



# Monthly Progressive Test

Class: IX

Subject: PCMB



Test Booklet No.: MPT-04

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 MPT04 30102025.
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. A car accelerates uniformly from rest to a velocity of 20 m/s in 10 s. Find its acceleration.  
 (A) 1 m/s<sup>2</sup>                      (B) 2 m/s<sup>2</sup>                      (C) 4 m/s<sup>2</sup>                      (D) 10 m/s<sup>2</sup>
2. A body moves 100 m in 5 s. Find its average speed.  
 (A) 10 m/s                      (B) 15 m/s                      (C) 20 m/s                      (D) 25 m/s
3. A stone is thrown vertically upward with a velocity of 20 m/s. Find the maximum height ( $g = 10 \text{ m/s}^2$ ).  
 (A) 10 m                      (B) 15 m                      (C) 20 m                      (D) 25 m
4. A train moves with uniform acceleration of  $0.5 \text{ m/s}^2$  for 40 s. Find the distance covered if it started from rest.  
 (A) 200 m                      (B) 300 m                      (C) 400 m                      (D) 800 m
5. A car of mass 1000 kg moves with uniform velocity of 10 m/s. Find the force required to maintain its motion on a frictionless surface.  
 (A) 0 N                      (B) 10 N                      (C) 100 N                      (D) 1000 N
6. A force of 50 N acts on a body of mass 10 kg. Find its acceleration.  
 (A) 2 m/s<sup>2</sup>                      (B) 5 m/s<sup>2</sup>                      (C) 10 m/s<sup>2</sup>                      (D) 50 m/s<sup>2</sup>
7. A body of mass 5 kg is dropped from a height of 10 m. Find its velocity just before hitting the ground ( $g = 10 \text{ m/s}^2$ ).  
 (A) 5 m/s                      (B) 10 m/s                      (C) 14.1 m/s                      (D) 20 m/s
8. Find the gravitational force between two masses of 10 kg each separated by 2 m ( $G = 6.67 \times 10^{-11} \text{ N}\cdot\text{m}^2/\text{kg}^2$ ).  
 (A)  $1.67 \times 10^{-11} \text{ N}$                       (B)  $3.33 \times 10^{-11} \text{ N}$                       (C)  $6.67 \times 10^{-11} \text{ N}$                       (D)  $1.67 \times 10^{-11} \text{ N}$
9. Calculate the weight of a 50 kg object on Earth ( $g = 9.8 \text{ m/s}^2$ ).  
 (A) 400 N                      (B) 450 N                      (C) 490 N                      (D) 500 N
10. The acceleration due to gravity on the Moon is 1/6th of that on Earth. What will be the weight of a 60 kg person on the Moon?  
 (A) 60 N                      (B) 80 N                      (C) 98 N                      (D) 100 N
11. The mass of an object is 6 kg. Find its weight on Earth ( $g = 9.8 \text{ m/s}^2$ ).  
 (A) 49 N                      (B) 58.8 N                      (C) 60 N                      (D) 65 N
12. A body is moving with uniform speed of 5 m/s. Find the distance covered in 2 minutes.  
 (A) 300 m                      (B) 400 m                      (C) 500 m                      (D) 600 m
13. A stone is thrown upward with velocity 10 m/s. Find time to reach maximum height ( $g = 10 \text{ m/s}^2$ ).  
 (A) 0.5 s                      (B) 1 s                      (C) 1.5 s                      (D) 2 s
14. If the pressure on an area of  $0.01 \text{ m}^2$  is  $200 \text{ N/m}^2$ , find the force applied.  
 (A) 1 N                      (B) 2 N                      (C) 4 N                      (D) 5 N

15. A liquid exerts pressure of 400 Pa at a depth of 0.04 m. Find its density ( $g = 10 \text{ m/s}^2$ ).
- (A)  $100 \text{ kg/m}^3$                       (B)  $200 \text{ kg/m}^3$                       (C)  $400 \text{ kg/m}^3$                       (D)  $1000 \text{ kg/m}^3$

**Assertion and Reason: (Q. No. 16 — Q. No. 19)**

**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.
16. **Assertion (A):** The slope of a velocity-time graph gives acceleration.  
**Reason (R):** The rate of change of velocity with respect to time is called acceleration.
- (A) A                      (B) B                      (C) C                      (D) D
17. **Assertion (A):** The gravitational force between two bodies decreases as the distance between them increases.  
**Reason (R):** Gravitational force is directly proportional to the square of the distance between two bodies.
- (A) A                      (B) B                      (C) C                      (D) D
18. **Assertion (A):** A sharp knife cuts objects more easily than a blunt knife.  
**Reason (R):** Pressure is inversely proportional to the area on which the force acts.
- (A) A                      (B) B                      (C) C                      (D) D
19. **Assertion (A):** All objects fall at the same rate in vacuum irrespective of their masses.  
**Reason (R):** In the absence of air resistance, acceleration due to gravity is the same for all bodies.
- (A) A                      (B) B                      (C) C                      (D) D

**Case-Based Questions (2 Cases × 3 Questions Each)**

**Case 1: Universal Law and its Applications**

Every object in the universe attracts every other object with a force known as the gravitational force. This force not only keeps the planets in their orbits around the Sun but also causes objects to fall toward Earth. The strength of this attraction depends on the masses of the objects and the distance between them. The constant of proportionality is called the universal gravitational constant,  $G$ .

The gravitational force acts even over large over large distances and through empty space. It plays a key role in forming galaxies, stars, and planetary systems. On Earth, it gives weight to physical objects and determines how fast they fall.

20. What will happen to the gravitational force between two bodies if the mass of one body is tripled while the other remains constant ?
- (A) It will become three times                      (B) It will become one-third  
 (C) It will become nine times                      (D) It will remain the same
21. Which of the following statements correctly describes the role of gravitational force ?
- (A) It is only responsible for attraction between planets  
 (B) it is a contact force acting between nearby objects  
 (C) It is a universal attractive force acting between all masses  
 (D) It acts only when two bodies are placed.

22. The value of G (universal gravitational constant) –
- (A) Changes from place to place on Earth (B) Depends on the mass of the objects  
 (C) Has a fixed value throughout the universe (D) Varies with altitude.

**Case 2: Application of Newton's Laws**

A boy pulls a 5 kg box on a horizontal surface with a constant velocity using a force of 25 N. The coefficient of friction is constant.

23. Find the frictional force acting on the box.  
 (A) 5 N (B) 10 N (C) 15 N (D) 25 N
24. What is the acceleration of the box?  
 (A)  $0 \text{ m/s}^2$  (B)  $1 \text{ m/s}^2$  (C)  $2 \text{ m/s}^2$  (D)  $3 \text{ m/s}^2$
25. If the boy suddenly increases the pulling force to 35 N, find the new acceleration.  
 (A)  $1 \text{ m/s}^2$  (B)  $2 \text{ m/s}^2$  (C)  $3 \text{ m/s}^2$  (D)  $4 \text{ m/s}^2$

## Chemistry

26. The law of definite proportions was given by :  
 (A) John Dalton (B) Humphry Davy (C) Proust (D) Michael Faraday
27. Kalium is the latin name of \_\_\_\_\_.  
 (A) Potassium (B) Krypton (C) Calcium (D) Proton
28. The gram molecular mass of ammonia is \_\_\_\_\_.  
 (A) 17 grams (B) 31 grams (C) 20 grams (D) 25 grams
29. The molecular formula of nitre is \_\_\_\_\_.  
 (A)  $\text{NaNO}_3$  (B)  $\text{KNO}_3$  (C)  $\text{KNO}_2$  (D) KCN
30. The value of Avogadro constant is \_\_\_\_\_.  
 (A)  $6.022 \times 10^{24}$  (B)  $6.022 \times 10^{22}$  (C)  $6.022 \times 10^2$  (D)  $6.022 \times 10^{23}$
31. All samples of carbon dioxide contain carbon and oxygen in the mass ratio of 3 : 8. This is in agreement with the law of \_\_\_\_\_.  
 (A) Conservation of Mass (B) Constant proportion (C) Multiple proportion (D) Reciprocal proportion
32. The number of atom in a molecule of the elementary substances is called \_\_\_\_\_.  
 (A) Atomic number (B) Avogadro number (C) Atomic mass (D) Atomicity
33. The value of x, y and z in the equation :  
 $x \text{ Zn(NO}_3)_2 \rightarrow y \text{ ZnO} + z \text{ NO}_2 + \text{O}_2$  are respectively :  
 (A) 4, 2, 2 (B) 2, 4, 2 (C) 2, 2, 2 (D) 2, 2, 4

34. Consider the equation :  $P_4 + 5O_2 \longrightarrow 2P_2O_5$ . What mass of  $P_2O_5$  will be formed when 0.31 g of phosphorous will be reacting completely ? [atomic mass : p = 31, O = 16]
- (A) 0.71 g                      (B) 0.142 g                      (C) 0.284 g                      (D) 0.355 g
35. What weight in grams is represented by 1.5 moles of sulphurdioxide ?
- (A) 60 g                      (B) 140 g                      (C) 96 g                      (D) 91 g

### Case Base Question (Q.36 to Q.38)

On the basis of chemical composition of substance, it is of three types: Elements, Compound and mixtures. The combination of elements to form compounds is governed by following basis laws: (i) Law of conservation of mass. Total mass of reactants = Total mass of products. (ii) Law of constant composition/definite proportion: For the same compound, obtained by different methods, the percentage of each element should be same in case, etc.

$$\text{Moles (n)} = \frac{\text{Mass (w)}}{\text{Molecular weight (m)}} ; \text{molecular}$$

$$\text{Weight of } X_2Y_3 = \text{no. of atoms of 'X' } \times \text{atomic weight of 'X' + no. of atoms 'Y' } \times \text{atomic weight 'Y'}$$

36. Atoms cannot be created or destroyed. This statement supports
- (A) Law of definite proportion                      (B) Law of increase in mass and energy  
(C) Law of conservation of mass                      (D) Law of conservation of volume
37. Atomic mass of element 'X' is 41 u and that for 'Y' is 72 u. The formula unit mass of the  $X_2Y_3$  is :
- (A) 342 u                      (B) 298 u                      (C) 254 u                      (D) 264 u
38. If atomic mass of oxygen is 16 u then correct value of number of moles of 4 gm oxygen molecules is
- (A) 0.25 mole                      (B) 0.75 mole                      (C) 0.125 mole                      (D) 0.425 mole

### Case Base Question (Q.39 to Q.41)

Except noble gases all other elements including Helium have less than 8 electrons in their outermost shell. To complete their octet they either gain or lose electrons. The new species thus formed will carry charge and are termed as ions. The positively charged ion formed by the loss of electron(s) are called cations, where was the negatively charged ions formed by the gain of electron are called anions. The charge on the ions is equal to the number of electron tort or gained by the atom. Two types of ions are formed :

(i) Cations:  $Na - e^- \longrightarrow Na^+$ , (ii) Anions :  $F + e^- \longrightarrow F^-$

39. An  $x^{2-}$  contains 10 electrons and 8 neutrons. What will be its atomic mass ?
- (A) 8                      (B) 16                      (C) 10                      (D) 18
40. An atom 'A'. (atomic number 13) will form a stable :
- (A)  $A^{3+}$  ion                      (B)  $A^{3-}$  ion                      (C)  $A^{2+}$  ion                      (D)  $A^{2-}$  ion
41. If number of protons in A is 10, the number of protons in  $A^{2+}$  will be :
- (A) 12                      (B) 8                      (C) 10                      (D) 11
42. A solution contains 50 g of common salt in 450 g of water. The concentration of the solution is :
- (A) 500%                      (B) 50%                      (C) 10%                      (D) 80%
43. Consider the equation :  $2H_2 + O_2 \longrightarrow 2H_2O$ , what mass of water will be produced of 0.1 g 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) .36 g

44. The mass of 94.5 ml, if a gas at S.T.P is formed to be 0.2231 g. Calculate its molecular mass :
- (A) 52.88                      (B) 82.55                      (C) 25.58                      (D) 64.25
45. The isotopes of an element have:
- (A) same number of neutrons                      (B) same atomic number  
(C) same mass number                      (D) none of these
46. The number of electrons in an element with atomic number  $x$  and atomic mass  $y$  will be:
- (A)  $(x - y)$                       (B)  $(y - x)$                       (C)  $(x + y)$                       (D)  $x$

**Assertion and Reason :**

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

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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.
47. **Assertion (A):** Atomic mass of sodium is 23  
**Reason (R):** An atom of sodium is 23 times heavier than an atom of carbon-12 isotope.
- (A) a                      (B) b                      (C) c                      (D) d
48. **Assertion (A):** All isotopes of a given element show the same type of chemical behavior.  
**Reason (R):** The chemical properties of an atom are controlled by the number of electron in the atom.
- (A) a                      (B) b                      (C) c                      (D) d
49. **Assertion (A):** if the dispersed phase is liquid and dispersion medium is solid then colloid is known as gel.  
**Reason (R):** Milk is an example of gel.
- (A) a                      (B) b                      (C) c                      (D) d
50. **Assertion (A):** Isobers are having same mass numbers.  
**Reason (R):** Isobers have same number of neutrons.
- (A) a                      (B) b                      (C) c                      (D) d

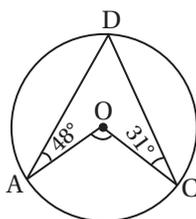
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## Mathematics

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51. From the figure given below, find  $\angle AOC$ .

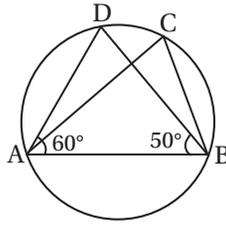
- (A)  $136^\circ$   
(B)  $145^\circ$   
(C)  $157^\circ$   
(D) None of these



52. What is the area of an isosceles triangle whose base is 2 cm and one of the equal sides is 4 cm?
- (A)  $\sqrt{32}$  cm<sup>2</sup>                      (B)  $\sqrt{15}$  cm<sup>2</sup>                      (C)  $\sqrt{30}$  cm<sup>2</sup>                      (D)  $\sqrt{13}$  cm<sup>2</sup>

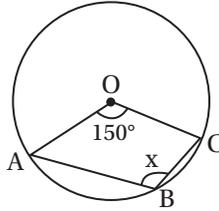
53. In figure, if  $\angle DAB = 60^\circ$ ,  $\angle ABD = 50^\circ$ , then find  $\angle ACB$ .

- (A)  $50^\circ$   
 (B)  $60^\circ$   
 (C)  $70^\circ$   
 (D)  $62^\circ$



54. In the figure, O is the centre of the circle. What is the value of x?

- (A)  $125^\circ$   
 (B)  $105^\circ$   
 (C)  $95^\circ$   
 (D)  $85^\circ$

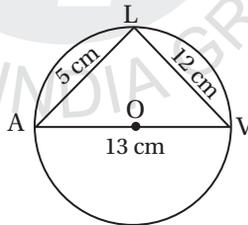


55. The area of a triangle is  $150 \text{ cm}^2$  and its sides are in the ratio 3: 4: 5. What is its perimeter?

- (A) 10 cm                      (B) 30 cm                      (C) 45 cm                      (D) 60 cm

**CASE STUDY BASED QUESTION- I (Q.56- Q. 58):**

Three boys Anshul, Vivek and Lalit are playing a game by standing on the boundary of a circle of diameter 13 cm with centre O. Anshul throws a ball to Vivek, Vivek to Lalit and Lalit to Anshul and so on. The distance between Anshul and Lalit is 5 cm and between Vivek and Lalit is 12 cm.



On basis of this information given in passage answer following questions.

56. Measure  $\angle ALV$ :

- (A)  $60^\circ$                       (B)  $90^\circ$                       (C)  $50^\circ$                       (D)  $40^\circ$

57. The length of the longest chord is:

- (A) 12 cm                      (B) 5 cm                      (C) 13 cm                      (D) 16 cm

58. The area covered by these three persons is:

- (A)  $20 \text{ cm}^2$                       (B)  $30 \text{ cm}^2$                       (C)  $25 \text{ cm}^2$                       (D)  $35 \text{ cm}^2$

**CASE STUDY BASED QUESTION- II (Q.59- Q. 61):**

International kite festival in Gujarat also known as Uttarayan is one of the biggest festival celebrated in Gujarat. It is celebrated on the auspicious day of makar sankranti every year. It is a sign for the farmers about the beginning of



64. **Assertion (A):** The perimeter of a triangle is 36 cm and its sides are in the ratio  $a : b : c = 3 : 4 : 5$  then  $a = 9$  cm,  $b = 13$  cm,  $c = 15$  cm

**Reason (R):** Perimeter of triangle = sum of all sides of triangle.

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

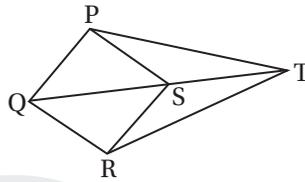
65. **Assertion (A):** Area of an equilateral triangle having each side 4 cm is  $4\sqrt{3}$  cm<sup>2</sup>

**Reason (R):** Area of an equilateral triangle =  $\frac{\sqrt{3}}{4}(\text{side})^2$ .

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

66. In the figure,  $PQ = QR = RS = SP = SQ = 6$  cm and  $PT = RT = 14$  cm. The length of  $ST$  (in cm) is

- (A)  $4\sqrt{10}$   
 (B)  $(7\sqrt{3} - 2)$   
 (C) 10  
 (D) 11



67. Two sides of a triangle are 7 cm and 25 cm, then the number of all possible integral values of third side of the triangle is

- (A) 11                                      (B) 14                                      (C) 12                                      (D) 13

68. If  $ax^5 = by^5 = cz^5$  and  $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 1$ , then  $(ax^4 + by^4 + cz^4)^{1/5}$  equals to

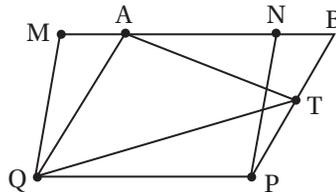
- (A)  $a + b + c$                               (B)  $a^{1/5} + b^{1/5} + c^{1/5}$                               (C)  $(a + b + c)^{1/5}$                               (D)  $a^{1/4} + b^{1/4} + c^{1/4}$

69.  $\sqrt[6]{(15 - 2\sqrt{56})} \times \sqrt[3]{(\sqrt{7} + 2\sqrt{2})} =$

- (A) 0                                      (B)  $\sqrt{2}$                                       (C) 1                                      (D)  $\sqrt[6]{2}$

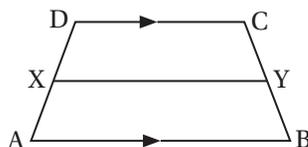
70. In the adjoining figure,  $MNPQ$  and  $ABPQ$  are parallelograms and  $T$  is any point on the side  $BP$ . Then  $\text{ar}(\Delta ATQ) = ?$

- (A)  $\frac{1}{2}$  ar (MNPQ)  
 (B)  $\frac{1}{3}$  ar (MNPQ)  
 (C)  $\frac{1}{2}$  ar (ANPQ)  
 (D)  $\frac{1}{3}$  ar (ABPQ)



71. In the given figure,  $AB \parallel DC$ ,  $DC = 30$  cm and  $AB = 50$  cm and  $AX = XD$  &  $BY = YC$ . Then ratio of  $\text{ar}(\text{DCYX}) : \text{ar}(\text{XYBA}) =$

- (A) 2 : 9  
 (B) 4 : 9  
 (C) 5 : 9  
 (D) 7 : 9



72. The expression  $(a + b + c)^2 + (a + b - c)^2 + (a - b + c)^2 + (b + c - a)^2$  equals to\_\_\_\_\_
- (A)  $2(a^2 + b^2 + c^2 + ab + bc + ac)$                       (B)  $4(a^2 + b^2 + c^2)$   
 (C)  $(a^2 + b^2 + c^2)$     (D)  $4(ab + ac + bc)$
73. If  $x + y + z = 9$  and  $xy + yz + zx = 23$ , then the value of  $(x^3 + y^3 + z^3 - 3xyz) = ?$
- (A) 108                                      (B) 207                                      (C) 669                                      (D) 729
74. In triangle ABC, E divides AB in the ratio 3: 1 and F divides BC in the ratio 3: 2, then the ratio of areas of triangle BEF and triangle ABC is
- (A) 3 : 5                                      (B) 3 : 10                                      (C) 1 : 5                                      (D) 3 : 20
75. Let ABC be a triangle with sides a, b, c. Then, lengths of medians of the triangle formed by the medians of the triangle ABC are
- (A)  $\frac{1}{2} a, \frac{1}{2} b, \frac{1}{2} c$                       (B)  $\frac{2}{3} a, \frac{2}{3} b, \frac{2}{3} c$                       (C)  $\frac{3}{4} a, \frac{3}{4} b, \frac{3}{4} c$                       (D)  $\frac{5}{6} a, \frac{5}{6} b, \frac{5}{6} c$

## Biology

76. Which of the following is not a micronutrient for plants ?
- (A) Magnesium                      (B) Manganese                      (C) Zinc                                      (D) Copper
77. How many micronutrients do plants require?
- (A) 13                                      (B) 8                                      (C) 7                                      (D) 12
78. Decomposition of animal excreta and plant wastes yields:
- (A) Manure                                      (B) Green manure                      (C) Nitrogenous fertilisers                      (D) All of the above
79. Commercially produced plant nutrients are called:
- (A) Green manure                      (B) Biofertilisers                      (C) Fertilisers                                      (D) Compost
80. One disadvantage of using manure is:
- (A) It is bulky                                      (B) It gives out a foul smell  
 (C) Both (A) and (B)                                      (D) Neither (A) nor (B)
81. How is water wasted in irrigation?
- (A) Surface run off                                      (B) Percolation through the soil  
 (C) Evaporation                                      (D) All of the above
82. For crops like paddy, which require a lot of water, the common method of irrigation in our country is:
- (A) Furrow irrigation                      (B) Basin irrigation                      (C) Drip irrigation                      (D) Sprinkler irrigation
83. Plants like *Xanthium* or *Parthenium* are removed from crop fields. Name a chemical used to remove these plants.
- (A) Pesticide                                      (B) Weedicide                                      (C) Rodenticide                                      (D) Fungicide
84. What is a desirable agronomic character for cereal crops?
- (A) Dwarfness                                      (B) Tallness                                      (C) Profuse branching                      (D) Fragrance

85. Which of the factors is not directly linked with the losses of grains during storage in a granary?  
 (A) Moisture present in food grains (B) Humidity of the air in the granary  
 (C) Presence of rodents (D) Availability of sunlight
86. Which of the following is a sustainable agricultural practice ?  
 (A) Mixed farming (B) Crop rotation (C) Intercropping (D) All of the above
87. Which of the following is not correct in terms of organic farming?  
 (A) Use of biofertilisers (B) Use of biopesticides  
 (C) Recycling wastes to produce inorganic fertilisers (D) Maintenance of soil health
88. Nitrogen fixing bacteria and blue green algae serves as:  
 (A) Biopesticide (B) Herbicide (C) Biofertiliser (D) Compost
89. Which is the most important source of food and fodder?  
 (A) Algae (B) Fungi (C) Lichen (D) Cereal
90. Application of nitrogenous manure to a plant causes -  
 (A) vigorous vegetative growth (B) early flowering  
 (C) early fruiting (D) growth retardation due to toxicity of ammonia

**The questions 16 to 19 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** - Plants get all their nutrients from soil.  
**Reason** - Roots absorb minerals and water present in the soil.  
 (A) A (B) B (C) C (D) D
92. **Assertion** - Vermicompost is made with the help of redworms.  
**Reason** - Redworms are decomposed during vermicomposting.  
 (A) A (B) B (C) C (D) D
93. **Assertion** - Neem leaves are used to store grains.  
**Reason** - Neem leaves absorb water from the stored grains.  
 (A) A (B) B (C) C (D) D
94. **Assertion** - Crop variety improvement is done to increase productivity of the crop.  
**Reason** - Crop varieties can be improved by introducing a desirable gene.  
 (A) A (B) B (C) C (D) D

**Read the given passage and answer the following questions (20-22):**

To get maximum benefit from a crop field, we should maintain the soil fertility through judicious use of manure and fertilisers. We should employ cropping practices like mixed cropping and intercropping. We should also keep the crops protected from their biotic and abiotic enemies.

95. Find out the correct sentence:

- i. Hybridisation means crossing between two genetically dissimilar plants.
- ii. Cross between two varieties is called inter specific hybridisation.
- iii. Introducing genes of desired characters into a plant gives a genetically modified crop.
- iv. Cross between plants of two species is called intervarietal hybridisation

- (A) i and iii                      (B) ii and iv                      (C) ii and iii                      (D) iii and iv

96. Weeds affect crop plants by:

- (A) killing plants in fields before they grow
- (B) dominating the crop plants in growth
- (C) competing with the crop plants for the available resources
- (D) All of the above

97. Which one is a protein yielding plant among the following?

- (A) Gram                      (B) Sorghum                      (C) Jute                      (D) Wheat

Study the given diagram and answer the following questions (23-25):



98. Identify the cropping practice shown in the given figure

- (A) Mixed cropping                      (B) Intercropping  
(C) Crop rotation                      (D) Could be any of the above options

99. Which of the following statements applies to the given method of farming?

- (A) The crops are sown in a preplanned succession on the same field
- (B) Usually a leguminous crop is alternated with a cereal crop in different seasons
- (C) In each row, only one type of crop is grown
- (D) Products of different crops are harvested, threshed and marketed in a mixed form

100. Which of the following statements does not apply to the given method of farming?

- (A) The risk of crop failure due to uncertain monsoons is reduced.
- (B) Chances of pest infestation is greatly reduced
- (C) Same fertilisers and pesticides are used for all crops
- (D) None of the above