Monthly Progressive Test

Class: IX (G)

Subject: PCMB

Academic Excellence Programme
TECHNO ACE

Test Booklet No.: MPT07

Test Date: 2 2 1 1 2 0 2 4

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 MPT07(G)22112024

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 scrible 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.

Physics

1. Two bodies having masses u and v are separated by a distance x, then the gravitational force between them will be $F =$

   Ⓐ $\dfrac{guv}{x}$

   Ⓑ $\dfrac{Guv}{x^2}$

   Ⓒ $\dfrac{Guv^2}{x}$

   Ⓓ $\dfrac{guv}{x^2}$

2. If the masses of two objects are halved (each) and separation between them is also halved, the new gravitational force between them becomes $F_{new} =$

   Ⓐ $F_{initial}$　　Ⓑ $2F_{initial}$　　Ⓒ $0.5 \times F_{initial}$　　Ⓓ $4F_{initial}$

3. The value of G

   Ⓐ decreases with height　　　　　　Ⓑ is zero at the centre of Earth

   Ⓒ increase with height　　　　　　　Ⓓ remains same everywhere

4. A sphere of mass 2 kg is falling freely under gravity from 20 m height. Which of the following physical quantity remains unchanged?

   Ⓐ Weight　　Ⓑ Mass　　Ⓒ Velocity　　Ⓓ Both Ⓐ and Ⓑ

5. The weight of a body is measured to be 600 N on the surface of Earth. Its weight on the moon is

   Ⓐ 200 N　　Ⓑ 100 N　　Ⓒ 60 N　　Ⓓ 300 N

6. A person can jump 1 m high on the earth. He can jump x (m) on the moon. Then $x =$

   Ⓐ 2 m　　Ⓑ 3 m　　Ⓒ 4 m　　Ⓓ 6 m

7. When a particle is moving upward, then acceleration due to gravity will be

   Ⓐ upward

   Ⓑ downward

   Ⓒ value becomes zero

   Ⓓ acts at an angle of 45° with the vertical line.

8. The gravitational force of attraction between any two particles is directly proportional to the

   Ⓐ square of the product of their masses　　Ⓑ square root of the product of their mases

   Ⓒ product of their masses　　　　　　　　Ⓓ none of these

9. Radius of the earth is

   Ⓐ 3200 km　　Ⓑ 6400 km　　Ⓒ 4400 km　　Ⓓ 2400 km

10. The gravitational force exerted by the earth is often called as

   Ⓐ pressure   Ⓑ tsunami   Ⓒ earthquake   Ⓓ gravity

11. If we take two solid balls of different masses say, one of 1 kg and the other of 2 kg, and drop them from the same height, they reach the ground simultaneously.

   Ⓐ False   Ⓑ True   Ⓒ Sometimes true   Ⓓ None of these

12. Every object in the universe attracts every other object.

   Ⓐ False   Ⓑ True

   Ⓒ May be true   Ⓓ None of the above

13. The gravitational force of attraction obeys inverse square law of the distance between the objects.

   Ⓐ May be true   Ⓑ False

   Ⓒ True   Ⓓ Data insufficient

14. Equation of law of gravitation is applicable

   Ⓐ for particles

   Ⓑ for larger spherical bodies which have uniform density in all directions

   Ⓒ both Ⓐ and Ⓑ are correct

   Ⓓ for only extended objects

15. The force required to move an object on a circular path is called

   Ⓐ centripetal force   Ⓑ only tension force

   Ⓒ only contact force   Ⓓ only friction force

16. The magnitude of velocity at the highest point of vertical motion under gravity is

   Ⓐ 2 m/s   Ⓑ 1 m/s   Ⓒ 0 m/s   Ⓓ 10 m/s

17. Which one of the following represents uniform motion?
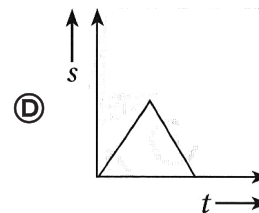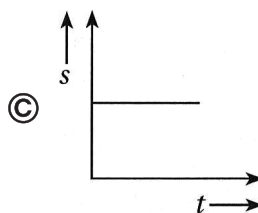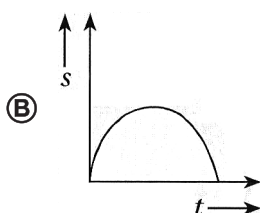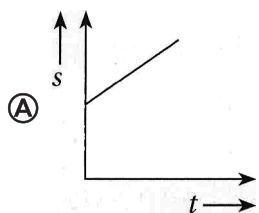
■ **Assertion Reason based Questions:**

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 coorect.

18. **Assertion:** Whenever an object moves near the surface of earth, with no other object pushing or pulling it, it is accelerated.

    Reason: The acceleration is caused due to the force of gravity and is called the acceleration due to gravity.

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

19. **Assertion:** The direction of acceleration due to gravity is towards the centre of earth.

    Reason: In SI unit, the value of g is 9.8 m/s^2.

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

20. The force of attraction between two objects in the universe is independent of intervening medium.

    Ⓐ False   Ⓑ May be false   Ⓒ True   Ⓓ We can not say

21. Gravitational force between point masses m and M separated by a distance is F. Now if a point mass 2 m is placed next to m, the force will be on M due to m

    Ⓐ F Ⓑ $2F$ Ⓒ $F/2$ Ⓓ $4F$

22. The total force on M due to both m and $2m$

    Ⓐ F Ⓑ $2F$ Ⓒ $3F$ Ⓓ $4F$

23. Three equal masses are placed at three vertices of an equilateral triangle. At which point on the triangle, if a body is brought, no net force will be felt?

    Ⓐ Circumcenter   Ⓑ In-center

    Ⓒ Centroid   Ⓓ All of the above

■ **Assertion Reason based Questions:**

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.

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24. **Assertion:** The direction of acceleration due to gravity is always downward with respect to horizontal ground.

   Reason: Earth always attracts anybody towards its centre.

   Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

25. **Assertion:** Moon is revolving around earth due to gravitational attraction of earth.

   Reason: Earth is revolving around sun due to gravitational attraction of sun.

Chemistry

26. According to Bohr's model

   Ⓐ Electrons can have particle as well as wave character

   Ⓑ Electron absorb energy when jump into higher energy level

   Ⓒ Electrons eventually fall into the nucleus of an atom

   Ⓓ An atom is highly unstable

27. $^{40}C_{20}$ and $^{40}Ar_{18}$ are

   Ⓐ Isotopes   Ⓑ Isotones   Ⓒ Isobars   Ⓓ Isodiaphers

28. Number of valence electrons in F^- is

   Ⓐ 7   Ⓑ 8   Ⓒ 9   Ⓓ 10

29. Which element Isotope is used in the treatment of goitre

   Ⓐ Carbon   Ⓑ Cobalt   Ⓒ Uranium   Ⓓ Iodine

30. Number of protons present inside the nucleus of an atom is

   Ⓐ Atomic weight   Ⓑ Mass numbers   Ⓒ Atomic numbers   Ⓓ All

31. Identify the Isotopes combination in the given

   Ⓐ $_1H^1, _1D^2, _1T^3$ Ⓑ $_6C^{12}, _6C^{13}, _6C^{14}$ Ⓒ $_7N^{14}, _7N^{15}$ Ⓓ All of these

32. The no of protons and neutrons in $^{40}_{20}Ca^{2+}$

   Ⓐ 20, 20   Ⓑ 20, 18   Ⓒ 18, 20   Ⓓ 40, 20

33. According to Bohr's theory the shape of the orbits is

   Ⓐ Spherical   Ⓑ Elliptical   Ⓒ Circular   Ⓓ Parabolic

34. Aluminium releases 3 electrons and then it achieves the electronic configuration of which element?

   Ⓐ Magnesium   Ⓑ Neon   Ⓒ Sodium   Ⓓ Silicon

Assertion Reason Type Question (35–38):

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

35. **Assertion (A):** Atom is electrically neutral

    Reason (R): Mass of electron is lower than the mass of proton

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

36. **Assertion (A):** In case of gold foil experiment by Sir Rutherford, α-particle was selected

    Reason (R): α-particle has considerable amount of energy and hence the experiment can proceed normally

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

37. **Assertion (A):** Valency of argon is zero

    Reason (R): The outermost shell of argon is fulfilled

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

38. **Assertion (A):** $_{19}K^{39}$ and $_{20}Ca^{40}$ are isobars

    Reason (R): $_{19}K^{39}$ and $_{20}Ca^{40}$ have same number of neutrons

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

39. In case of gold foil experiment, the source of α-particle is

    Ⓐ an inert gas   Ⓑ a radioactive element

    Ⓒ water   Ⓓ nitrogen gas

40. What is the maximum valency of sodium ?

    Ⓐ 1   Ⓑ 2   Ⓒ 3   Ⓓ 4

Assertion Reason Type Question (41):

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

41. **Assertion (A):** The molecular weight of oxygen is 32 amu

   Reason (R): The atomic weight of oxygen is 16 amu and oxygen is a diatomic molecule

   Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

42. The particles settle down due to gravity in

   Ⓐ Smoke   Ⓑ Potassium permanganate solution

   Ⓒ Sodium chloride solution   Ⓓ Chalk powder in water

Assertion Reason Type Question (49):

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

43. **Assertion (A):** Atomic Mass of Mg is 24

   Reason (R): An atom of magnesium is 24 times heavier than $\dfrac{1}{12}$th of the mass of carbon atom (C – 12)

   Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

44. **Assertion (A):** Chemical properties of nitrogen and oxygen are different

   Reason (R): Both nitrogen and oxygen are gaseous

   Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

45. **Assertion (A):** Atomicity of sulphuric acid is 9

   Reason (R): Atomicity is defined as the total number of atoms present in the molecule

   Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

46. A trinegative ion of an element has 8 electrons in its M shell. The atomic number of the element is :

   Ⓐ 15   Ⓑ 18   Ⓒ 20   Ⓓ 16

Case study based Questions (47-48) :

Isotopes are the atoms of the same element with same atomic number but different mass numbers. Isobars are atoms of different elements having different atomic number but same mass number. Radio isotopes are isotopes having unstable nuclei and hence in it α, β and γ rays. They are used as nuclear fuel ex. u-235 in medical field; Co-60 for the treatment of

cancer, C-14 in carbon dating etc.

Choose the most appropriate answer.

47. Write the isotope of $^{35}Cl_{17}$

Ⓐ $^{37}Cl_{17}$ Ⓑ $^{38}Cl_{17}$ Ⓒ $^{36}Cl_{17}$ Ⓓ $^{39}Cl_{17}$

48. All the isotopes of an element have :

     Ⓐ identical chemical properties   Ⓑ identical physical properties

     Ⓒ different chemical properties   Ⓓ different physical properties

Assertion Reason Type Question (49):

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

49. **Assertion (A):** Large scale scattering of alpha particles lead to the discovery of atomic nucleus.

     Reason (R): Entire positive charge is concentrated in the central core.

     Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

50. Which of the following is isoelectronic with neon?

     Ⓐ F^+ Ⓑ O^{2-} Ⓒ Mg   Ⓓ Na

Mathematics

51. The sides of a triangular board are 13 metres, 14 metres and 15 metres. The cost of painting one side of it at the rate of ₹ 8.75 per m^2 is

     Ⓐ ₹688.80   Ⓑ ₹735   Ⓒ ₹730.80   Ⓓ ₹722.50

52. The length of each side of an equilateral triangle having an area of $4\sqrt{3}$ cm^2 is

     Ⓐ 4 cm   Ⓑ $\dfrac{4}{\sqrt{3}}$ cm   Ⓒ $\dfrac{\sqrt{3}}{4}$ cm   Ⓓ 3 cm

53. The volume (in cm^3) of a right circular cone of height 12 cm and base radius 6 cm is

     Ⓐ 12π Ⓑ 36π Ⓒ 72π Ⓓ 144π

54. The volume of a sphere is 38808 cu. cm. The surface area of the sphere (in cm^2) is

    Ⓐ 5544   Ⓑ 1386   Ⓒ 8316   Ⓓ 4158

55. If the ratio of volumes of two spheres is 1 : 8, then the ratio of their surface areas is

    Ⓐ 1 : 2   Ⓑ 1 : 4   Ⓒ 1 : 8   Ⓓ 1 : 16

56. To identify patterns, trends and central tendencies in the data set which graph is more preferable

    Ⓐ bar graph   Ⓑ histogram

    Ⓒ frequency polygon   Ⓓ none of these

57. In a frequency polygon f_0 and f_{n+1} are the respective frequency of assumed class intervals then

    Ⓐ $f_0 + f_{n+1} = 0$ Ⓑ $f_0 - f_{n+1} = 0$ Ⓒ $f_0 \times f_{n+1} = 0$ Ⓓ All of these

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.

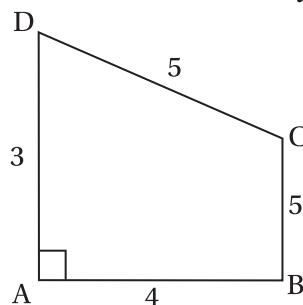**58.** **Assertion (A) :** A triangle with sides 13 cm, 14 cm and 15 cm has an area of 84 cm^2

    Reason (R) : Heron's formula is only applicable to scalene triangle.

    Ⓐ a   Ⓑ b   Ⓒ c   Ⓓ d

59. **Assertion (A) :** In this figure we can apply Herons formula to find the area of ABCD by joining DB and required area = $\frac{1}{2}(24 + 25\sqrt{3})$ unit^2

    Reason (R) : $\Delta = \sqrt{s(s-a)(s-b)(s-c)}$ is applicable only for triangle
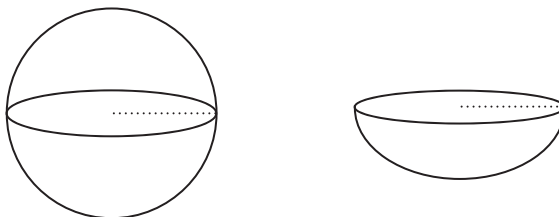
    Ⓐ a   Ⓑ b

    Ⓒ c   Ⓓ d

Case Study Based Questions (60–62):

Our mathematics teacher has introduced a new topic : "Surface areas and volumes"

In class, he brought 3D models of a sphere and a hemisphere, both having the same radius. He then asked us few questions. On the basis of the above informations answer the following questions.


60. Find the ratio of volumes of sphere and hemisphere.

Ⓐ 1 : 2　　　　Ⓑ 2 : 1　　　　Ⓒ 3 : 4　　　　Ⓓ 4 : 3

61. Find the ratio of surface area of sphere to curved surface area of hemisphere

Ⓐ 1 : 2　　　　Ⓑ 2 : 1　　　　Ⓒ 3 : 4　　　　Ⓓ 4 : 3

62. Find the ratio of surface area of sphere to total surface area of hemisphere.

Ⓐ 3 : 4　　　　Ⓑ 2 : 1　　　　Ⓒ 1 : 2　　　　Ⓓ 4 : 3

63. A triangle has sides of length 10m, 10m and 12m. A rectangle has width 4m and area equal to the area of the triangle. What is the perimeter of this rectangle?

Ⓐ 16m　　　　Ⓑ 34m　　　　Ⓒ 28m　　　　Ⓓ 32m

64. If the radius of a sphere is 2r units, then its volume will be

Ⓐ $\dfrac{4}{3}\pi r^3$ cu.units

Ⓑ $4\pi r^3$ cu.units

Ⓒ $\dfrac{8\pi r^3}{3}$ cu.units

Ⓓ $\dfrac{32\pi r^3}{3}$ cu.units

65. If the height and the radius of a cone are doubled, then the volume of the cone increases

Ⓐ 3 times　　　　Ⓑ 4 times　　　　Ⓒ 6 times　　　　Ⓓ 8 times

66. O is the centre of the circle, If chord AB = chord CD, then x =
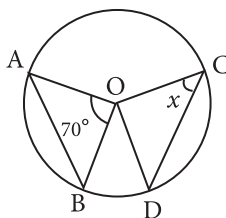

Ⓐ 70°　　　　Ⓑ 50°　　　　Ⓒ 55°　　　　Ⓓ 45°

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67. O is the centre of the circle with radius 5 cm. Chords AB and CD are parallel. AB = 6 cm and CD = 8cm. If PQ is perpendicular distance between AB and CD, then PQ =

Ⓐ 10 cm   Ⓑ 8 cm   Ⓒ 7 cm   Ⓓ 3 cm

68. If all the altitudes from vertices to the opposite sides of a triangle are equal, then the triangle is

Ⓐ equilateral   Ⓑ isosceles   Ⓒ scalene   Ⓓ right-angled

69. The graph of $2x + 3y = 6$ is
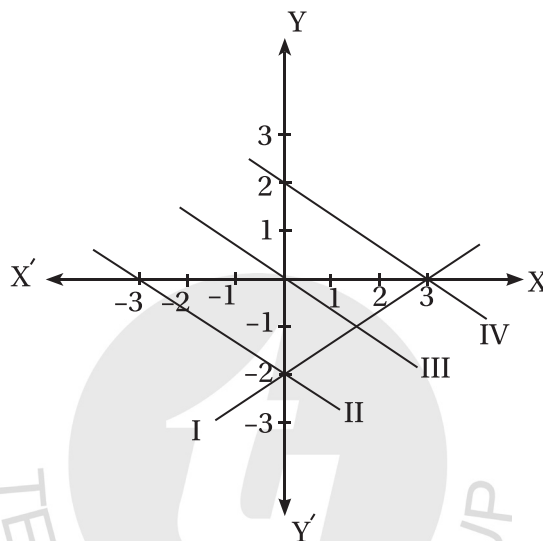
Ⓐ I   Ⓑ II   Ⓒ III   Ⓓ IV

70. The given diagram is drawn on a cartesian plane
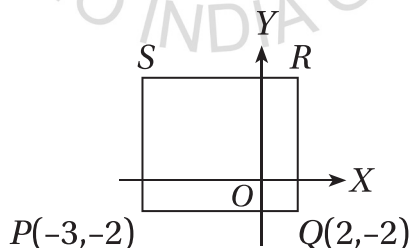
PQRS is a square. The coordinates of S are

Ⓐ (–3, 3)   Ⓑ (3, –3)   Ⓒ (–3, –3)   Ⓓ (–3, 2)

71. In triangle PQR, QR = 10 cm and height PM = 4.4 cm.
If PR = 11 cm, then altitude QN equals to

Ⓐ 4 cm   Ⓑ 5 cm   Ⓒ 5.5 cm   Ⓓ 5.6 cm

72. The ratio of area of square of side a units and area of equilateral triangle of side a units is

Ⓐ 2 : 1   Ⓑ $2 : \sqrt{3}$ Ⓒ 4 : 3   Ⓓ $4 : \sqrt{3}$

73. The lateral surface area (in cm^2) of a cone with height 3 cm and radius 4 cm is

Ⓐ $62\dfrac{6}{7}$ Ⓑ $52\dfrac{6}{7}$ Ⓒ $31\dfrac{3}{7}$ Ⓓ $15\dfrac{5}{7}$

74. Three solid spherical beads of radii 3 cm, 4 cm, 5 cm are melted and recast into a spherical bead. Its radius will be

Ⓐ 6 cm   Ⓑ 7 cm   Ⓒ 8 cm   Ⓓ 9 cm

75. A frequency polygon can be drawn with the help of a

Ⓐ bar graph   Ⓑ histogram   Ⓒ both A and B   Ⓓ None of these

Biology

76. Abiotic factors include

Ⓐ Drought   Ⓑ Salinity   Ⓒ Temperature   Ⓓ All

77. Most important source of nutrients for plants is

Ⓐ Soil   Ⓑ Water   Ⓒ Air   Ⓓ None

78. Which of the following is milch animal ?

Ⓐ *Apis sp.*   Ⓑ *Bos indicus*   Ⓒ *Bos bubalis*   Ⓓ *Both b and c*

79. Bees are kept for

Ⓐ Honey   Ⓑ Silk   Ⓒ Medicine   Ⓓ All

80. Source of protein is –

Ⓐ Oat   Ⓑ Sugar   Ⓒ Soyabean   Ⓓ All

81. Birds raised for production of eggs in a poultry is called

Ⓐ broilers   Ⓑ milch animals   Ⓒ layers   Ⓓ none

82. Fishes used in composite culture should be

Ⓐ Competing   Ⓑ Non-competing   Ⓒ Both   Ⓓ None

83. 'Organic farming" does not include

Ⓐ Green manures   Ⓑ Chemical fertilizers

Ⓒ Crop rotation   Ⓓ Compost and farmyard manure

84. Growing two or more crops in a definite row pattern is _____

Ⓐ Mixed farming   Ⓑ Mixed cropping   Ⓒ Intercropping   Ⓓ Crop rotation

Assertion-Reason type Questions (85–86):

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 Reason is false.

D. Assertion is false but Reason is true.

85. **Assertion:** Some weeds produce substances toxic for the crops.

    Reason: Weeds take up nutrients and reduce the growth of crops.

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

86. **Assertion:** Cattle are fed with roughage and concentrates.

    Reason: Roughage provides fibre, while concentrates provide proteins and other nutrients.

    Ⓐ A   Ⓑ B   Ⓒ C   Ⓓ D

Case Based Questions (87–90):

Read the passage and answer the following questions :

The word 'poultry' has originated from the old French word 'poult' meaning chicken, the young ones of common domestic fowls. However, poultry also includes ducks, geese, turkey, etc. India has become the fifth largest country in the world in poultry production after China, former USSR, USA and Japan.

87. Poultry birds, used for production of meat, is called _____

    Ⓐ Broilers   Ⓑ Egger   Ⓒ Chicken   Ⓓ All

88. Choose the exotic breed of poultry bird from the list given below :

    Ⓐ Aseel   Ⓑ Chittagong

    Ⓒ White Leghorn   Ⓓ Busra

89. Exotic breed means :

    Ⓐ Native varieties

    Ⓑ Foreign breeds successfully acclimatized in India

    Ⓒ Hybrid between native and foreign breeds

    Ⓓ Breeds found only in a particular region of India

90. Proper management of poultry includes

    Ⓐ Improved methods of hatching

    Ⓑ Proper sanitation of the poultry farm

    Ⓒ Preventive measures to check diseases

    Ⓓ All

91. RER is rough because of _____ attached to it.

   Ⓐ ribosome   Ⓑ centrosome

   Ⓒ lysosome   Ⓓ nuclear membrane

92. Which cell organelle helps in initiation of cell division in animal cells ?

   Ⓐ Plastid   Ⓑ Centrosome

   Ⓒ Mitochondria   Ⓓ Ribosome

93. The number of chromosomes found in prokaryotic cells is / are—

   Ⓐ One   Ⓑ Two

   Ⓒ Three   Ⓓ Four

94. Who coined the term 'protoplasm'?

   Ⓐ Dujardin   Ⓑ Purkinje

   Ⓒ Nirenberg   Ⓓ F. P. Roux

95. Which of the following is not a component of xylem?

   Ⓐ Tracheids   Ⓑ Vessels

   Ⓒ Fibres   Ⓓ Companion cells

Assertion-Reason type Questions (96–97):

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 Reason is false.

D. Assertion is false but Reason is true.

96. **Assertion:** Apiculture is the process of rearing silkworms.

   Reason: Honey bees are reared for production of honey and bee wax.

   Ⓐ A   Ⓑ B

   Ⓒ C   Ⓓ D

97. **Assertion:** In composite fish culture, a combination of 5 or 6 species of fishes are grown in a single pond

   Reason: All fishes used in the culture are surface feeders.

   Ⓐ A   Ⓑ B

   Ⓒ C   Ⓓ D

Case Based Questions (98–100):

Read the given passage and answer the following questions :

If we grow a crop continuously in the same field for many years, it results into various problems such as (i) deficiency of same types of nurients, (ii) build up of diseases and insect pests. This demands the practice of crop rotation.

98. In crop rotation, different crops are grown –

  Ⓐ On different fields, simultaneously

  Ⓑ On the same field in a pre planned succession

  Ⓒ In different rows in the same field, simultaneously

  Ⓓ Randomly on the same field

99. Legumes are often included in crop rotation patterns, because _____

  Ⓐ legumes are high nutrient demanding crops

  Ⓑ legumes are high water demanding crops

  Ⓒ legumes increase the nitrogen content of soil

  Ⓓ all of these

100. Advantages of crop rotation are

  Ⓐ It controls pests and weeds

  Ⓑ It reduces the need of fertilizers

  Ⓒ Several crops may be grown with only one soil preparation (like ploughing, levelling, etc.)

  Ⓓ All of these