Monthly Progressive Test

Class: VIII

Subject: PCMB

Academic Excellence Programme
TECHNO ACE

Test Booklet No.: MPT08 **Test Date:** 2 0 1 2 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 MPT0820122024.
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. Lightning occurs because of the accumulation of charges in the clouds. The statement is
   Ⓐ true Ⓑ sometimes true
   Ⓒ false Ⓓ lightning does not occur
2. Lightning is generally an electric spark, although on a
   Ⓐ small scale Ⓑ large scale
   Ⓒ sometimes on large scale Ⓓ none of these
3. When we rub a plastic comb on dry hair, then for small piece of papers, the comb can
   Ⓐ Repel papers Ⓑ attract papers
   Ⓒ attract sometimes the papers Ⓓ repel sometimes
4. The electric charge developed on materials remains in the body of the material and it does not move as a current through a metallic wire. This kind of electric charge is called
   Ⓐ dynamic electric charge Ⓑ storage electric charge
   Ⓒ static electric charge Ⓓ mobile electric charge
5. Like charges attract each other.
   Ⓐ true Ⓑ sometimes true Ⓒ sometimes false Ⓓ false
6. Attraction is surer test to detect the nature of charge.
   Ⓐ true Ⓑ sometimes false Ⓒ sometimes true Ⓓ false
7. A device is used to detect charge on a body. This device is called
   Ⓐ Stethoscope Ⓑ thermometer Ⓒ barometer Ⓓ electroscope
8. A device is used to protect a building from lightning. Name of device is
   Ⓐ Lightning conductor Ⓑ Lightning arrestor
   Ⓒ super conductor Ⓓ Thermostat
9. A sudden shaking or trembling of the earth which lasts for a very short time is called
   Ⓐ Earth break Ⓑ super cyclone Ⓒ earth quake Ⓓ fault zone
10. The power of an earthquake is expressed in terms of a magnitude on a scale is called
    Ⓐ Rankine scale Ⓑ Pauling scale Ⓒ Mohrs scale Ⓓ Richter scale
11. Tidal waves in the sea ,which move as a high wall of water to distant islands and may bring disaster for the people living along the coastline. Name of this kind of tidal wave is
    Ⓐ Shock wave Ⓑ Tsunami Ⓒ back water flow Ⓓ Hurricane
12. The science of studying about the earthquake is called
    Ⓐ Seismology Ⓑ Topology Ⓒ Cryptology Ⓓ Chronology
13. The electrons have positive charge.
    Ⓐ True Ⓑ sometimes true Ⓒ false Ⓓ sometimes false
14. Light travels in
    Ⓐ straight line Ⓑ curve path
    Ⓒ sometimes in curve path Ⓓ none of these

15. Select the correct option :

Ⓐ Angle of reflection = angle of incidence
Ⓑ angle of incidence > angle of reflection
Ⓒ angle of incidence < angle of reflection
Ⓓ angle of incidence is always zero degree

16. When a parallel beam of incident light is reflected as a parallel beam of light in one direction is called

Ⓐ Diffused reflection Ⓑ Irregular reflection Ⓒ regular reflection Ⓓ deviation

17. The images of actors on the screen in a cinema hall is an example of

Ⓐ Virtual image Ⓑ real image Ⓒ water image Ⓓ mirage

18. The image of our face in a plane mirror is an example of

Ⓐ Virtual image Ⓑ real image Ⓒ water image Ⓓ mirage

19. If we stand in front of a plane mirror and raise our right hand then which hand does our image raise?

Ⓐ left hand Ⓑ right hand Ⓒ no raise Ⓓ sometimes right hand

20. The optical device which is used in submarines, tanks and also by soldiers in bunkers to see things outside, a higher view than normal is

Ⓐ a microscope Ⓑ a prism Ⓒ a periscope Ⓓ a lens

■ **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.

21. **Assertion :** For a single point reflection on a plane mirror, the angle of deviation is 60°

Reason : If in the above case, angle of incidence is 60°.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

22. **Assertion :** There is occurrence of a tsunami.

Reason : There is collision of tectonic plates.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

■ **Case Study Based Questions**

Read the passage given below and answer the following questions.

A volcano is a mountain with an opening. When pressure builds up inside the earth due to molten rocks known as lava then eruptions occur. Gases and rock shoot up through the opening and spill over or fill the air with lava fragments. Eruptions can cause blasts to release energy. The released energy causes vibrations in the earth's crust creating earth quake. The earth quake may occur before, after or during the volcanic eruption.

23. The place of origin of an earth quake below the surface of earth is called

Ⓐ epicentre Ⓑ hypocenter Ⓒ focus Ⓓ hyper centre

24. The place directly above the seismic focus on the earth's surface is called

Ⓐ epicentre Ⓑ hypocenter Ⓒ focus Ⓓ hyper centre

25. Earth quakes cause damage to

Ⓐ buildings Ⓑ bridges Ⓒ dams Ⓓ All the above.

Chemistry

26. Name the metals(s) which do(es) not react with dilute acid

Ⓐ Au Ⓑ Pt Ⓒ Ag Ⓓ All of these

27. Match the column A with column B.

	Column A (substance)		Column B (Application)
(a)	Oxygen	(i)	For making cracker
(b)	Copper	(ii)	For disinfecting water
(c)	Sulphur	(iii)	All living beings inhale during breathing
(d)	Iron	(iv)	For making electric wires
(e)	Chlorine	(v)	For making rails

Ⓐ (a)—(iii), (b)—(iv), (c)—(i), (d)—(v), (e)—(ii)

Ⓑ (a)—(ii), (b)—(iv), (c)—(v), (d)—(i), (e)—(iii)

Ⓒ (a)—(iii), (b)—(v), (c)—(i), (d)—(iv), (e)—(ii)

Ⓓ (a)—(iii), (b)—(iv), (c)—(ii), (d)—(v), (e)—(i)

28. Which of the following metal is used in electroplating to make objects appear shining?

Ⓐ Iron Ⓑ Copper Ⓒ Chromium Ⓓ Aluminium

29. When electric current is passed through a conducting solution, there is a change of colour of the solution. This indicates

Ⓐ the chemical effect of current Ⓑ the heating effect of current

Ⓒ the magnetic effect of current Ⓓ the lighting effect of current

30. During electrolysis of copper sulphate solution using copper electrode, reaction at cathode is

Ⓐ $H_2O \rightleftharpoons H^+ + OH^{\ominus}$ Ⓑ $Cu^{2+} + 2e^{\ominus} \longrightarrow Cu$

Ⓒ $Cu - 2e^{\ominus} \longrightarrow Cu^{++}$ Ⓓ All of these

31. During the electrolysis of acidulated water using platinum electrode gas evolved as follows

Ⓐ Oxygen at anode Ⓑ Oxygen at cathode

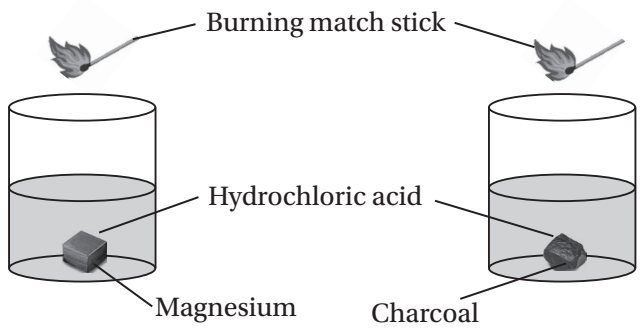
Ⓒ Hydrogen at anode Ⓓ Oxygen at cathode as well as anode

32. During the electroplating of a iron spoon by silver, spoon and silver metals are kept respectively as follows

Ⓐ Silver at cathode and spoon at anode Ⓑ Silver at anode and spoon at any electrode

Ⓒ Silver at anode and spoon at cathode Ⓓ Silver at cathode and spoon at any electrode

33. A piece of magnesium and a piece of charcoal is put in two separate breakers. To each beaker 10 ml of hydrochloric acid is added. A lit match stick was brought close to the mouth of the beakers.



The burning match stick extinguishes with a pop sound when placed over the beaker with magnesium, and acid but not when placed over the beaker with charcoal and acid. What comparison can be drawn between magnesium and charcoal?

Ⓐ Magnesium is a non-metal, while charcoal is a metal
Ⓑ Magnesium is a metal, while charcoal is a non-metal
Ⓒ Magnesium reacts with fire, but charcoal does not
Ⓓ Magnesium reacts with oxygen, but charcoal does not

34. Which one of the following has the highest calorific value?

Ⓐ Kerosene Ⓑ Biogas Ⓒ Hydrogen Ⓓ L.P.G.

■ **Case Study Based Questions (35–37):**

Read the passage given below and answer the following questions.

Coal was formed from large plants or trees that grew in swampy areas millions of years ago. They got burried under the earth due to some natural phenomena like earthquakes or volcanic eruptions. As they sank deeper, the intense heat of the core of the earth and pressure of soil above, drove out the moisture and gases from the remains and increased them 'Carbon Content'. Together with this, the bacterial action slowly converted the cellulose present **into he wood into coal**. This process of conversion of wood into coal in the absence of air, is known as **Carbonisation**. Thus, coal found at greater depths is rich in carbon and poor in moisture content. Since, it was formed from the remains of vegetation, coal is also called a fossil fuel.

35. Under the high pressure temperature, the dead plants got slowly converted into

Ⓐ Coal Ⓑ Coke Ⓒ Charcoal Ⓓ Coal tar

36. Since, coal was formed from the remains of vegetation, it is also called a

Ⓐ Fuel Ⓑ Fossil fuel Ⓒ Petrochemicals Ⓓ Petroleum

37. Which of the following is the best variety of coal?

Ⓐ Peat Ⓑ Lignite Ⓒ Bituminous Ⓓ Anthracite

38. Match the column and select the correct match from the given codes :

Column I	Column II	Column III
P ⟶ Innermost zone	(i) Blue	(a) Complete combustion
Q ⟶ Outer most zone	(ii) Yellow	(b) No combustion
R ⟶ Middle zone	(iii) Black	(c) Partial combustion

Ⓐ P—(ii)—(c), Q—(i)—(a), R—(iii)—(b) Ⓑ P—(i)—(a), Q—(iii)—(b), R—(ii)—(c)
Ⓒ P—(ii)—(c), Q—(iii)—(b), R—(i)—(a) Ⓓ P—(iii)—(b), Q—(i)—(a), R—(ii)—(c)

■ **Assertion Reason based Questions (39–41):**

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.

39. **Assertion (A) :** L.P.G. is a solid fuel.

Reason (R) : The amount of heat energy produced by the combustion of one kilogram fuel is called its calorific value.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

40. **Assertion (A) :** L.P.G. means liquefied petroleum gas.

Reason (R) : C.N.G. means compressed natural gas.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

41. **Assertion (A) :** Gases like carbondioxide CO_2, methane, sulphur dioxide (SO_2) are called green house gases.

Reason (R) : These gases are responsible for Global warming.

Ⓐ A Ⓑ B Ⓒ C Ⓓ D

42. Which gas is produced by the reaction of metals with acid?

Ⓐ Oxygen Ⓑ Hydrogen Ⓒ Corbondioxide Ⓓ Nitrogen

43. The substance expected to have the highest ignition temperature out of the following is :

Ⓐ Kerosene Ⓑ Petrol Ⓒ Coal Ⓓ Alcohol

44. The place where the substances vapourises while burning is called a candle flame is divided into three zones. The dark zone of the candle :

Ⓐ Inner most zone Ⓑ Middle zone Ⓒ Outer zone Ⓓ Luminous zone

45. Which of the following is an alloy?

Ⓐ Brass Ⓑ Antimony Ⓒ Zinc Ⓓ Boron

46. He, Ne, Ar are known as

Ⓐ Liquid metals Ⓑ Metalloids Ⓒ Strong non-metals Ⓓ Inert gas

47. Which of the following is a non-metal and good conductor of heat and electricity?

Ⓐ Bron Ⓑ Copper Ⓒ Brass Ⓓ Graphite

48. Which of these is the most reactive metal?

Ⓐ Magnesium Ⓑ Gold Ⓒ Zinc Ⓓ Sodium

49. A solution of chemical compound which conducts electric current and at the same time undergoes a chemical change is known as :

Ⓐ Conductor Ⓑ Insulator Ⓒ Electrolyte Ⓓ None of these

50. The positively charged ion formed when a chemical compound is dissolved in water is called :

Ⓐ Anion Ⓑ Cation Ⓒ Cathode Ⓓ Anode

Mathematics

51. The range of the data: 6,14,22,16,6,5,5,18,25,15, and 4 is

Ⓐ 4 Ⓑ 21 Ⓒ 25 Ⓓ 20

52. In the interval 20-35, 35 is called

Ⓐ Upper limit Ⓑ Lower limit Ⓒ Range Ⓓ Frequency

53. Tally marks are used to find which of the following?

Ⓐ Frequency Ⓑ Lower limits Ⓒ Upper limits Ⓓ Class marks

54. Determine the values of (x, y) coordinates from the given equation (x + 2, 4) = (5, y – 2)

Ⓐ (3, 6) Ⓑ (2, 1) Ⓒ (7, 12) Ⓓ (6, 3)

55. The coordinates of the mirror image in the y-axis of point (9,8) will be

Ⓐ (–8, –9) Ⓑ (–9, 8) Ⓒ (9, 8) Ⓓ (–9, –8)

56. What will be the value of a? Given the points P, Q, R on x-axis as (2,0), (–6,0) and (3, a–2) respectively.

Ⓐ 0 Ⓑ 3 Ⓒ 2 Ⓓ –6

57. A line graph which is a whole unbroken line is called

Ⓐ linear graph Ⓑ pie-chart Ⓒ histogram Ⓓ bar-graph

58. In line graph or linear graph x-axis represents the variable which is known as

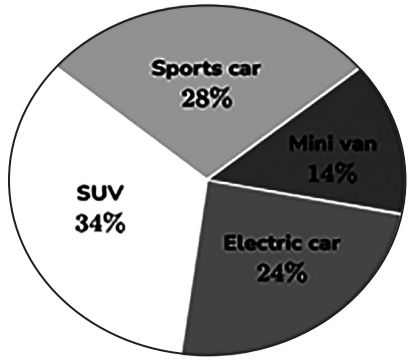
Ⓐ independent variable Ⓑ dependent variable

Ⓒ constant Ⓓ arbitrary constant

59. The graph represented by y = 2x + 3 is

Ⓐ a line graph Ⓑ a linear graph Ⓒ pie graph Ⓓ none of these

60. 150 random people were asked what type of car they preferred. The pie chart below shows the results. How many people said they would prefer an electric car?



Ⓐ 28 Ⓑ 24 Ⓒ 26 Ⓓ 36

61. Which graph is suitable to highlight the data as a part of a whole?

Ⓐ linear graph Ⓑ pie-chart Ⓒ histogram Ⓓ bar-graph

62. If a person spends 9 hours in office work daily, then the corresponding central angle in the pie graph is

Ⓐ 130° Ⓑ 125° Ⓒ 135° Ⓓ 36°

63. How many outcomes can be obtained by tossing 2 coins together?

Ⓐ 1 Ⓑ 2 Ⓒ 3 Ⓓ 4

64. When a die is thrown, what is the probability of getting a number greater than 5?

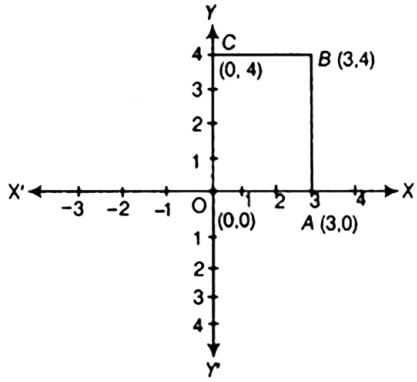
Ⓐ $\frac{1}{8}$ Ⓑ $\frac{1}{3}$ Ⓒ $\frac{1}{6}$ Ⓓ $\frac{2}{3}$

65. A bag has 12 red, 5 blue and 6 green balls. What is the probability of picking a green ball from bag?

Ⓐ $\frac{12}{23}$ Ⓑ $\frac{6}{23}$ Ⓒ $\frac{5}{23}$ Ⓓ $\frac{1}{23}$

■ **Case Study Based Questions (66–68):**

Your Mathematics teacher has drawn the figure given below to ask few questions.



On the basis of above information answer the following questions.

66. The name of the figure OABC is

Ⓐ square Ⓑ rectangle Ⓒ rhombus Ⓓ kite

67. The length of OA is

Ⓐ 2 units Ⓑ 4 units Ⓒ 3 units Ⓓ 5 units

68. The length of OB is

Ⓐ 2 units Ⓑ 4 units Ⓒ 3 units Ⓓ 5 units

■ **Assertion Reason based Questions (69–70):**

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.

69. **Assertion(A) :** In a Distance-Time graph, time represents the independent variable.

Reason(R) : Time is represented on y-axis and distance on x-axis.

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

70. **Assertion(A) :** If a box contains 5 white, 2 red and 4 black marbles, then the probability of drawing a white marble from the box is $\frac{5}{11}$.

Reason(R) : $0 \le P(E) \le 1$, where E is any event.

Ⓐ a Ⓑ b Ⓒ c Ⓓ d

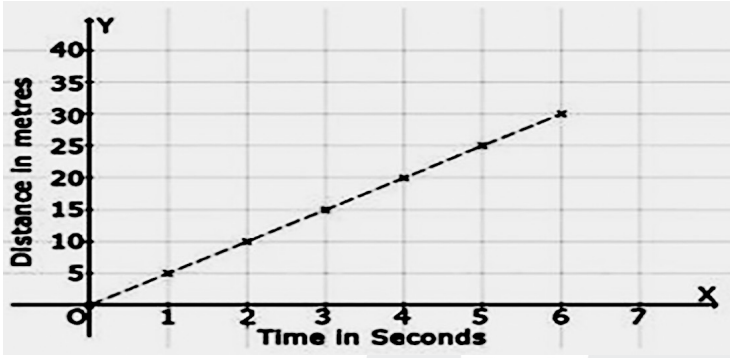
71. What is the probability of getting a sum as 3 if two dice are thrown together?

Ⓐ $\frac{5}{18}$ Ⓑ $\frac{1}{18}$ Ⓒ $\frac{1}{4}$ Ⓓ $\frac{1}{36}$

72. What is the total angle at the centre of pie chart?

Ⓐ 360° Ⓑ 320° Ⓒ 180° Ⓓ 90°

73.



From the graph find the distance covered in 6 seconds.

Ⓐ 30 m Ⓑ 35 m Ⓒ 25 m Ⓓ none of these

74. The perpendicular distance of the point P (3, 4) from the Y-axis is

Ⓐ 3 units Ⓑ 4 units Ⓒ 5 units Ⓓ 7 units

75. The class mark of the class 30-60 is

Ⓐ 40 Ⓑ 30 Ⓒ 45 Ⓓ 20

Biology

76. The crops sown in the rainy season are called

Ⓐ Kharif crops Ⓑ Rabi crops Ⓒ Zaid crops Ⓓ All

77. What is the advantage of using a sprinkler irrigation system?

Ⓐ Higher water wastage Ⓑ Uniform water distribution

Ⓒ Increased soil erosion Ⓓ All

78. Which microorganism is responsible for the process of fermentation in yoghurt production?

Ⓐ Bacteria Ⓑ Yeast Ⓒ Virus Ⓓ Mould

79. Which type of microorganism causes anthrax and tuberculosis in animals?

Ⓐ Bacteria Ⓑ Fungi Ⓒ Protozoa Ⓓ Virus

80. Why is community involvement crucial in the success of Project Tiger?

Ⓐ To promote illegal activities

Ⓑ To reduce awareness about tiger conservation

Ⓒ To support conservation efforts and to reduce human – tiger conflicts

Ⓓ To exploit tiger habitats

81. Why are endemic species often more vulnerable to extinction?

Ⓐ Due to their adaptability to various habitats Ⓑ Because they have broader global distribution

Ⓒ As they are only found in specific areas Ⓓ Because they are resistant to environmental changes

82. Binary fission is observed in

Ⓐ Hydra Ⓑ Amoeba Ⓒ Frog Ⓓ Sheep

83. The process that marks the beginning of reproductive life of a woman is

Ⓐ Fertilisation Ⓑ Menarche Ⓒ Menopause Ⓓ Embryo formation

84. In frog, the change from larva to adult is called

Ⓐ Menstruation Ⓑ Metamorphosis Ⓒ Metastasis Ⓓ Endogenesis

85. Which of the following glands secrete the growth hormone?

Ⓐ Thyroid Ⓑ Pituitary Ⓒ Adrenal Ⓓ Testis

■ **Assertion –Reason Based Question (86, 87):**

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 but Reason is not the correct explanation of Assertion.

C: Assertion is correct but Reason is wrong.

D: Assertion is wrong but Reason is correct.

86. **ASSERTION**: Conservation has become a cause of concern for all.

REASON : The governments of different countries, NGOs, etc. are working relentlessly to conserve biodiversity.

87. **ASSERTION**: A zoo is a means of ex situ conservation.

REASON : In a zoo, animals are conserved outside their natural habitats.

■ **Case Based Question (88-90):**

Read the passage given below and answer the following questions:

The sperms introduced into the vagina, during intercourse, travel upto a part (X) of the female reproductive system, where union of the gametes (Y) occurs. The union of the gametes creates a structure (Z) which is unicellular. The structure Z then travels to the uterus for further growth and development.

88. Name X.

Ⓐ Fallopian tube Ⓑ Ovary Ⓒ Uterus Ⓓ Vagina

89. The process Y is called

Ⓐ Fertilization Ⓑ Ovulation Ⓒ Menstruation Ⓓ Placentation

90. The unicellular structure Z is—

Ⓐ Zygote Ⓑ Embryo Ⓒ Foetus Ⓓ None

91. Name the organisation that publishes the Red Data Book.

Ⓐ IUCN Ⓑ UNESCO Ⓒ UNICEF Ⓓ UNEP

92. Which of these is not caused by deforestation?

Ⓐ Increase in temperature Ⓑ Increase in pollution level

Ⓒ Increase in ground water Ⓓ Increase in carbon dioxide

93. Which one of these is an organic substance obtained from the decomposition of plant and animal wastes?

Ⓐ Manure Ⓑ Fertilizer Ⓒ Insecticide Ⓓ Weedicide

94. Which one of the following is not true about ploughing?

Ⓐ It loosens the soil Ⓑ It aerates the soil

Ⓒ It prevents soil erosion Ⓓ It allows easy penetration of roots into the soil

95. The microbe that fixes nitrogen from the atmosphere to enrich the soil with nitrogen compounds is a

Ⓐ bacterium Ⓑ fungus Ⓒ protozoa Ⓓ virus

96. Microorganisms spread through which of these?

Ⓐ Air Ⓑ Water Ⓒ Direct contact Ⓓ All of these

■ **Assertion – Reason Based Question (97–98):**

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 but Reason is not the correct explanation of Assertion.

C: Assertion is correct but Reason is wrong.

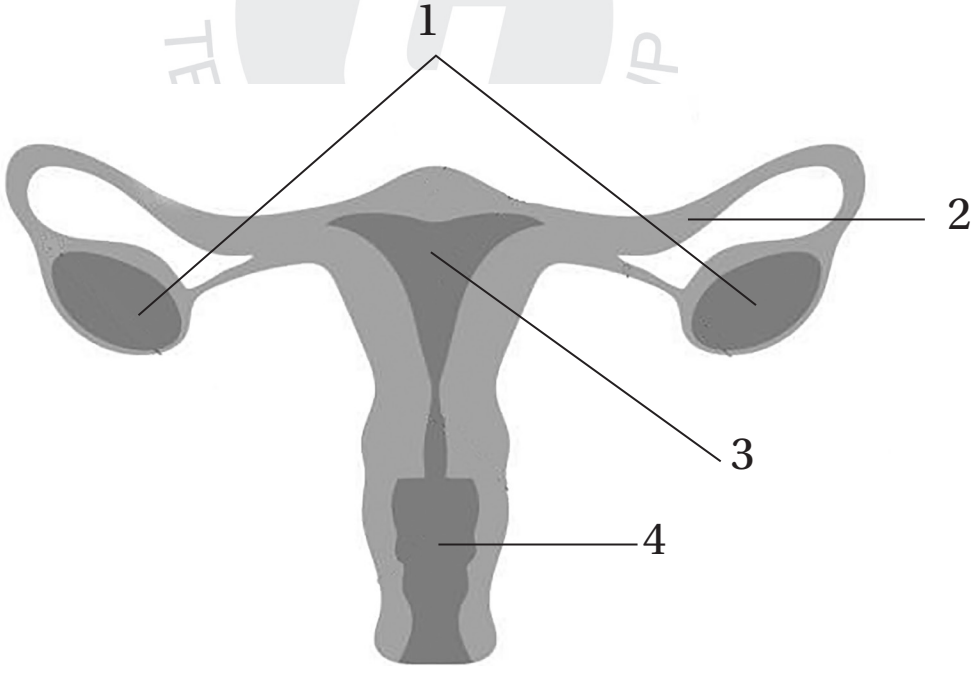
D: Assertion is wrong but Reason is correct.

97. **ASSERTION**: The reproductive life of a woman lasts roughly upto 55 years of age.
REASON : A woman produces one ovum every month.

98. **ASSERTION**: Endocrine glands have ducts to release their secretions.
REASON : Changes that occur during puberty are controlled by hormones.

■ **Case Based Questions (99–100):**

Study the diagram given below and answer the following questions:



99. Select the correct sequence of labelling of the parts 1, 2, 3 and 4.

Ⓐ Oviduct, Ovary, Uterus and Vagina, respectively Ⓑ Ovary, Oviduct, Uterus and Vagina, respectively

Ⓒ Uterus, Ovary, Oviduct and Vagina, respectively Ⓓ Vagina, Uterus, Ovary and Oviduct, respectively

100. In which part does the embryo develop into a foetus?

Ⓐ Part 1 Ⓑ Part 2 Ⓒ Part 3 Ⓓ Part 4