



# Monthly Progressive Test

Class: IX (S)

Subject: PCMB



Test Booklet No.: MPT06

Test Date: 

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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 

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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 scibble 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. The evidence to show existence of force acting between Sun and Earth and directed towards the Sun is
  - (A) Spin motion of Earth about its axis
  - (B) Deviation of falling body
  - (C) Phenomenon of day and night
  - (D) Apparent motion of the Sun around the Earth
2. The value of G
  - (A) Decreases with height
  - (B) Is zero at the centre of Earth
  - (C) Increases with height
  - (D) Remains same everywhere
3. If the distance between the Sun and Earth is increased to twice then the  $F_{\text{new}}$  will
  - (A) Decrease by 75%
  - (B) Increase 25%
  - (C) Remain same
  - (D) Decrease by 25%
4. Two bodies having masses  $u$  and  $v$  are separated by a distance  $x$ , then the gravitational force between them will be  $F =$ 
  - (A)  $\frac{gw}{x}$
  - (B)  $\frac{Gw}{x^2}$
  - (C)  $\frac{Gw^2}{x}$
  - (D)  $\frac{gw}{x^2}$
5. If the acceleration due to gravity of earth is increased by 2%, keeping the mass of Earth same, then the radius of earth will shrink by
  - (A) 1%
  - (B) 1.5%
  - (C) 2%
  - (D) 2.5%
6. If it is safe to jump from a height of 2 m on the earth and corresponding safe height on another planet is 4 m. Then acceleration due to gravity on that planet is
  - (A)  $9.8 \text{ m/s}^2$
  - (B)  $4.9 \text{ m/s}^2$
  - (C)  $1.96 \text{ m/s}^2$
  - (D)  $19.6 \text{ m/s}^2$
7. In case of planetary motion in elliptical orbit around Sun, the physical quantity which cannot change is
  - (A) Areal velocity
  - (B) Speed
  - (C) Gravitational force
  - (D) Velocity
8. The relation  $g \cdot R = GM/R$  is (R is radius of earth, M is mass of earth)
  - (A) False
  - (B) Sometimes true
  - (C) True
  - (D) None of the above.
9. At a height H above the surface of earth, acceleration due to gravity is  $g \cdot [1 - 2(H/R)]$ . The statement is
  - (A) False
  - (B) May be false
  - (C) true
  - (D) None of these.
10. If one goes deep inside the earth then the value of g
  - (A) Increases
  - (B) Decreases
  - (C) Remains same
  - (D) Data insufficient.

**Assertion-Reason type Questions (11-12):**

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

- A. If both Assertion and Reason are true and Reason is the correct explanation of the Assertion.
- B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
- C. If Assertion is true but the Reason is false.
- D. If Assertion is false but Reason is true.

**11. Assertion :** The particle moves freely under gravity.

**Reason :** The acceleration has the same value and direction ,whether the particle falls, moves up or moves at some angle.

- Ⓐ A                      Ⓑ B                      Ⓒ C                      Ⓓ D

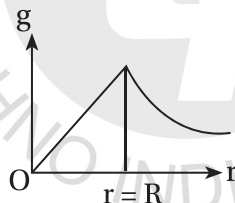
**12. Assertion :** If we drop a ball from a height, it falls.

**Reason :** When a particle falls freely under gravity ,as time passes its velocity decreases.

- Ⓐ A                      Ⓑ B                      Ⓒ C                      Ⓓ D

**Case Based Questions (13-25):**

Variation of  $g$  with distance  $r$  from the centre of earth, is shown in the figure



**13.** From centre to the surface of earth, the value of  $g$

- Ⓐ Increases                      Ⓑ Decreases                      Ⓒ Remains constant Ⓓ None of these.

**14.** The force of gravitation exerted on one body by the other is  $F$ . If the mass of each body is doubled, find the new force in terms of  $F$ .

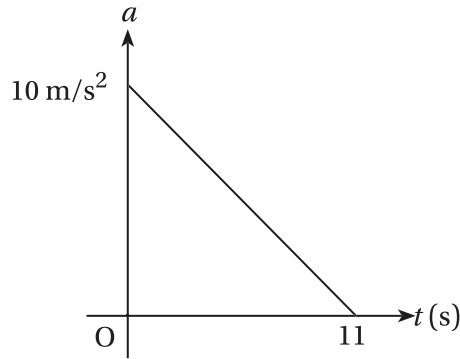
- Ⓐ  $2F$                       Ⓑ  $F$                       Ⓒ  $\frac{F}{2}$                       Ⓓ  $4F$

**15.** The force of gravitation between the two objects is  $F$  when they are kept at some distance  $r$  on the earth's surface. If the objects are kept now on the surface of moon at same separation, then find the force of gravitation between them in terms of  $F$ .

- Ⓐ  $2F$                       Ⓑ  $F$                       Ⓒ  $\frac{F}{2}$                       Ⓓ  $4F$

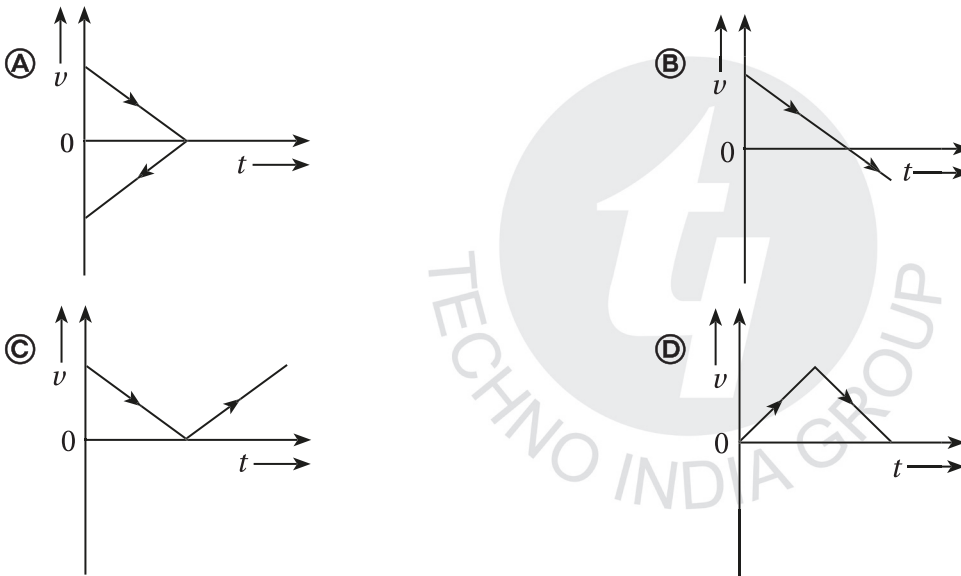
**16.** A particle starts from rest. Its acceleration ( $a$ ) versus time ( $t$ ) is as shown in the figure. The maximum speed of the particle will be

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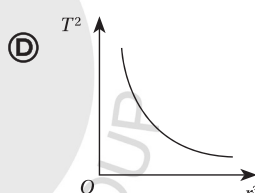
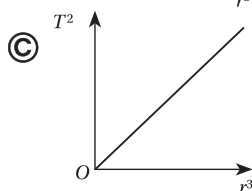
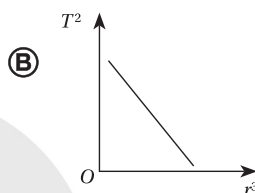
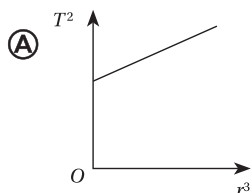
- (A)  $110 \text{ m/s}$       (B)  $55 \text{ m/s}$       (C)  $550 \text{ m/s}$       (D)  $660 \text{ m/s}$

17. A body is thrown vertically upwards. Which one of the following graphs correctly represent the velocity vs time?

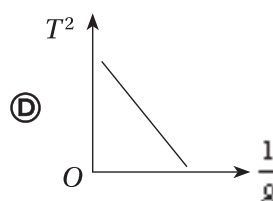
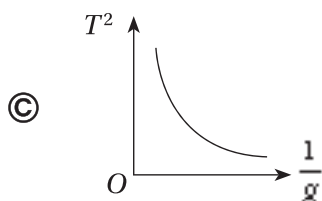
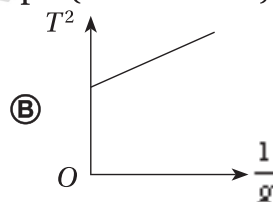
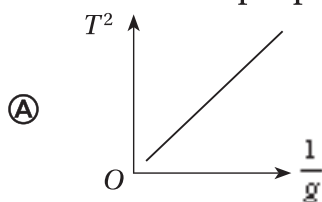


18. If  $v$ - $t$  graph is linear and  $v$  is decreasing, then acceleration is?  
(A) positive      (B) retardation      (C) zero      (D) none of these
19. In  $v = u + at$ , if  $u = 0$  unit, then  $v$  versus  $t$  graph is  
(A) straight line passing through origin  
(B) curve passing through origin  
(C) straight line not passing through origin  
(D) curve not passing through origin
20. In uniform circular motion the velocity  
(A) changes at every point      (B) is constant  
(C) is directed towards the centre      (D) none of these

21. If the acceleration due to gravity of earth is increased by 2%, keeping the mass of Earth same, then the radius of earth will shrink by, can be worked out by using  $GM = gR^2$
- (A) True                      (B) False                      (C) May be true                      (D) We can't say
22. If it is safe to jump from a height of 2 m on the earth then corresponding safe height on another planet is . (The acceleration due to gravity on that planet is 2g)
- (A) 1 m                      (B) 0.5 m                      (C) 1.96 m                      (D) 19.6 m
23. The depth at which the acceleration due to gravity decrease by 64% of its value on the surface of Earth is [R = radius of Earth]
- (A) 0.36R                      (B) 0.5R                      (C) 0.64R                      (D) 0.4R
24. With reference to Kepler's law of time period select the correct graph



25. In case of simple pendulum, select the correct graph ( $l = \text{constant}$ )



## Chemistry

26. Kalium is the Latin name of \_\_\_\_\_
- (A) Potassium                      (B) Krypton                      (C) Calcium                      (D) Proton
27. The gram molecular mass of ammonia is \_\_\_\_\_. [N = 14, H = 1]
- (A) 17 grams                      (B) 31 grams                      (C) 20 grams                      (D) 25 grams

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28. Atomic mass of calcium is 40. The mass of 2.5 gm atoms of calcium is \_\_\_\_\_  
(A) 40 g                      (B) 2.5 g                      (C) 100 g                      (D) 80 g
29. The molecular formula of nitre is \_\_\_\_\_.  
(A)  $\text{NaNO}_3$                       (B)  $\text{KNO}_3$                       (C)  $\text{KNO}_2$                       (D) KCN
30. Valency of an atom is  
(A) Its combining power to form a compound  
(B) Does not indicate the formula of a compound  
(C) Always 1                      (D) All of these
31. Important information required to write a chemical formula is  
(A) Symbols                      (B) Valency  
(C) Number of electrons in the atom                      (D) Both (A) & (B)
32. Which of the following is/are correct?  
(A) Number of moles of solute in one litre of solution is molality  
(B) Ratio of number of moles of a component to total number of moles is known as mole fraction  
(C) Number of moles of solute in one kilogram of solvent is molarity  
(D) All of these are correct

**Assertion Reason Type Question (33–34):**

Read the two statements carefully and select the correct option given below.

**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

33. **Assertion (A):** To determine atomic weight of an element, oxygen scale is considered  
**Reason (R):** Oxygen is a highly reactive molecule and it can react with most of the elements  
(A) A                      (B) B                      (C) C                      (D) D
34. **Assertion (A):** 8 gm oxygen molecule (atomic mass : O = 16) is equal to 0.25 mole oxygen molecule  
**Reason (R):** Number of mole of a molecule =  $\frac{\text{Given mass}}{\text{Molecular mass}}$   
(A) A                      (B) B                      (C) C                      (D) D

**Case Based Questions (35–36):**

Number of mole is defined by the gm - atomic mass of an atom or gm - molecular mass of a molecule. Now, 1 mole is equal to Avogadro number of atoms or molecules or ions and the number is  $6.022 \times 10^{23}$ . Now, number of mole is defined as  $\frac{\text{given mass of an element}}{\text{atomic mass}}$  (for

an atom) and  $\frac{\text{given mass of a substance}}{\text{molecular weight}}$ . If the number of atoms or molecules are given

then it is defined as  $\frac{\text{number of atoms or molecules}}{6.022 \times 10^{23}}$ .

35. What is the correct value of number of molecules of 0.9 gm carbon (atomic mass : C = 12)  
 (A) 0.045 mole      (B) 0.065 mole      (C) 0.075 mole      (D) 0.085 mole
36.  $12.044 \times 10^{22}$  is the correct number of moles of (atomic mass : N = 14)  
 (A) 5.6 gm nitrogen molecules      (B) 0.56 gm nitrogen molecules  
 (C) 2.8 gm nitrogen molecules      (D) 0.28 gm nitrogen molecules
37. Consider the equation  $2\text{H}_2 + \text{O}_2 \longrightarrow 2\text{H}_2\text{O}$ . What mass of water will be produced, if 0.1 gm hydrogen is completely reacting with oxygen [atomic mass : H = 1, O = 16] ?  
 (A) 0.18 g      (B) 0.45 g      (C) 0.90 g      (D) 0.36 g
38. Consider the equation  $\text{C} + \text{O}_2 \longrightarrow \text{CO}_2$ . If  $3.011 \times 10^{22}$  carbon atoms are reacting then what mass of  $\text{CO}_2$  gas will be produced ? [atomic mass : C = 12, O = 16, Avogadro number =  $6.022 \times 10^{23}$ ]  
 (A) 4.4 gm      (B) 2.2 gm      (C) 0.44 gm      (D) 0.22 gm
39. Consider the reaction  $\text{Na}_2\text{CO}_3 + 2\text{HCl} \longrightarrow 2\text{NaCl} + \text{CO}_2 + \text{H}_2\text{O}$ . How many number of HCl molecules will react to produce 0.22 gm  $\text{CO}_2$  gas ? [atomic mass : C = 12, O = 16, Avogadro number =  $6.022 \times 10^{23}$ ]  
 (A)  $6.022 \times 10^{21}$       (B)  $3.011 \times 10^{21}$       (C)  $12.044 \times 10^{21}$       (D)  $6.022 \times 10^{22}$
40. What is the percentage of oxygen in calcium carbonate [atomic mass : Ca = 40, C = 12, O = 16] ?  
 (A) 24%      (B) 52%      (C) 48%      (D) 36%
41. Consider the given data and select the correct mathematical relationships given below  
 X = Atomicity of aluminium bicarbonate molecule  
 Y = Atomicity of aluminium sulphate molecule  
 Z = Atomicity of calcium phosphate molecule  
 (I)  $\frac{Y+X}{2} > Z$       (II)  $Y > X > Z$       (III)  $\frac{Y+Z}{2} < X$   
 (A) I, II      (B) II, III      (C) I, III      (D) I, II, III



42. Boiling of a liquid takes place at  
 (A) a fixed temperature lower than its boiling point  
 (B) a fixed temperature and normal atmospheric pressure  
 (C) a fixed temperature higher than its boiling point  
 (D) a fixed temperature and higher than atmospheric pressure
43. Brownian movement is due to  
 (A) Convection currents  
 (B) Attractive forces between the particles of dispersed phase and the dispersion medium.  
 (C) Impact of particles of the dispersion medium on the particles of the dispersed phase.  
 (D) Heat changes in liquid state.
44. The best method to separate the components of an ink is  
 (A) Chromatography (B) Evaporation (C) Filtration (D) Sublimation
45. Find out wrong statements  
 (I) Oil in water is an example of liquid - liquid homogeneous mixture  
 (II) Brass is an example of solid - solid heterogeneous mixture  
 (III) Nitric acid in water is an example of liquid - liquid heterogeneous mixture  
 (A) I, II (B) II, III (C) I, III (D) I, II, III
46. Among the following data which are equal to 0.02 mole ?  
 [Atomic mass : sodium = 23, carbon = 12, oxygen = 16, Avogadro number =  $6.022 \times 10^{23}$  ]  
 (I) 0.46 g sodium atom (II)  $1.2044 \times 10^{21}$  water molecules (III) 0.88 g carbon dioxide  
 (A) I, II, III (B) I, II (C) II, III (D) I, III
47. How many atoms of sulphur are present in 0.1 mole of  $S_8$  molecule? (Atomic Weight S = 32)  
 (A)  $2.56 \times 10^{23}$  atom (B)  $1.28 \times 10^{23}$  atom (C)  $4.817 \times 10^{23}$  atom (D)  $48.17 \times 10^{23}$  atom
48. X = Number of moles of 2 gm calcium atoms [atomic mass of calcium = 40]  
 Y = Number of moles of  $18.066 \times 10^{21}$  iron atoms [Avogadro number =  $6.022 \times 10^{23}$  ]  
 Z = Number of moles of 0.1 gm calcium carbonate [atomic mass : calcium = 40, carbon = 12, oxygen = 16]  
 Now, the correct value of [X + Y + Z] will be equal to  
 (A) 0.0405 (B) 0.405 (C) 0.081 (D) 0.81

**Case study based Questions (49):**

Read the passage given below and answer the question that follow:

A mole is a collection of  $6.022 \times 10^{23}$  particles and the number  $6.022 \times 10^{23}$  is called Avogadro's number. The mass of this number of atom in an element is equal to its gram atomic mass and mass of this number of molecules in a compound is equal to its gram molecular mass. The volume occupied by this number of molecules of a gas at N.T.P. is 22.4 C. When  $6.022 \times 10^{23}$  molecules of a substance are dissolved in 1L of solution, the solution is Known as 1 molar solution.

49. A closed container has  $15.055 \times 10^{23}$  dry and pure nitrogen molecules. If  $18.066 \times 10^{21}$  molecules are released from that container then the correct mole number of the remaining nitrogen molecules is

- (A) 2.77 mole                      (B) 2.47 mole                      (C) 3.27 mole                      (D) 2.37 moles

**Assertion Reason Type Question (50) :**

Read the two statements carefully and select the correct option given below.

**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

50. **Assertion (A):** Both 32g of  $\text{SO}_2$  and 8 g of  $\text{CH}_4$  contain same number of molecules

**Reason (R):** Equal moles of two compounds contain same number of molecules.

- (A) A                                      (B) B                                      (C) C                                      (D) D

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**Mathematics**

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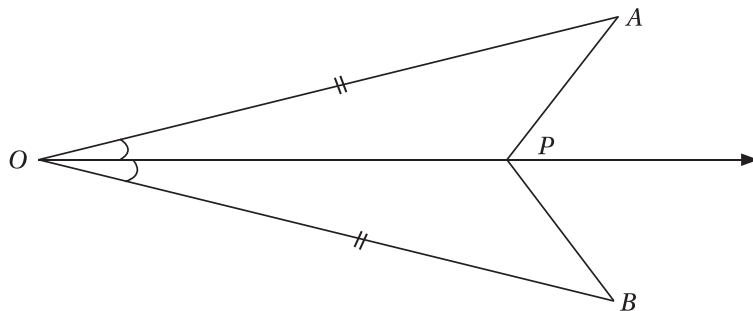
51. Abscissa of all the points on x-axis is \_\_\_\_\_.

- (A) 0                                      (B) 1                                      (C) 2                                      (D) any number

52. The line  $x - 7 = 0$  is

- (A) parallel to y-axis                      (B) parallel to x-axis  
(C) passing through the origin                      (D) none of these

53.  $\triangle OAP \cong \triangle OBP$  in given figure. The criteria by which the triangles are congruent is

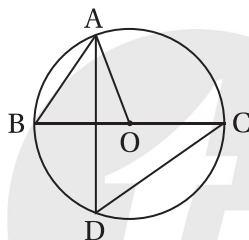


- (A) SAS                      (B) SSS                      (C) RHS                      (D) ASA

54. In a parallelogram ABCD,  $\angle BAD = 75^\circ$ ,  $\angle CBD = 65^\circ$ ; then the value of  $\angle BDC$  is

- (A)  $40^\circ$                       (B)  $45^\circ$                       (C)  $50^\circ$                       (D)  $60^\circ$

55. In this figure, BC is a diameter of the circle and  $\angle BAO = 60^\circ$ ; then  $\angle ADC$  is equal to

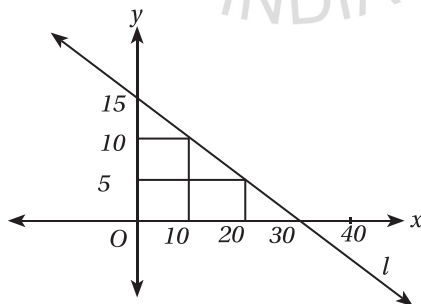


- (A)  $30^\circ$                       (B)  $45^\circ$                       (C)  $60^\circ$                       (D)  $120^\circ$

56. The perimeter of the triangle formed by the points O (0, 0), B(1, 0) and C(0, 1) is

- (A)  $(\sqrt{2} - 1)$  units                      (B)  $(\sqrt{2} + 1)$  units                      (C) 3 units                      (D)  $(2 + \sqrt{2})$  units

57. If  $(20, -a)$  lies on line  $l$  whose graph is given below, then the value of  $a$  is



- (A) -5                      (B) 5                      (C) -10                      (D) 10

### Assertion Reason based Questions (58-59):

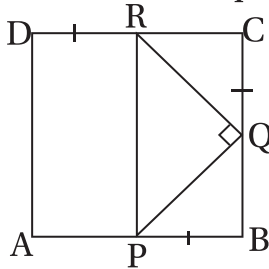
**Directions:** In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).  
 (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

58. **Assertion (A)** : In the given figure, ABCD is a square and  $\angle PQR = 90^\circ$ . If  $PB = QC = DR$ , then  $\angle QPR = 45^\circ$ .



**Reason (R)** : Sum of four angles of a quadrilateral is  $360^\circ$ .

- (A) a                      (B) b                      (C) c                      (D) d

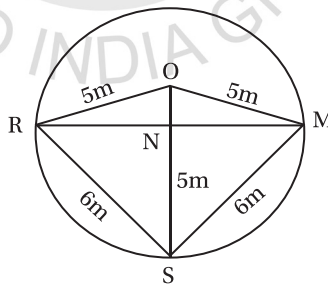
59. **Assertion (A)** : A square is a rectangle.

**Reason (R)** : A rectangle is a quadrilateral with all angles equal to  $90^\circ$ .

- (A) a                      (B) b                      (C) c                      (D) d

### Case Study based Questions (60-62)

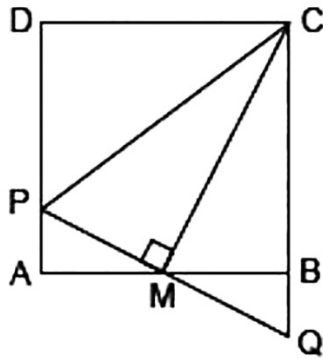
Three girls Reshma, Salma and Mandip are playing a game by standing on a circle of radius 5 m drawn in a park. Reshma throws a ball to Salma; Salma to Mandip, Mandip to Reshma. The distance between Reshma and Salma and between Salma and Mandip is 6 m each.



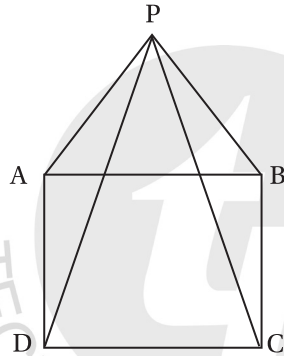
From the above information answer the following questions.

60. Calculate the area of  $\triangle ROS$
- (A)  $12 \text{ m}^2$                       (B)  $15 \text{ m}^2$                       (C)  $6 \text{ m}^2$                       (D)  $20 \text{ m}^2$
61. What is the length of RN, where OS and RM intersect at N ?
- (A) 2.4 m                      (B) 0.24 m                      (C) 0.48 m                      (D) 4.8 m
62. What is the distance between Reshma and Mandip ?
- (A) 9.6 m                      (B) 0.96 m                      (C) 0.48 m                      (D) 4.8 m

63. In the following diagram, ABCD is a square. M is the mid-point of AB and PQ is perpendicular to CM. Which of the following is correct?



- (A)  $PA = AM$       (B)  $MC = CQ$       (C)  $PA = MB$       (D)  $PC = CQ$
64. In the following diagram, ABCD is a square and  $\Delta APB$  is an equilateral.  $DP =$



- (A)  $AB$       (B)  $CP$       (C)  $CD$       (D)  $PA$
65. If the middle points of the sides of a triangle be  $(-2, 3)$ ,  $(4, -3)$  and  $(4, 5)$ , then centroid of triangle is

- (A)  $\left(\frac{5}{3}, 2\right)$       (B)  $\left(\frac{5}{6}, 1\right)$       (C)  $\left(1, \frac{5}{6}\right)$       (D)  $\left(2, \frac{5}{3}\right)$

66. If  $\sqrt{13 - x\sqrt{10}} = \sqrt{8} + \sqrt{5}$ , then find the value of x

- (A) -5      (B) -6      (C) -4      (D) -2

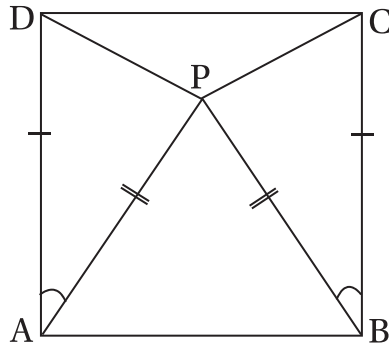
67. If  $a = \frac{1}{3-2\sqrt{2}}$ ,  $b = \frac{1}{3+2\sqrt{2}}$ , then the value of  $a^2 + b^2$  is

- (A) 34      (B) 35      (C) 36      (D) 37

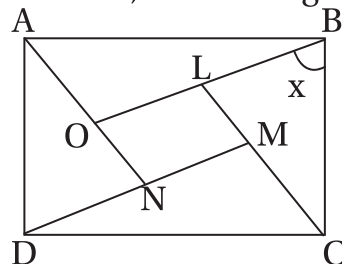
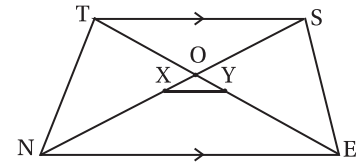
68. The point(s) lie on the line given by the equation  $x + y = 4$  is/are

- (A)  $(4,0)$       (B)  $(0,4)$       (C)  $(2,2)$       (D) All of these

69. In the following diagram, ABCD is a square and  $\triangle APB$  is an equilateral triangle. Find the angles of triangle  $DPC$ .



- (A)  $15^\circ, 150^\circ, 15^\circ$       (B)  $20^\circ, 140^\circ, 20^\circ$       (C)  $75^\circ, 30^\circ, 75^\circ$       (D)  $70^\circ, 40^\circ, 70^\circ$
70. NEST is a trapezium.  $NX = XS$  and  $EY = YT$  then  $XY = ?$
- (A)  $\frac{1}{2} NE$       (B)  $\frac{1}{2} TS$       (C)  $\frac{1}{2} (NE + TS)$       (D)  $\frac{1}{2} (NE - TS)$
71. Two parallel chords of a circle on the same side of the centre are 6 cm and 8 cm in length respectively and the perpendicular distance between them is 1 cm. Find the radius.
- (A) 3 cm      (B) 4 cm      (C) 2 cm      (D) none of these
72. In a quadrilateral ABCD,  $(\angle A + \angle C)$  is 2 times  $(\angle B + \angle D)$ . If  $\angle D = 60^\circ$ , then  $\angle B = ?$
- (A)  $60^\circ$       (B)  $80^\circ$       (C)  $120^\circ$       (D) none of these
73. The vertices of a triangle are A (0, 0), B (0, 2) and C (2, 0). The distance between circumcentre and orthocentre is
- (A)  $\sqrt{2}$  units      (B)  $\frac{1}{\sqrt{2}}$  unit      (C) 2 units      (D)  $\frac{1}{2}$  unit
74. If  $\frac{xy}{x+y} = 2$  and  $\frac{xy}{x-y} = 3$  find x.
- (A) 10      (B) 11      (C) 13      (D) 12
75. ABCD and LMNO both are squares. If angle  $CBL = x$ , then triangles ABO and BCL are congruent by



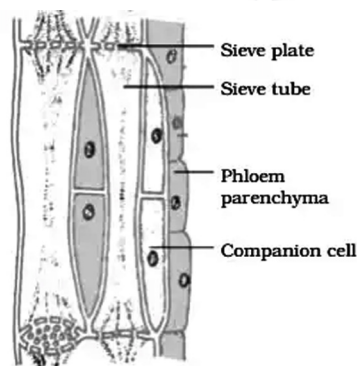
- (A) ASA      (B) SAS      (C) RHS      (D) SSS

## Biology

76. The meristematic cells show  
 (A) Thin walls (B) Prominent nuclei  
 (C) Absence of vacuoles (D) All of these
77. Bones are a type of  
 (A) Cartilage (B) Ligament (C) Connective tissue (D) All of these
78. Cells are living or dead, depends upon presence of  
 (A) Nucleus (B) Mitochondria (C) Protoplasm (D) All of these
79. Which of the following acts as a middle man?  
 (A) WBC (B) Plasma (C) Blood (D) Lymph
80. Striped muscle is specialised to  
 (A) Elongate (B) Contract (C) Relax (D) Both B and C
81. A long fibre like process coming out of the cyton of a nerve cell is  
 (A) Axon (B) Dendron (C) Neurolemma (D) Neurofibrils
82. Cork cambium is  
 (A) Apical meristem (B) Lateral meristem  
 (C) Intercalary meristem (D) None

### Case Based Questions (83–87):

Study the diagram given below and answer the following questions:



Sectional view of phloem

83. Phloem is made up of \_\_\_\_\_ living elements.  
 (A) 1 (B) 2 (C) 3 (D) 4
84. \_\_\_\_\_ is the only dead element of phloem.  
 (A) Companion cells (B) Fibres (C) Phloem parenchyma (D) Sieve tubes

85. The cells of mature sieve tubes \_\_\_\_\_ .  
 (A) have nucleus (B) have cytoplasm + nucleus  
 (C) have cytoplasm (D) are dead
86. Which cells regulate the functions of sieve tubes?  
 (A) Companion cells (B) Parenchyma (C) Fibres (D) All
87. Phloem fibres are :  
 (A) Parenchyma (B) Collenchyma (C) Sclerenchyma (D) None

### Assertion-Reason type Questions (88–90):

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

- A. Both Assertion and Reason are true and Reason is the correct explanation of the Assertion.  
 B. Both Assertion and Reason are true but Reason is not the correct explanation of the Assertion.  
 C. Assertion is true but the Reason is false.  
 D. Assertion is false but Reason is true.

88. **Assertion:** Alveoli are lined by squamous epithelium.

**Reason:** The squamous epithelium helps in exchange of gases.

- (A) a (B) b (C) c (D) d

89. **Assertion:** Cardiac muscles are involuntary.

**Reason:** Cardiac muscles show rhythmic movement.

- (A) a (B) b (C) c (D) d

90. **Assertion:** Adipocytes contain proteins.

**Reason:** Adipose tissue provides insulation to the body.

- (A) a (B) b (C) c (D) d

91. Which among the following is not an animal tissue?

- (A) Areolar tissue (B) Cartilage  
 (C) Epidermal tissue (D) Glandular epithelium

92. The bony covering which specifically covers the brain is –

- (A) Skull (B) Cranium (C) Vertebral column  
 (D) The first two vertebrae of the vertebral column.





**Space For Rough Works**



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