 4. Endogenous, Endogenous
100. Morels and *Agaricus* have edible fruiting bodies and belong to their respective class as
1. Ascomycetes and Basidiomycetes
 2. Basidiomycetes and Ascomycetes
 3. Ascomycetes and Phycomycetes
 4. Basidiomycetes only
101. Sexual spore produced in the life cycle of fungi is
1. Sporangiospore
 2. Basidiospore
 3. Chlamydospore
 4. Conidia
102. Fungi prefer to grow in
1. Cool and humid conditions
 2. Warm and humid places
 3. Cool and dry places
 4. Dry and organic rich soil
103. Cell walls of all fungi consists of the polysaccharide
1. Chitin
 2. Cellulose
 3. Silica
 4. Pectin
104. Match the following Column I with Column II
- | A | B |
|-------------------|-----------------------|
| A. Phycomycetes | I. Sac fungi |
| B. Ascomycetes | II. Algal fungi |
| C. Basidiomycetes | III. Fungi Imperfecti |
| D. Deuteromycetes | IV. Club fungi |
1. A - II, B - I, C - IV, D - III
 2. A - II, B - IV, C - I, D - III
 3. A - IV, B - I, C - II, D - III
 4. A - IV, B - III, C - II, D - I
105. Lichens are composite organism made up of a fungus and a photosynthetic alga. Which of the following statements is wrong about lichen?
1. Lichens are sensitive to air pollution because they have no way to excrete toxic substances
 2. Algal partner (phycobiont) and fungal partner (mycobiont) live mutually
 3. Algae prepare food for fungi and fungi provide shelter and absorb water + minerals for algal partner
 4. None of these
106. In R.H. Whittaker five kingdom classification how many kingdom includes heterotrophic organism and how many kingdom includes autotrophic organisms
1. 3, 2
 2. 4, 3
 3. 5, 2
 4. 2, 3
107. White spots seen on mustard leaves are due to a :
1. Saprobic fungus
 2. Parasitic fungus
 3. Yeasts
 4. Algae
108. Read the following statements w.r.t. fungi :
- (i) Their body consist of long, selender thread li structures called hyphae
 - (ii) The network of hyphae is called mycelium
 - (iii) Hyphae may be continuous tubes filled with multinucleate cytoplasm, these hyphae are coenocytic
 - (iv) In many cases hyphae have septate or cross walls
 - (v) The cell wall of fungi are composed by chitin and polysaccharides.

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How many of the above statements are correct?

1. One
2. Three
3. Four
4. Five

109. Select the incorrect match:

1. Conidia – Asexual spore
2. Sporangiospore – Asexual spore
3. Ascospore – Asexual spore
4. Oospore – Sexual spore

110. Which of the following forms the basis for the classification of fungi?

1. The morphology of mycelium
2. Mode of spore formation
3. Type of fruiting bodies
4. All of these

111. Read the following statements :

- (i) When fungus reproduces sexually, two haploid hyphae of compatible mating types come together and fuse
- (ii) In some fungi the fusion of two haploid cells immediately results in diploid cell
- (iii) In fungi of class the Ascomycetes and Basidiomycetes, an intervening diakaryotic stage ($n + n$ i. e., two nuclei per cell) occurs.
- (iv) The dikaryotic cell may show fusion of nuclei to form diploid cell
- (v) The fungi of class Ascomycetes and Basidiomycetes have aseptate hyphae

How many of the above statements are correct?

1. Five
2. Four
3. Three
4. One

112. Phycomycetes Which of the following represents dikaryotic and diploid condition respectively?

1. $2n, n + n$
2. $2n, n$
3. $n + n, 2n$
4. $n, n + n$

113. The zoospores of the class Phycomycetes of fungi :

1. Are endogenously produced inside sporangium
2. Possess cellulosic cell wall
3. Lack flagella
4. Are rarely motile

114. The parasitic fungi on mustard is :

1. Albugo
2. Rhizopus
3. Mucor
4. Agaricus .

115. Read the following statements w.r.t. the class Ascomycetes of fungi :

- (i) These are commonly called sac fungi
- (ii) These are mostly multicellular
- (iii) They are saprotrophic, decomposers, parasitic or coprophilous
- (iv) Their mycelium is aseptate
- (v) Conidia produced by them are endogenous

How many of the above statements are correct?

1. Two
2. Three
3. Four
4. Five

116. Which of the following is extensively used in biochemical and genetic work?

1. Aspergillus
2. Neurospora
3. Claviceps
4. Agaricus

117. The rust and smut fungi belong to the class :

1. Ascomycetes
2. Phycomycetes
3. Deuteromycetes
4. Basidiomycetes

118. Read the following statements w.r.t. Basidiomycetes :

- (i) Sex organs are commonly present
- (ii) Plasmogamy is brought about by fusion of two vegetative or somatic cells of different strains or genotypes
- (iii) The dikaryotic structure may give rise to basidium
- (iv) Karyogamy and Meiosis take place in the basidium producing four ascospores .
- (v) The basidiospores are exogeneously produced on the basidium

How many of the above statements are correct?

1. Three
2. Four
3. Two
4. Five

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119. The fungi of Deuteromycetes :

1. Permanently remain in this class only
2. When their sexual forms are discovered, are moved into other classes like Ascomycetes or Basidiomycetes they rightly belong to
3. Temporarily remains in this class
4. More than one option is correct

120. Which of the following is incorrect w.r.t Deuteromycetes ?

1. When perfect stages are discovered, they are often moved to Oomycetes or Zygomycetes
2. Some of them are saprophytes or parasites while a large number of them are decomposers of litter and help in mineral cycling
3. Some common examples are Alternaria, Colletotrichum and Trichoderma
4. Their sexual reproduction are yet to be discovered for many members

121. Viruses are :

1. Multicellular
2. Non-cellular
3. Cellular
4. Partially cellular

122. Read the following statements :

- (i) The term virus was given by Pasteur
- (ii) Virus means poisonous fluid or venom
- (iii) Viruses can pass through bacteria proof filters
- (iv) W.M. Stanley showed that viruses could be crystalized
- (v) Viruses are inert outside the host cell

How many of the above statements are correct?

1. Four
2. Five
3. Two
4. Three

123. The statement — *Contagium vivum fluidum* (i.e., living infections fluid) was given by :

1. Ivanowsky
2. Beijerinck
3. Stanley
4. Pasteur

124. Find the incorrect match w.r.t. possession of nucleic acid material :

1. Plant viruses — ssRNA usually
2. Animal viruses — dsDNA/dsRNA/ssRNA
3. Plant viruses — dsDNA usually
4. Bacteriophages dsDNA usually

125. The protein coat of viruses are called which is made of small subunits called

1. Capsomere, Capsid
2. Peplomere, Capsid
3. Capsid, Peplomere
4. Capsid, Capsomere

126. Read the following statements about viroids :

- (i) These were discovered by T.O. Diener
 - (ii) These are of high molecular weight
 - (iii) These lack protein coat
 - (iv) Their RNA is of low molecular weight
 - (v) May possess capsid
- How many of the above statements are correct?
1. Two
 2. Five
 3. Four
 4. Three

127. T.O. Diener discovered the popular viroid disease plants called caused by

1. Tobacco Mosaic Virus, (TMV)
2. Cauliflower Mosaci disease, (CaMV)
3. Potato Spindle Tuber Disease, PSTVd (or Potato Spindle Tuber Viroid)
4. Tobacco Necrosis, TNV

128. The algal and fungal component of a lichen respectively called and

1. Phycobiont, Mycobiont
2. Mycobiont, Phycobiont
3. Mycobiont, Mycobiont
4. Phycobiont, Phycobiont

129. Coenocytic mycelium is present in :

1. Deuteromycetes
2. Ascomycetes
3. Basidiomycetes
4. Phycomycetes

130. The smut fungi is :

1. Puccinia
2. Agaricus
3. Ustilago
4. Colletotrichum

131. Angiosperms have dominated the land flora primarily because of their :

1. Domestication by humans
2. Nature of self pollination
3. Characteristic of producing large number of seeds
4. Power of adaptability in diverse habitat

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132. A virion is :

1. Capsid of virus
2. Nucleus of virus
3. Completely assembled and infectious virus outside the host cell
4. A type of interferon

133. Choose the incorrect statement :

1. Prions are proteinaceous infectious particles with small amount of nucleic acid
2. Viruses having an arthropod as vector are called arboviruses
3. TMV possess RNA as its genetic material
4. Mycophages attack fungi

134. Read the following statements about lichens :

- (i) These are examples of symbionts
- (ii) These actually show commensalism
- (iii) These form pioneer community during Xerarch succession
- (iv) The phycobiont is mostly green algae and in few cases it is blue green algae
- (v) These grow abundantly in SO_2 polluted areas

How many of the above statements are correct?

1. Three
2. Two
3. Five
4. Four

135. Match the columns :

Column I	Column II
A. Prions	(i) Cauliflower mosaic disease
B. Viroids	(ii) Chrysanthemum stunt
C. Plant virus	(iii) Kuru
D. Animal virus	(iv) Polio

1. A = (i), B = (ii), C = D = (iv)
2. A = (iv), B = (iii), C = (i), D = (ii)
3. A = (i), B = (iv), C = D = (iii)
4. A = B = (ii), C = (i), D = (iv)

136. Which of the following would not be normal in a healthy human being? Page 278/279

1. A cells/blood ratio of 45%
2. A plasma albumin concentration of 4%
3. A RBC count of 5.2 million mm^{-3}
4. A hemoglobin level of 15 gram per liter

137. Platelets are cell fragments that: Page 279

- I. are produced from megakaryocytes in the spleen in fetal life
 - II. can release variety of factors involved in blood coagulation
1. Only I is correct
 2. Only II is correct
 3. Both I and II are correct
 4. Both I and II are incorrect

138. When anti B antibodies are present in the plasma and A antigens on the surface of RBCs, her blood group can be: Page 280

1. A and AB
2. Only A
3. Only B
4. O

139. An Rh -ve person, when exposed to Rh +ve blood: Page 281

1. will form antibodies against the Rh antigen
2. will be unaffected
3. will form antibodies against the Rh antigen only on second exposure
4. will receive anti Rh antibodies from the donor

140. The enzyme that activates fibrinogens in the blood is: Page 281

1. Thromboplastin
2. Thrombokinas
3. Thrombin
4. Plasmin

141. Exchange of nutrients and gases between the blood and the cells always occur: Page 282

1. by active transport
2. with the help of transport carrier proteins
3. at the arterial end of the capillary network
4. through the interstitial fluid

142. Two atria are present in the heart of all the following vertebrates except: Page 282

1. Fishes
2. Amphibians
3. Crocodiles
4. Birds

143. Inter-atrial septum in the human heart:

1. A thin muscular wall
2. A thick muscular wall
3. A thin membranous wall
4. A thick membranous wall

144. Damage to alveolar walls leading to decrease in respiratory surface is characteristic of: Page 275

1. Asthma
2. Pneumoconiosis
3. Emphysema
4. Pneumonitis

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- 145. The functions of the respiratory rhythm center can be moderated by a center located in:**
1. Medulla oblongata **Page 275**
 2. Pons varoli
 3. Hypothalamus
 4. Cerebrum
- 146. What amount of carbon dioxide is delivered by every 100 ml of deoxygenated blood at the alveoli under normal physiological conditions? Page 275**
1. 4 ml
 2. 5 ml
 3. 15 ml
 4. 20 ml
- 147. The enzyme carbonic anhydrase is present:**
1. in RBCs but not in plasma **Page 275**
 2. in high concentration in RBCs and in minute quantity in plasma
 3. in minute quantities both in RBCs and in plasma
 4. in high concentration both in RBCs and in plasma
- 148. The binding of carbon dioxide to hemoglobin: Page 274**
- I. is related to the partial pressure of carbon dioxide
 - II. is affected by the partial pressure of oxygen
1. Only I is correct
 2. Only II is correct
 3. Both I and II are correct
 4. Both I and II are incorrect
- 149. The formation of oxy-hemoglobin at the alveoli is favored by all the following except: Page 274**
1. High pO_2
 2. Low pCO_2
 3. Lower H^+ ion concentration
 4. Higher temperature
- 150. Approximately what amount of oxygen is carried in a dissolved state through the plasma by 100 ml of oxygenated blood? Page 274**
1. 0.6 ml
 2. 1.4 ml
 3. 4 ml
 4. 5 ml
- 151. Which of the given three layers in the respiratory membrane is/are one-celled thick? Page 273**
- I. Alveolar epithelium
 - II. Basement substance
 - III. Vascular endothelium
1. Only I
 2. Only I and II
 3. Only I and III
 4. I, II and III
- 152. The amount of carbon dioxide that can diffuse through the diffusion membrane is much higher compared to that of oxygen because: Page 273**
1. the gradient across the membrane is much higher for carbon dioxide
 2. carbon dioxide is more toxic than oxygen
 3. solubility of carbon dioxide is much higher than that of oxygen
 4. carbon dioxide has more affinity for hemoglobin than that of oxygen
- 153. Under normal physiological conditions, the maximum volume of air a person can breathe out after a forced inspiration in a healthy human being is about: Page 272**
1. 2300 ml
 2. 3500 ml
 3. 4600 ml
 4. 5800 ml
- 154. The volume of thoracic chamber can be increased by: Page 270**
1. Contraction of diaphragm and external intercostals
 2. Contraction of diaphragm and internal intercostals
 3. Relaxation of diaphragm and contraction of external intercostals
 4. Relaxation of diaphragm and contraction of internal intercostals
- 155. The conducting part of the human respiratory system is not involved in: Page 270**
- I. clearing inhaled air from foreign particles
 - II. humidifying the exhaled air
 - III. bringing the air to a temperature higher than body temperature
1. Only I
 2. Only II and III
 3. Only I and II
 4. I, II and III
- 156. The type of cartilage that makes epiglottis is: Page 269**
1. Elastic
 2. Hyaline
 3. Calcified
 4. Fibrous
- 157. Branchial respiration is seen in all the following except: Page 268**
1. Aquatic arthropods
 2. Fishes
 3. Amphibians like frog
 4. Aquatic mollusks

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- 158. Marasmus is not characterized by: Page 266**
1. onset age less than one year
 2. simultaneous deficiency of proteins and calories
 3. impairment of mental faculties
 4. extensive edema and swelling of body parts
- 159. Vomiting center is located in: Page 265**
1. Medulla oblongata
 2. Pons varoli
 3. Mid brain
 4. Hypothalamus
- 160. The gross calorific and physiological calorific values [kcal/g] of carbohydrates respectively are: Page 264**
1. 4.0 and 4.0
 2. 4.1 and 4.0
 3. 4.1 and 5.65
 4. 4.0 and 5.65
- 161. Maximum digestion of food occurs in: Page 263**
1. Duodenum
 2. Jejunum
 3. Ileum
 4. Colon
- 162. Lipases can be activated by: Page 262**
1. Cholecystokinin
 2. Secretin
 3. Gastrin
 4. Bile
- 163. Glisson's capsule is the covering of: Page 260**
1. Hepatic lobes
 2. Hepatic lobules
 3. Gall bladder
 4. Hepato-pancreatic duct
- 164. The resting axonal membrane has maximum permeability for: Page 317**
1. Sodium ions
 2. Potassium ions
 3. Negatively charged proteins
 4. Bicarbonate ions
- 165. The restoration of the resting membrane potential after depolarization is largely due to: Page 318**
1. Influx of potassium ions
 2. Efflux of sodium ions
 3. Efflux of potassium ions
 4. Influx of chloride ions
- 166. Which among the following is correct during each cardiac cycle? Exemplar**
1. The volume of blood by right and left ventricles is same
 2. The volume of blood by right and left ventricles is different
 3. The volume of blood received by right and left atria is different
 4. The volume of blood received by pulmonary arteries and aorta is different
- 167. Cardiac activity could be moderated by the autonomic nervous system. Tick the correct answer: Exemplar**
1. The parasympathetic system stimulates heart rate and stroke volume
 2. The sympathetic system stimulates heart rate and stroke volume
 3. The parasympathetic system stimulates heart rate but decreases stroke volume
 4. The sympathetic system stimulates heart rate but decreases stroke volume
- 168. Which of the following is not represented on an ECG of a healthy individual? Exemplar**
1. Ventricular depolarization
 2. Ventricular repolarization
 3. Atrial depolarization
 4. Atrial repolarization
- 169. Respiration in insects is called 'direct' because: Exemplar**
1. The cells exchange O_2/CO_2 directly with the air in the tubes
 2. The tissues exchange O_2/CO_2 directly with coelomic fluid
 3. The tissues exchange O_2/CO_2 directly with the air outside through the body surface
 4. Tracheal tubes exchange O_2/CO_2 directly with the haemocoel which then exchanges the same with the tissues
- 170. A person suffers punctures in his chest cavity in an accident, without any damage to the lungs. It's effect could be: Exemplar**
1. A decreased respiratory rate
 2. Absence of breathing on the affected side
 3. Hyper inflation of the lung on affected side
 4. An increase in the partial pressure of oxygen in deoxygenated blood
- 171. Hepato-pancreatic duct opens into the duodenum and carries: Exemplar**
1. Bile only
 2. Both bile and pancreatic secretions
 3. Pancreatic secretions alone
 4. Bile, pancreatic secretion and chylomicrons

OUR CENTRES :

C-56 Ist Floor, Preet Vihar (Opp.Metro Pillar 82) Delhi - 110092. Phone : 011-42421480

A-1/173, Nazafgarh Road, Metro Pillar No. 614, Janakpuri, Delhi-110058. Phone : 011-49841648

203-206, 2nd Floor, Saraswati Plaza, Shivaji Road, Meerut, U.P. Phone : 0121-4000885

E-mail : info@harvin.academy, Website : www.harvin.academy

172. Liver is the largest gland and is associated with various functions in the human body. Which of the following is not included in the functions of liver? Exemplar

1. Metabolism of carbohydrate
2. Digestion of fat
3. Formation of bile
4. Secretion of hormone gastrin

173. Digestion within a digestive tract is:

1. incomplete
2. extracellular
3. the same as absorption
4. an irreversible process

174. An action potential for a given axon is:

1. different in size each time it occurs
2. always the same size
3. larger when the information has to be conveyed faster
4. smaller when information goes to a gland rather than a muscle

175. When a neuron shows a stable resting potential, the concentration of potassium ions is:

1. 10 times higher inside the cell than outside
2. 10 times higher outside the cell than inside
3. 35 times higher inside the cell than outside
4. 35 times higher outside the cell than inside

176. The original function of the vertebrate stomach was:

1. storage
2. digestion
3. absorption
4. enzyme secretion

177. In a villus, some of the glycerol and fatty acids are bound to carrier proteins and transported as lipoproteins to the:

1. lacteals
2. capillaries
3. lumen of the small intestine
4. lumen of the large intestine

178. Blood enters the heart because muscles of the:

1. ventricles relax
2. ventricles contract
3. atria relax
4. atria contract

179. Examination of blood of a person suspected to be suffering from anemia shows a decrease in the number of all formed elements. Which of the following is most likely to help this patient in the long run?

1. Injectable Vitamin B₁₂
2. Iron supplements
3. Blood transfusion
4. Injection erythropoietin

180. Bohr effect explains

1. a decreased affinity of haemoglobin for oxygen at low partial pressure of oxygen
2. an increased affinity of haemoglobin for oxygen at high partial pressure of oxygen
3. a decreased affinity of haemoglobin for oxygen at high partial pressure of carbon dioxide
4. an increased affinity of haemoglobin for oxygen at low partial pressure of carbon dioxide

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HFT 1
Answers (Batch 1)

1.	<u>1</u>	2.	<u>2</u>	3.	<u>1</u>	4.	<u>3</u>	5.	<u>Full</u>	6.	<u>3</u>	7.	<u>4</u>
8.	<u>3</u>	9.	<u>2</u>	10.	<u>3</u>	11.	<u>3</u>	12.	<u>4</u>	13.	<u>1</u>	14.	<u>3</u>
15.	<u>1</u>	16.	<u>1</u>	17.	<u>3</u>	18.	<u>4</u>	19.	<u>3</u>	20.	<u>4</u>	21.	<u>4</u>
22.	<u>2</u>	23.	<u>4</u>	24.	<u>1</u>	25.	<u>1</u>	26.	<u>1</u>	27.	<u>2</u>	28.	<u>4</u>
29.	<u>1</u>	30.	<u>4</u>	31.	<u>1</u>	32.	<u>2</u>	33.	<u>3</u>	34.	<u>1</u>	35.	<u>2</u>
36.	<u>3</u>	37.	<u>4</u>	38.	<u>3</u>	39.	<u>2</u>	40.	<u>3</u>	41.	<u>4</u>	42.	<u>1</u>
43.	<u>3</u>	44.	<u>4</u>	45.	<u>3</u>	46.	<u>3</u>	47.	<u>1</u>	48.	<u>4</u>	49.	<u>3</u>
50.	<u>2</u>	51.	<u>1</u>	52.	<u>4</u>	53.	<u>2</u>	54.	<u>4</u>	55.	<u>2</u>	56.	<u>2</u>
57.	<u>4</u>	58.	<u>3</u>	59.	<u>2</u>	60.	<u>3</u>	61.	<u>3</u>	62.	<u>1</u>	63.	<u>2</u>
64.	<u>3</u>	65.	<u>1</u>	66.	<u>3</u>	67.	<u>2</u>	68.	<u>1</u>	69.	<u>4</u>	70.	<u>4</u>
71.	<u>3</u>	72.	<u>3</u>	73.	<u>1</u>	74.	<u>1</u>	75.	<u>3</u>	76.	<u>1</u>	77.	<u>4</u>
78.	<u>2</u>	79.	<u>1</u>	80.	<u>2</u>	81.	<u>3</u>	82.	<u>2</u>	83.	<u>4</u>	84.	<u>2</u>
85.	<u>1</u>	86.	<u>4</u>	87.	<u>4</u>	88.	<u>3</u>	89.	<u>3</u>	90.	<u>4</u>	91.	<u>4</u>
92.	<u>1</u>	93.	<u>2</u>	94.	<u>4</u>	95.	<u>3</u>	96.	<u>2</u>	97.	<u>2</u>	98.	<u>4</u>
99.	<u>1</u>	100.	<u>1</u>	101.	<u>2</u>	102.	<u>2</u>	103.	<u>1</u>	104.	<u>1</u>	105.	<u>1</u>
106.	<u>2</u>	107.	<u>2</u>	108.	<u>4</u>	109.	<u>3</u>	110.	<u>4</u>	111.	<u>2</u>	112.	<u>3</u>
113.	<u>1</u>	114.	<u>1</u>	115.	<u>1</u>	116.	<u>2</u>	117.	<u>4</u>	118.	<u>1</u>	119.	<u>4</u>
120.	<u>1</u>	121.	<u>2</u>	122.	<u>2</u>	123.	<u>2</u>	124.	<u>3</u>	125.	<u>4</u>	126.	<u>4</u>
127.	<u>3</u>	128.	<u>1</u>	129.	<u>4</u>	130.	<u>3</u>	131.	<u>4</u>	132.	<u>3</u>	133.	<u>1</u>
134.	<u>1</u>	135.	<u>4</u>	136.	<u>4</u>	137.	<u>2</u>	138.	<u>2</u>	139.	<u>1</u>	140.	<u>3</u>
141.	<u>4</u>	142.	<u>1</u>	143.	<u>1</u>	144.	<u>3</u>	145.	<u>2</u>	146.	<u>1</u>	147.	<u>2</u>
148.	<u>3</u>	149.	<u>4</u>	150.	<u>1</u>	151.	<u>3</u>	152.	<u>3</u>	153.	<u>3</u>	154.	<u>1</u>
155.	<u>2</u>	156.	<u>1</u>	157.	<u>3</u>	158.	<u>4</u>	159.	<u>1</u>	160.	<u>2</u>	161.	<u>1</u>
162.	<u>4</u>	163.	<u>2</u>	164.	<u>2</u>	165.	<u>3</u>	166.	<u>1</u>	167.	<u>2</u>	168.	<u>4</u>
169.	<u>1</u>	170.	<u>2</u>	171.	<u>2</u>	172.	<u>4</u>	173.	<u>2</u>	174.	<u>2</u>	175.	<u>3</u>
176.	<u>1</u>	177.	<u>2</u>	178.	<u>3</u>	179.	<u>4</u>	180.	<u>3</u>				