Monthly Progressive Test

Class: IX

Subject: PCMB

Academic Excellence Programme
TECHNO ACE

Test Booklet No.: MPT01 **Test Date: 07072025**

Time: 120 mins **Full Marks: 200**

Important Instructions :

1. The Test is of 120 mins duration and the Test Booklet contains 100 multiple choice questions of single correct option only. There are four sections with four subjects. You have to attempt all 100 questions (Candidates are advised to read all 100 questions). Questions 1 to 25 contain Physics, Questions 26 to 50 contain Chemistry, Questions 51 to 75 contain Mathematics, Questions 76 to 100 contain Biology.
2. Each question carries 2 marks. For each correct response, the candidate will get 2 marks. There is no negative mark for wrong response. The maximum mark is 200.
3. Use Blue / Black Ball point Pen only for writing particulars marking responses on Answer Sheet.
4. Rough work is to be done in the space provided for this purpose in the Test Booklet only.
5. On completion of the test, the candidate must handover the Answer Sheet to the invigilator before leaving the Room / Hall. The candidates are allowed to take away this Test Booklet with them.
6. The CODE for this Booklet is Off Line MPT01 07072025.
7. The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your UID No. anywhere else except in the specified space. Use of white fluid for correction is NOT permissible on the Answer Sheet. **Do not scribble or write on or beyond discrete bars of OMR Sheet at both sides**.
8. Each candidate must show on-demand his/her Registration document to the Invigilator.
9. No candidate, without special permission of the Centre Superintendent or Invigilator, would leave his/her seat.
10. Use of Electronic Calculator/Cellphone is prohibited.
11. The candidates are governed by all Rules and Regulations of the examination with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per Rules and Regulations of this examination.
12. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
13. There is no scope for altering response mark in Answer Sheet.

Space For Rough Works

Physics

1. Newton's first law of motion gives us qualitative definition of force.

   Ⓐ false Ⓑ sometimes false Ⓒ true Ⓓ sometimes true

2. If both, mass and velocity were made twice, the linear momentum would become

   Ⓐ two times Ⓑ four times Ⓒ unaltered Ⓓ none of the above

3. Corresponding to a given displacement, distance travelled may be larger than displacement.

   Ⓐ false Ⓑ true

   Ⓒ data insufficient Ⓓ they are always equal

4. Distance = length of actual path traversed.

   Ⓐ true Ⓑ false Ⓒ sometimes true Ⓓ we can not say

5. When final position coincides with the initial position, displacement = 0 but distance $\neq 0$

   Ⓐ false Ⓑ may be false Ⓒ difficult to say Ⓓ true

6. A train 100 m long moving on a straight level track passes a pole in 5 s. The time it will take to cross a bridge 500 m long.

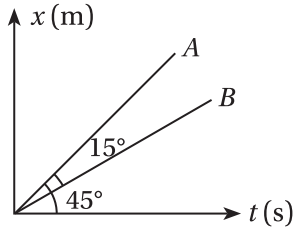
   Ⓐ 20 s Ⓑ 30 s Ⓒ 40 s Ⓓ 45 s

7. A car travelling at 36 km/h speed upto 72 km/h in 5 seconds. If the same car stops in 20 s, then retardation is

   Ⓐ 1 m/s^2 Ⓑ 1.5 m/s^2 Ⓒ 2 m/s^2 Ⓓ 0.5 m/s^2

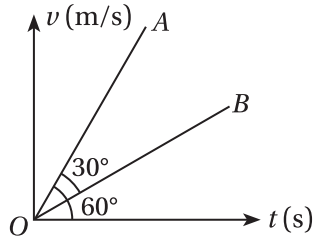
8. Usha swims in a 90 m long pool. She covers 180 m in one minute by swimming from one end to the other and back along the same straight path. Average speed and average velocity of Usha are

   Ⓐ 2 m/s, 2 m/s Ⓑ 3 m/s, 1 m/s Ⓒ 3 m/s, zero Ⓓ 3 m/s, 2 m/s

9. 

   $V_A : V_B =$

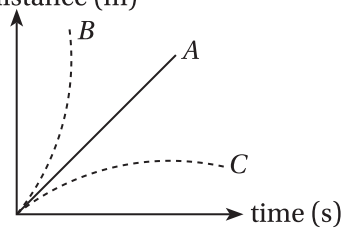
   Ⓐ $1:\sqrt{3}$ Ⓑ $\sqrt{3}:1$ Ⓒ $\sqrt{2}:1$ Ⓓ $1:\sqrt{2}$

10. 

    Acceleration of A : acceleration of B =

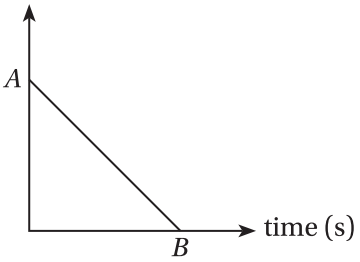
    Ⓐ 2 : 1 Ⓑ 1 : 2 Ⓒ 3 : 1 Ⓓ 4 : 1

11. distance (m)



Ⓐ graph A — Acceleration is 0
Ⓑ graph B — Acceleration is positive
Ⓒ graph C — A case of retardation
Ⓓ All of these

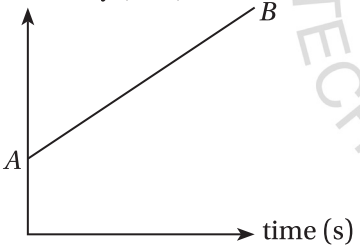
12. velocity (m/s)



The graph AB is for

Ⓐ acceleration
Ⓑ retardation
Ⓒ uniform velocity
Ⓓ none of these

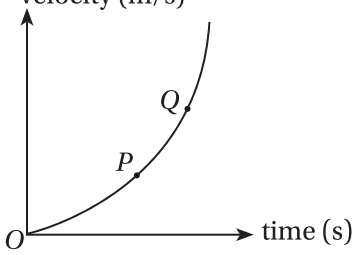
13. velocity (m/s)



The graph AB is for

Ⓐ acceleration
Ⓑ retardation
Ⓒ uniform velocity
Ⓓ all of these

14. velocity (m/s)



Ⓐ acceleration of body at P is greater than acceleration at Q
Ⓑ acceleration at P is less than acceleration at Q
Ⓒ $a_P = a_Q$
Ⓓ none of these

15. The speed of the tip of second's hand of a watch of length 1.5 cm.

Ⓐ 0.1 cm/s
Ⓑ 0.3 cm/s
Ⓒ 0.16 cm/s
Ⓓ 0.2 cm/s

■ Assertion-Reason type Questions (Q16–Q19)

Directions: Read the following questions and choose any one of the following four responses.

Ⓐ If both Assertion and Reason are true and Reason is the correct explanation of the Assertion.

Ⓑ If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

Ⓒ Assertion is true but the Reason is false.

Ⓓ Assertion is False and Reason is true.

16. **Assertion:** To describe acceleration we need to describe its direction also.
Reason: Acceleration is a vector quantity.

17. **Assertion:** The distance-time graph of a moving object is a straight line at an angle with time axis.
Reason: As the object is moving with uniform speed.

18. **Assertion:** At highest point of vertical motion under gravity, the particle has zero velocity.
Reason: At highest point acceleration due to gravity is 9.8 m/s^2.

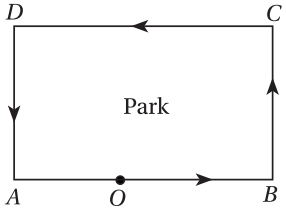
19. **Assertion:**

Reason: As a driver drives a car on a straight, busy road.

■ Case Based Type (Q20–Q22)

(I) When a body travels equal distances in equal interval of time, over a circular path, its speed is uniform. The motion of the body is said to be uniform circular motion. Mr. Rabinhood is one athlete. Every morning, he practices walking around the local park.

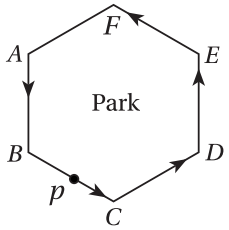
20. When he walks around a rectangular park with uniform speed, starting from *O*, the number of times his velocity changes is



Ⓐ 2 Ⓑ 3

Ⓒ 4 Ⓓ 5

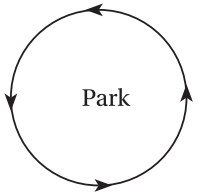
21. When he walks around a hexagonal park with uniform speed starting from *p*, for one trip the number of times his velocity changes is



Ⓐ 2 Ⓑ 3

Ⓒ 5 Ⓓ 6

22. When he walks around a circular park with uniform speed, then at every point his



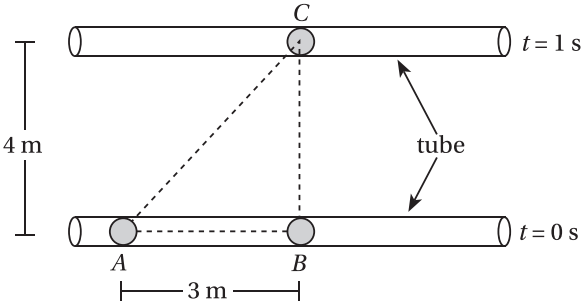
Ⓐ velocity changes at every point Ⓑ velocity remains unchanged

Ⓒ velocity changes two times Ⓓ all the above

■ **Case Based Type (Q23–Q25)**

(II) If a particle is given two velocities simultaneously its resultant velocity is different from the two velocities. Suppose a small ball is moving inside a long tube at a speed 3 m/s and the tube itself is moving in the room at a speed 4 m/s along a direction perpendicular to its length.

23.



With reference to the above, the aforesaid figure is

Ⓐ correct
Ⓑ may be correct
Ⓒ incorrect
Ⓓ we can not say as of insufficient information

24. The displacement of ball after 1 s from starting is

Ⓐ 4 m
Ⓑ 3 m
Ⓒ 5 m
Ⓓ 7 m

25. The magnitude of velocity of particle after 1 s from the start is

Ⓐ 4 m/s
Ⓑ 3 m/s
Ⓒ 7 m/s
Ⓓ 5 m/s

Chemistry

26. A student takes some water in a beaker & heats it over a flame for determining its boiling point. He keeps on taking its temperature readings. He would observe that the temperature of water :

Ⓐ keeps on increasing regularly
Ⓑ keeps on increasing irregularly
Ⓒ first increases slowly, then decreases rapidly
Ⓓ first increases regularly and then becomes constant

27. Fluids are :

Ⓐ Liquids and gases
Ⓑ Solids and gases
Ⓒ Liquids and solids
Ⓓ Only liquids

28. The temperature at which a solid changes into liquid at atmospheric pressure is called

Ⓐ Melting point
Ⓑ Boiling point
Ⓒ Condensation
Ⓓ Sublimation

29. Which of the following is not a chemical change?

Ⓐ Passing of steam over red hot coke
Ⓑ Colour change of dilute nitric acid upon long standing
Ⓒ Absorption of moisture by P_2O_5
Ⓓ Absorption of moisture by $CaCl_2$

30. Which of the following causes the temperature of a substance to remain constant while it is undergoing a change in its state ?

Ⓐ Latent heat
Ⓑ Sublimation
Ⓒ Loss of heat
Ⓓ None of these

31. Gas has _____ shape and _____ volume

Ⓐ Definite, definite Ⓑ Definite, indefinite Ⓒ indefinite, definite Ⓓ indefinite, indefinite

32. Boiling of a liquid takes place at :

Ⓐ a fixed temperature and lower than its boiling

Ⓑ a fixed temperature and normal atmospheric pressure

Ⓒ a fixed temperature higher than its boiling point

Ⓓ a fixed temperature andhigher than atmospheric pressure

33. On which factor the rate of evaporation does not depend.

Ⓐ Surface area Ⓑ Material of the vessel Ⓒ Temperature Ⓓ Humidity

34. Blackening of silverware is a :

Ⓐ Chemical change Ⓑ Decomposition reaction Ⓒ Physical change Ⓓ Evaporation process

35. Which of the following are responsible for the change in state of solid carbondioxide when kept exposed to air?

(i) increase in pressure, (ii) Increase in temperature, (iii) Decrease in pressure, (iv) Decrease in temperature

Ⓐ (i) & (ii) Ⓑ (i) & (iii) Ⓒ (ii) & (iii) Ⓓ (iii) & (iv)

36. The light particles of the gas escape through the pores of a ballon faster than heavy particles. Two ballons are filled to the same volume, one with helium and other with nitrogen. Which of the following is correct information about the size of ballons after 48 hrs.?

Ⓐ Both ballons have same size Ⓑ Nitrogen filled ballon will be smaller

Ⓒ Helium filled ballon will be smaller Ⓓ can not be predicted

37. A scientist raises the temperature of a solid of mass 40 kg from 20°c to 40°c, if the energy used by the solid is 8000 J, the specific capacity of the solid would be :

Ⓐ $2\ J\ (kg)^{-1}\ (°c)^{-1}$ Ⓑ $5\ J\ (kg)^{-1}\ (°c)^{-1}$ Ⓒ $10\ J\ (kg)^{-1}\ (°c)^{-1}$ Ⓓ $20\ J\ (kg)^{-1}\ (°c)^{-1}$

38. A students heats up an impure water gram 40°c to 60°c with the thermal energy of 5000 J, the heat capacity of the water would be :

Ⓐ $250\ J\ (°c)^{-1}$ Ⓑ $125\ J\ (°c)^{-1}$ Ⓒ $-250\ J\ (°c)^{-1}$ Ⓓ $-125\ J\ (°c)^{-1}$

39. Vibratory motion is present in _____.

Ⓐ solids Ⓑ liquid Ⓒ gases Ⓓ plasma state

40. A gas can be best liquefied:

Ⓐ by increasing the temperature

Ⓑ by lowering the pressure

Ⓒ by increasing the pressure and lowering the temperature

Ⓓ None of these

Assertion and Reason : (Q. 41 - 44)

Directions: Read the following questions and choose any one of the following four responses.

a: Assertion and Reason both are correct and Reason is the correct explanation of Assertion.
b: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion.
c: Assertion is correct but Reason is wrong.
d: Assertion is wrong but Reason is correct.

41. **Assertion (A) :** Plasma state can exists every where

Reason (R) : Plasma state of matter is a fused ionic state.

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

42. **Assertion (A) :** Molecules can exist independently.

Reason (R) : Molecule are made up of atoms.

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

43. **Assertion (A) :** Solid carbon dioxide is called Dry ice.

Reason (R) : Dry ice does not sublimes when kept :

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

44. **Assertion (A) :** Kinetic energy solid decreases when heated.

Reason (R) : Solid particles vibrates towards its mean position.

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

Case Base Question (Q45 to Q47)

Evaporation is a surface phenomenon particles from the bulk (whole) of the liquid change into vapour state. Evaporation is a surface phenomenon. Particles from the surface given enough energy to overcome the forces of attraction present in liquid and change into the vapour state : The rate of evaporation depends upon the surface area exposed to the atmospheric, the temperature humidity & the wind speed. Evaporation also causes cooling.

45. The most volatile substance among the following is :

Ⓐ acetone Ⓑ benzene Ⓒ alcohol Ⓓ water

46. Rate of diffusion of gas is :

Ⓐ directly propotional to its density
Ⓑ directly propotional to its molecule mass
Ⓒ inversely propotional to the square root of its molecular mass
Ⓓ directly propotional to the square of its molecular mass

47. The change of a liquid into vapour is called :

Ⓐ vapourization Ⓑ solidificaion Ⓒ sublimation Ⓓ none of these

Case Base Question (Q48 to Q50)

Matter undergoes a change. The changes are of two types : physical and chemical change. A physical change is : a change that involves only a change in the physical states of matter.

Its chemical properties remain same. Usually increasing the temperature or applying pressure or both brings about physicl change. On reversing the condition ie. reducing he temperature or reducing pressure or both, the original sate of matter is restored. Thus, physical change is reversible. A chemical change is a change that

involves a change in the chemical composition of matter. new substance is formed. In a chemical change the chemical and physical properties of the substance formed will be different from the original substance :

48. When lead carbonate is heated and cooled the change that is observed is :

Ⓐ physical
Ⓑ nuclear change
Ⓒ first chemical & then physical
Ⓓ first physical & then chemical

49. Rain formation is :

Ⓐ Chemical change
Ⓑ Physical change
Ⓒ no change takes place
Ⓓ gravitational phenomenon

50. In a chemical change the properties that changes are :

Ⓐ chemical only
Ⓑ Physical only
Ⓒ both chemical & physical
Ⓓ neither chemical and physical

Mathematics

51. Let f(x) be polynomial of degree 2 satisfying f(k) = k for k = 1, 2 and f(0) = 1 then the value of f(–1)

Ⓐ 1 Ⓑ –1 Ⓒ 2 Ⓓ –2

52. If P (x–1,0) is 3 unit away from origin then the value of x is

Ⓐ –1 Ⓑ –2 Ⓒ –4 Ⓓ –3

53. It is known that (2 + a) and (24 – b) are divisible by 11 then (a + b) must be divisible by

Ⓐ 3 Ⓑ 13 Ⓒ 7 Ⓓ none of these

54. If $A\left(\alpha^2-1,\left|\alpha^2+\alpha+1\right|\right)$ is on Y axis then ordinate of P may be

Ⓐ 1 Ⓑ 2 Ⓒ 4 Ⓓ none of these

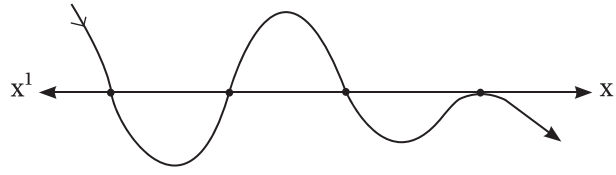
55. Every quadratic polynomial has

Ⓐ exactly two zeroes
Ⓑ atleast two zeroes
Ⓒ at most two zeroes
Ⓓ none of these

56. Number of solution of $(x-1)^2+(x-2)^2+(x-3)^2=0$ is

Ⓐ 1 Ⓑ 2 Ⓒ 3 Ⓓ none of these

57. From the graph calculate the exact number of real roots



Ⓐ 4 Ⓑ 5 Ⓒ at least 5 Ⓓ none of these

58. If x and y are irrational numbers, then (x + y – xy) is

Ⓐ a real number Ⓑ a complex number Ⓒ a rational number Ⓓ an irrational number

59. $0.2\overline{55} = ?$

Ⓐ $\frac{23}{90}$ Ⓑ $\frac{23}{99}$ Ⓒ $\frac{253}{990}$ Ⓓ $\frac{253}{900}$

60. If n is a composite number and $1 \times 2 \times 3 \times \ldots \times (n-1)$ is not divisible by n, how many possibilities exist for n?

Ⓐ 1 Ⓑ 2 Ⓒ 3 Ⓓ 4

61. Find the angles between the lines represente by $x^2 + y^2 = 0$

Ⓐ 0° Ⓑ 30° Ⓒ 45° Ⓓ none of these

62. When f(x) is divided by $\left(x - \frac{b}{a}\right)$ the remainder is R and the quotient is Q. If fx) is divided by (ax – b), what will be the remainder and quotient.

Ⓐ f(ab), aQ Ⓑ $f\left(\frac{b}{a}\right), \frac{Q}{a}$ Ⓒ $f\left(\frac{a}{b}\right), \frac{a}{Q}$ Ⓓ f(ab), bQ

63. The equation of line parallel to $4x + 3y = 5$ and having x-intercept (–3) is

Ⓐ $3x + 4y + 12 = 0$ Ⓑ $3x + 4y = 12$

Ⓒ $4x + 3y - 12 = 0$ Ⓓ $4x + 3y + 12 = 0$

64. The remainder when $f(x) = (x^{45} + x^{25} + x^{14} + x^9 + x)$ is divided by $g(x) = (x^2 - 1)$ is

Ⓐ $4x - 1$ Ⓑ $4x + 2$ Ⓒ $4x + 1$ Ⓓ $4x - 2$

65. If $(3x - 1)^7 = a_7 x^7 + a_6 x^6 + a_5 x^5 + \ldots + a_1 x + a_0$ then $(a_7 + a_6 + a_5 + \ldots + a_1 + a_0)$

Ⓐ 0 Ⓑ 1 Ⓒ 128 Ⓓ 64

Assertion and Reason (Q. No. 66 – 69) :

Directions: Read the following questions and choose any one of the following four responses.

A: Assertion and Reason both are correct and Reason is the correct explanation of Assertion.

B: Assertion and Reason both are correct and Reason is not the correct explanation of Assertion.

C: Assertion is correct but Reason is wrong.

D: Assertion is wrong but Reason is correct.

66. **Assertion (A) :** $p(x) = a_0 x^n + a_1 x^{n-1} + \ldots + a_{n-1} x + a_n$ and $a_0^2 + a_1^2 + \ldots + a_n^2 = 0$ then degree of p(x) is (n + 1) where $a_0, a_1, \ldots\ldots a_n \in R$

Reason (R) : $a^2 + b^2 + c^2 \quad \Rightarrow a = b = c = 0$

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

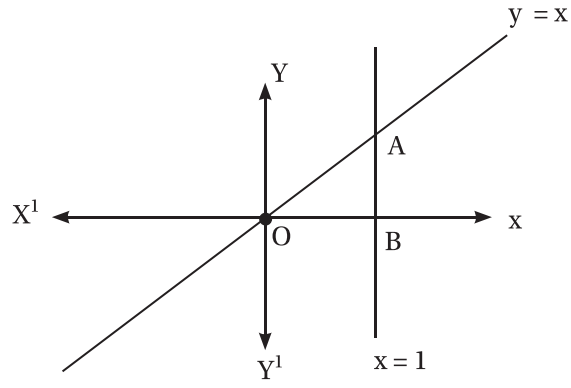
67. **Assertion (A) :** If $\frac{3^x + 33^x + 333^x + 3333^x}{2^x + 22^x + 222^x + 2222^x} = \frac{27}{8}$ then value of x is 3.

Reason (R) : $a^m = a^n \Rightarrow m = n$ when $a > 0, \neq 1$

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

68. **Assertion (A) :** Area of the triangle is 1 square unit.

Reason (R) : Area of the triangle = $\frac{1}{2}$ × base × height



Ⓐ A Ⓑ B Ⓒ C Ⓓ D

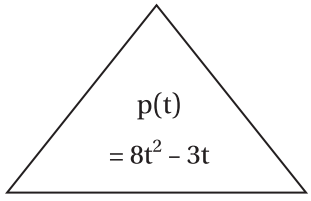
69. **Assertion (A) :** If $2^m - 2^n = 992$, then the value of (m + n) is 10

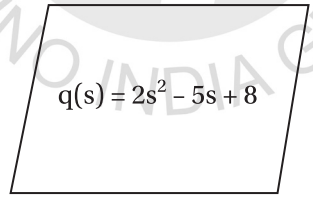
Reason (R) : $2^x = 2^y$ then x = y

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

Case Base Question (Q70 to Q72)

A school organized a mathematics exhibition on its premises. Students from all classes created varios models and games to showcase the application of mathematics in everyday life. To enhance the decorations, they made–themed hangings. One of the students designed two hangings featuring polynomials.





Based on this answer the following questions.

70. The one factor of p(t) is

Ⓐ t Ⓑ 8t + 3 Ⓒ $8t^2$ Ⓓ – 3t

71. The value of q(r) is

Ⓐ 2 Ⓑ – 5 Ⓒ 8 Ⓓ 5

72. Calculate the value q (–s) + q (s)

Ⓐ 4 (s^2 – 4) Ⓑ 4 (s^2 + 2) Ⓒ 4 (s^2 + 4) Ⓓ none of these

Case Study 2 :

Ravi participated in a mathematics exhibition where he saw a digital maze game based on number systems. The maze had different leves, and to proceed to the next level, he had to solve number system puzzles. Each correct answer opened the next gate.

73. At level 1, Ravi finds the number : $\sqrt{149}+\frac{2}{5}-\sqrt{8}$

Ⓐ Natural number Ⓑ Integer Ⓒ Rational number Ⓓ Irrational number

74. At level 2, Ravi calculate conjugate surds of $\sqrt{5}+2$ as

Ⓐ $\sqrt{5}-2$ Ⓑ $-\sqrt{5}-\sqrt{2}$ Ⓒ $-\sqrt{5}+2$ Ⓓ none of these

75. At level 3, he finds P^P where $P=\sqrt{6+\sqrt{6+\sqrt{6+\sqrt{6+.....\infty}}}}$ as

Ⓐ 36 Ⓑ 4 Ⓒ 256 Ⓓ 27

Biology

76. What is common to *Amoeba* and bacteria?

Ⓐ Both are prokaryotic Ⓑ Both are eukaryotic Ⓒ Both are unicellular Ⓓ Both are disc shaped

77. What is Rudolf Virchow associated with?

Ⓐ Discovery of the first living cell
Ⓑ Coining the term 'nucleus'
Ⓒ Cell Theory
Ⓓ Calling protoplasm the 'physical basis of life'

78. Hemp fibre is _____.

Ⓐ the largest plant cell Ⓑ a long plant cell Ⓒ the smallest plant cell Ⓓ a spherical plant cell

79. What does a mitochondrion and a bacterial cell have in common?

Ⓐ Both have 70 S ribosomes
Ⓑ Both have chlorophyll
Ⓒ Both are semi autonomous
Ⓓ All of the above

80. What does a mitochondria and chloroplast have in common?

Ⓐ Both have 70 S ribosomes
Ⓑ Both have chlorophyll
Ⓒ Both are autonomous
Ⓓ Both can produce ATP

81. Aleuroplasts are

Ⓐ Leucoplasts storing proteins
Ⓑ Chromoplasts storing pigments, other than chlorophyll
Ⓒ Chromosome without a centromere
Ⓓ Chloroplasts found in prokaryotic cells

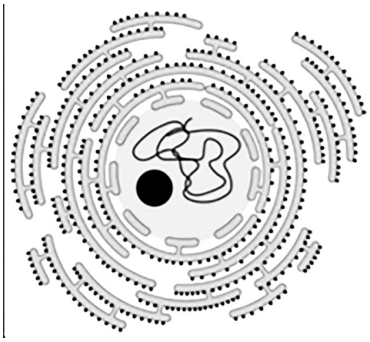
82. Lyosomes are produced by:

Ⓐ Vacuoles Ⓑ Nucleus Ⓒ Golgi body Ⓓ Cell membrane

83. RER and SER are involved in :

Ⓐ Phagocytosis Ⓑ Photostynthesis Ⓒ Membrane biogenesis Ⓓ Cell drinking

84. Identify the organelles shown in the given diagram:



Ⓐ Cell membrane and nucleus
Ⓑ Golgi body and nucleus
Ⓒ Golgi body and centrosome
Ⓓ Endoplasmic reticulum and nucleus

85. In meiosis,_____

Ⓐ two diploid daughter cells are formed
Ⓑ two haploid daughter cells are formed
Ⓒ four haploid daughter cells are formed
Ⓓ four diploid daughter cells are formed

86. Choose the correct statement:

Ⓐ All living cells need not have nucleus
Ⓑ All living cells need not have cytoplasm
Ⓒ Protoplasm is cytoplasm minus the nucleus
Ⓓ Dead cells have both cytoplasm and nucleus

87. Choose the odd one out:

Ⓐ Cells are the structural and functional unit of life
Ⓑ All cells arise from pre-existing cells
Ⓒ Some cells do not have the power to divide
Ⓓ The activities of an organism is the sum total of activities performed by its individual cells

88. Dictyosomes are

Ⓐ Single large Golgi body of plant cells
Ⓑ Small and multiple Golgi body of animal cells
Ⓒ Small and multiple Golgi body of plant cells
Ⓓ Ribosomes of plant cells

89. Identify the human cell which lacks a nucleus upon maturation

Ⓐ WBC Ⓑ RBC Ⓒ Egg Ⓓ Nerve cells

90. In plant cells, the cell wall is —

Ⓐ dynamic and living
Ⓑ rigid and non living
Ⓒ dynamic and non living
Ⓓ rigid and living

Assertion and Reason :

Directions: The questions 91 to 94 have two statements – Assertion (A) and Reason (R). Of the two statements, mark the correct answer from the options given below:

A: Both A and R are true and R is the correct explanation of A.

B: Both A and R are true but R is not the correct explanation of A.

C: A is true but R is false.

D: A is false but R is true.

91. **Assertion (A) :** The cell membrane is made up of cellulose.

Reason (R) : The cell membrane is living.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

92. **Assertion (A) :** Lysosomes can digest their own cells.

Reason (R) : Lysosomes can destroy the worn out organelles of its own cell.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

93. **Assertion (A) :** Mitosis occurs during the formation of gametes.

Reason (R) : Mitosis is an equational division.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

94. **Assertion (A) :** Prokaryotes are devoid of cell membrane.

Reason (R) : Cell wall offers protection to prokaryotic cells.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

Observe the given diagrams and answer the following questions: (95-97)

Fig. A

Fig. B

Fig. C

95. Choose the most appropriate statement with regards to the cell shown in Fig. C .

Ⓐ Has been kept in a hypotonic solution

Ⓑ Has gained water from the surrounding solution

Ⓒ Has increased in size

Ⓓ All of the above

96. What is the nature of the solution surrounding the cell in Fig.A.

Ⓐ More concentrated than the solution inside the cell.

Ⓑ Less concentrated than the solution inside the cell.

Ⓒ Both the solutions are isotonic

Ⓓ The size of the cell is not dependent on the concentration of the surrounding solution

97. What happens to the cell shown in Fig.B?

Ⓐ Does not show osmosis

Ⓑ Exosmosis exceeds endosmosis

Ⓒ Exosmosis = Endosmosis

Ⓓ Endosmosis exceeds exosmosis

Read the given passage and answer the following questions: (98-100)

Vacuoles are storage sacs of the cells. They may be fluid filled or solid filled and are bounded by a single membrane. They help in digestion, as well as, excretion in organisms like *Amoeba*.

98. Name the membrane surrounding the vacuole

Ⓐ Cristae Ⓑ Thylakoid Ⓒ Tonoplast Ⓓ Amyloplast

99. In a mature plant cell,_____

Ⓐ the vacuole expands and pushes the protoplasm towards the sides of the cell

Ⓑ the vacuole stores cell sap

Ⓒ the vacuole maintains the shape of the cell

Ⓓ All of the above

100. Which of the given organelles also have a single membrane covering, like a vacuole?

Ⓐ Mitochondria Ⓑ Ribosome Ⓒ Chloroplast Ⓓ None of the above