



Monthly Progressive Test

Class: VIII (G)

Subject: PCMB



Test Booklet No.: MPT04(G)

Test Date:

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Time: 180 mins

Full Marks: 200

Important Instructions :

1. The Test is of 180 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(G)24072024.
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

- Pressure is
Ⓐ Force/Area Ⓑ Force \times Area Ⓒ Area / Force Ⓓ None of these
- When three vertical holes are made in a bottle full of water leaks out through the holes. Which water jet travels with most speed?
Ⓐ Jet from the top hole Ⓑ Jet from the middle hole
Ⓒ Jet from the bottom hole Ⓓ All jets travel with the same speed
- Which substance will apply more pressure?
Ⓐ Water Ⓑ Mercury
Ⓒ Air Ⓓ All three applies equal pressure
- We apply a greater pressure when we
Ⓐ Stand Ⓑ Sit Ⓒ Sleep Ⓓ None of these
- Water is filled upto the same height in a tank and in a mug. In which container does water exert more pressure?
Ⓐ Tank Ⓑ Mug
Ⓒ Water exerts same pressure on them Ⓓ Neither
- Which activity shows the pressure of atmospheric pressure?
Ⓐ Functioning of a parachute Ⓑ Car racing
Ⓒ Crumpling a can by hands Ⓓ Hydraulic machine's functioning
- What happens if earth's atmospheric pressure suddenly becomes zero?
Ⓐ We feel weightless? Ⓑ We will burst
Ⓒ Aeroplanes will fly more smoothly Ⓓ Nothing special happens
- For the same force, if the area of contact is decreased, the pressure
Ⓐ Increases Ⓑ Decreases Ⓒ Remains same Ⓓ None of these
- Why do porters put a cloth on their heads when they have to carry loads?
Ⓐ To appear nice
Ⓑ To increase the contact area with the loads
Ⓒ To decrease the contact area with loads
Ⓓ None of these

10. The weight of air column above our head, per unit area is known as
 (A) Atmospheric pressure (B) Barometric pressure
 (C) Both (A) and (B) are correct (D) None of these
11. Which pressure acts on an opened parachute?
 (A) Gravitational pressure (B) Air resistance
 (C) Atmospheric pressure (D) None of these
12. It is difficult to cut cloth with a scissor having blunt blades, why?
 (A) Blunt blades have less area and puts more pressure
 (B) Blunt blades have more area and puts more pressure
 (C) Blunt blades have less area and put more pressure
 (D) Blunt blades have more area and puts less pressure

Assertion Reason based Questions (13 – 15)

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

- (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 and reason (R) is false.

13. **Assertion:** On top of a mountain air pressure is low

Reason: The column of air above top of the mountain is shorter

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

14. **Assertion:** Pressure is a measure of how much force is exerted on a unit area of a surface

Reason: A force acting over a small area gives a large pressure

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

Case based Question (Q. No. 15):

A plastic bottle with three equal sized holes (1, 2, 3) drilled in the vertical side and numbered from top to bottom, when the bottle is filled with water, it spurts from the holes, pushed out by the pressure of water at that level.

15. Where does the water squirt out fastest?

- (A) at top hole (B) at middle hole (C) at bottom hole (D) none of these

[3]

16. What weight does a freely falling body feel?
Ⓐ Its own weight Ⓑ Lesser than its weight
Ⓒ Greater than its weight Ⓓ Zero weight
17. What does a North pole of a magnet do to the North pole of another magnet?
Ⓐ Attract Ⓑ Repel Ⓒ Does nothing Ⓓ None of these
18. What type of force is involved in kicking a ball?
Ⓐ Friction force Ⓑ Electrostatic force
Ⓒ Gravitational force Ⓓ Muscular force
19. If weight of a body is 19.6 N, then the mass of the body (in kg) is
Ⓐ 2 Ⓑ 1.5 Ⓒ 1 Ⓓ 3
20. A force of 5N acting on a body for 3s, then value of change in linear momentum is (in Kg m/s)
Ⓐ 10 Ⓑ 12 Ⓒ 15 Ⓓ 16
21. Tip of a needle is sharp Is it true?
Ⓐ No Ⓑ Yes Ⓒ may be yes Ⓓ we can't say
22. Unit of pressure is
Ⓐ N/m^2 Ⓑ pascal
Ⓒ dyne/cm^2 Ⓓ all options are correct
23. Pascal is a small unit of pressure. A bigger unit of pressure is kilo-pascal. Is it true?
Ⓐ no Ⓑ yes Ⓒ may be yes Ⓓ we can't say
24. Pressure depends upon
Ⓐ applied force Ⓑ contact area
Ⓒ both Ⓐ and Ⓑ are correct Ⓓ none of these
25. Air exerts pressure on the walls of container it is filled into. Is it true?
Ⓐ false Ⓑ true Ⓒ may be true Ⓓ we can't say

Chemistry

26. The condition necessary for combustion is
Ⓐ Presence of a combustible substance
Ⓑ Presence of a supporter of combustion

© Attainment of ignition temperature of the combustible substance

Ⓓ All of them

27. Supporter of combustion is

Ⓐ CO₂

Ⓑ Nitrogen

Ⓒ Oxygen

Ⓓ Both Ⓐ and Ⓑ

28. Choose the inflammable substance

Ⓐ Petrol

Ⓑ LPG

Ⓒ Alcohol

Ⓓ All of them

29. The hottest part of the candle flame is

Ⓐ Innermost zone

Ⓑ The middle zone

Ⓒ The outer zone

Ⓓ None of these

30. Fire may be extinguished by

Ⓐ Removing all the combustion substance from the site of fire

Ⓑ Cutting off the supporter of substance

Ⓒ Bringing down their ignition temperature

Ⓓ All of them

31. Which poisonous gas is formed as a result of incomplete combustion?

Ⓐ Coal gas

Ⓑ Carbon dioxide

Ⓒ Carbon monoxide

Ⓓ Nitrogen oxide

32. Acid rain can be caused by the burning of

Ⓐ Petrol

Ⓑ CNG

Ⓒ Diesel

Ⓓ Coal

Assertion Reason based Questions (33 – 34)

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(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 (A) is correct but reason is wrong.

(d) Assertion is wrong but reason is correct.

33. **Assertion (A):** Water is commonly used to control fire.

Reason (R): Any fire can be extinguished with water.

Ⓐ a

Ⓑ b

Ⓒ c

Ⓓ d

34. Assertion : Magnesium ribbon burns with deep blue flame

Reason : Magnesium burns in presence of oxygen

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

Case based Questions (35 - 37)

The minimum temperature at which a combustible substance catches fire is known as ignition temperature. Low ignition temperature data indicates that the fuel is good. When water is added to a burning substance then ignition temperature decreases. In summer days wood attains ignition temperature sharply and that causes unwanted forest fire. Calorific value is defined as the amount of heat released when 1 kg of fuel is burnt completely. High calorific value indicates that the fuel is very good.

35. Among the given fuels which has the lowest ignition temperature ?

- (A) Hydrogen (B) Petrol (C) Newspaper (D) Cement

36. Addition of which decreases the ignition temperature of a burning substance ?

- (A) Ethyl alcohol (B) Petrol (C) Water (D) Diesel

37. Which of the following has the lowest calorific value ?

- (A) Wood (B) Diesel (C) Petrol (D) LPG

38. Which gas is responsible for the cause of global warming?

- (A) Sulphur (B) Nitrogen (C) Oxygen (D) Carbon dioxide

39. Why goldsmiths blow the outermost zone of a flame to melt gold and silver?

- (A) Because it is the least hot
 (B) Because it has unburnt wax vapours
 (C) Because supports partial combustion
 (D) Because it supports complete combustion

40. Good fuels have

- (A) Low ignition temperature and high calorific value
 (B) Low ignition temperature and low calorific value
 (C) High calorific value and high ignition temperature
 (D) High ignition temperature and low calorific value

41. Which is an exhaustible resource ?

- (A) Air (B) Sunlight (C) Fossil fuel (D) Wind

42. Producer gas is

- (A) [CO + N₂] (B) [CO + H₂] (C) [CO + O₂] (D) [CO + Cl₂]

43. Fuel must be heated to its _____ before it starts burning
- (A) Conversion temperature (B) Ignition temperature
(C) Inversion temperature (D) Combustion temperature
44. Which are produced at the outermost zone of a candle flame ?
- (A) Carbon and water vapour (B) Carbon dioxide and carbon
(C) Carbon dioxide and water vapour (D) Carbon monoxide and water vapour
45. The stepwise stages for formation of coal
- (A) Wood—Peat—Lignite—Bituminous coal—Anthracite coal
(B) Wood—Peat—Bituminous coal—Lignite—Anthracite coal
(C) Wood—Bituminous coal—Peat—Lignite—Anthracite coal
(D) Wood—Peat—Lignite—Anthracite coal—Bituminous coal

Assertion Reason based Question (46)

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

- (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 (A) is correct but reason is wrong.
(d) Assertion is wrong but reason is correct.

46. **Assertion (A):** Goldsmiths use the middle region of a flame to melt the metals.

Reason (R): Partial combustion occurs in the middle zone of the candle flame.

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

47. The substance that does not burn with flame is

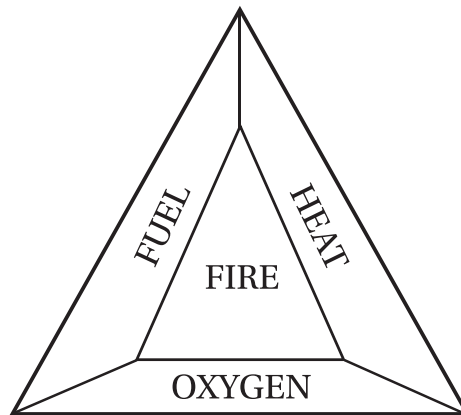
- (A) LPG (B) Camphor (C) Dry grass (D) Charcoal

Case study based Questions (48 - 50)

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

To make something burn, three essential components are needed. They are fuel, oxygen and heat. These appear in the given diagram. Usually heat is present in the form of a spark. By remaining at least one of these things we can stop the fire. For example to stop a fire by removing its oxygen source, fire services used special foams. Forest rangers use fire breaks

[cleared trees] to cut off a fire's supply of fuel. If the firefighter does not use the correct method of extinguishing the fire; a fire can be made worse. In case, water is used on a flammable liquid, it could spread the fire further.



48. A substance which has low ignition temperature and can easily catch fire may be:
 (A) Petrol (B) Alcohols (C) LPG (D) All of these
49. Which is not responsible for forest fire ?
 (A) Carelessness of humans (B) Heat of sun
 (C) Cutting of trees (D) Lighting strike
50. Combustion is generally
 (A) A physical process (B) A chemical process
 (C) Both (A) and (B) (D) None of these

Mathematics

51. $(a + b)(a^2 + b^2)(a^4 + b^4)$ is equal to
 (A) $\frac{a^8 - b^8}{a - b}$ (B) $(a^8 - b^8)(a - b)$ (C) $a^{16} - b^{16}$ (D) $a^8 + b^8$
52. If $a + \frac{1}{a} = 2$, then $a^2 + \frac{1}{a^2}$ is equal to
 (A) $a^4 + \frac{1}{a^4}$ (B) $a^4 - \frac{1}{a^4}$ (C) 1 (D) $a^2 - \frac{1}{a^2}$
53. $a^2 - 4b^2 = ?$
 (A) $(a + 2b)(a + 2b)$ (B) $(a + 2b)(a - 2b)$
 (C) $(2a + b)(2a - b)$ (D) $(2a - b)(2a - b)$

54. $a^2 - b^2 + ca - cb = ?$

- Ⓐ $(a - b)(a - b + c)$ Ⓑ $(a - b)(a - b - c)$ Ⓒ $(a + b)(a + b + c)$ Ⓓ $(a - b)(a + b + c)$

55. $0.24x - 0.08 = 0.4x + 10$, then the value of x is

- Ⓐ 63 Ⓑ -63 Ⓒ 61 Ⓓ -61

56. If $x + \frac{5}{3} = \frac{3}{5}x + \frac{17}{3}$, then the value of x is

- Ⓐ 10 Ⓑ 12 Ⓒ 8 Ⓓ 4

57. Half of 1 percent written as a decimal is

- Ⓐ 0.2 Ⓑ 0.005 Ⓒ 0.05 Ⓓ 0.0005

Assertion Reason based Questions (58 - 59):

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(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. (A) : $x^2 - 25 = (x + 5)(x - 5)$

(R) : $a^2 + b^2 = (a + b)(a - b)$

- Ⓐ a Ⓑ b Ⓒ c Ⓓ d

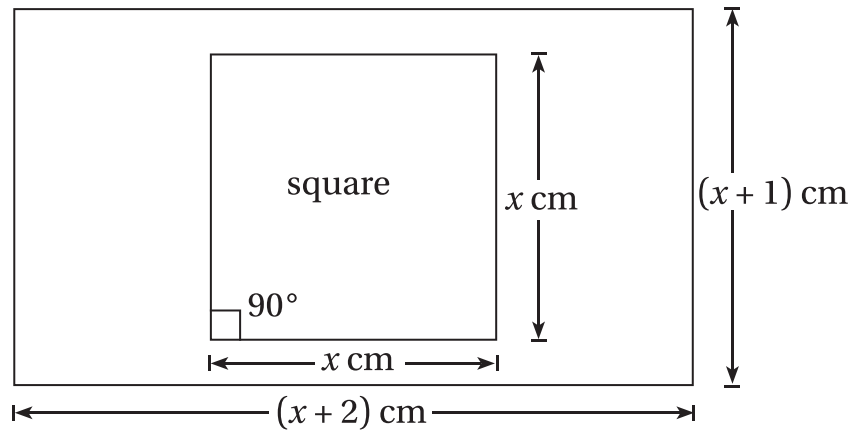
59. (A) : If the price of a product increases by 30% and then decreases by 30% the final price of the product is the same as the original price.

(R) : A percentage increase followed by the same percentage decrease will never return the value to the original.

- Ⓐ a Ⓑ b Ⓒ c Ⓓ d

Case Study Based Questions (60 - 62):

Ram wanted to design a square board of area 169 cm^2 . He went to a market and purchased a big card board (Rectangle). He had to cut the card board for making the square board.



Based on the above information, answer the following questions.

60. Value of x is
 (A) 16 (B) 15 (C) 14 (D) 13
61. Area of the rectangular board
 (A) 169 cm^2 (B) 210 cm^2 (C) 240 cm^2 (D) 195 cm^2
62. If Ram wanted to apply coloured ribbon around the square board then the length of the ribbon will be
 (A) 52 cm (B) 69 cm (C) 21 cm (D) 25 cm
63. If $\frac{n}{n+15} = \frac{4}{9}$, then $\frac{120}{n}$ is
 (A) 12 (B) 10 (C) -12 (D) -10
64. What is the remainder when $(x^3 - 1)$ is divided by $(x - 1)$?
 (A) $x^2 - x + 1$ (B) $x^2 + x + 1$ (C) $x^2 \pm x + 1$ (D) None of these
65. $x^3 - x = ?$
 (A) $x(x^2 + 1)$ (B) $x(x - x^2)$ (C) $x(1 + x)(1 - x)$ (D) $x(x + 1)(x - 1)$
66. The product of all rational numbers lying between -1 and 1 is
 (A) $\frac{1}{2}$ (B) 0 (C) $-\frac{1}{2}$ (D) cannot say
67. The value of $x^{a-b} \times x^{b-c} \times x^{c-a}$ is
 (A) 3 (B) 1 (C) 2 (D) 0
68. Which symbol represents cube root of x ?
 (A) x^2 (B) x^3 (C) $\sqrt[3]{x}$ (D) \sqrt{x}

69. 3430000 in standard form is

- (A) 3.43×10^6 (B) 34.3×10^5 (C) 343×10^4 (D) 3430×10^3

70. If $34x6$ is exactly divisible by 3, then the least value of x is

- (A) 1 (B) 2 (C) 5 (D) 8

Assertion Reason based Question:

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

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

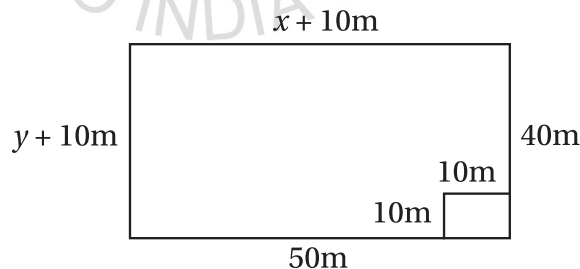
71. (A) : The solution of the linear equation $3x - 4 = 5$ is $x = 3$.

(R) : To solve the equation $3x - 4 = 5$, add 4 to both sides of the equation and then divide both sides by 3.

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

Case study based Questions (72 - 74):

Anil has rectangular garden with dimensions $50\text{m} \times 40\text{m}$. He has made a square plot in one corner for sitting purpose with side length 10m .



On the basis of the above information answer the following questions.

72. The value of x is

- (A) 40m (B) 50m (C) 200m (D) none of these

73. Area of the sitting place

- (A) 200m^2 (B) 150m^2 (C) 100m^2 (D) none of these

74. The value of y is

- (A) 10m (B) 20m (C) 30m (D) 40m

75. Find the approximate value of 14.28% of 777

- (A) 101 (B) 111 (C) 110 (D) none of these

Biology

76. Which of the following organisms is primarily responsible for biological nitrogen fixation?

- (A) *Rhizobium* (B) *Pseudomonas* (C) *Escherichia coli* (D) *Bacillus*

77. Which of the following microorganisms is used in the production of bread and alcohol?

- (A) Bacteria (B) Yeast (C) Virus (D) Algae

78. Which microorganism is primarily responsible for making curd from milk?

- (A) Bacteria (B) Yeast (C) Virus (D) Algae

79. Which microorganism causes diseases like typhoid and tuberculosis in humans?

- (A) Bacteria (B) Fungi (C) Protozoa (D) Viruses

80. Which microorganism causes diseases like malaria and sleeping sickness?

- (A) Bacteria (B) Fungi (C) Protozoa (D) Viruses

81. Which of the following is an example of a common antibiotic used to treat various bacterial infections?

- (A) Insulin (B) Penicillin (C) Aspirin (D) Antihistamine

82. Which of the following is an example of a vector-borne disease?

- (A) Influenza (B) Malaria (C) Diabetes (D) Asthma

83. Which method of food preservation involves heating the food to a high temperature and then quickly cooling it?

- (A) Pickling (B) Freeze-drying (C) Pasteurization (D) Fermentation

Assertion Reason based Questions (84 - 85)

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

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

84. Assertion: *Lactobacillus* helps to transform milk to curd.

Reason: *Lactobacillus* is found naturally in milk.

85. Assertion: *Paramoecium* is a protozoan.

Reason: *Paramoecium* causes malaria.

Case based Questions (86 – 90)

Food spoilage may be defined as any change that renders food unfit for human consumption. These changes may be caused by various factors like contamination by microorganisms, infestation by insects, etc. Food preservation refers to any method, including canning, pasteurization, irradiation and addition of chemicals. Advances in packaging material have played an important role in modern food preservation.

86. Which of the following is a common preservative used at home?

- Ⓐ Salt Ⓑ Sugar Ⓒ Oil Ⓓ All

87. Which of the following microorganisms cause food spoilage?

- Ⓐ Bacteria Ⓑ Fungi Ⓒ Both Ⓐ & Ⓑ Ⓓ Neither Ⓐ nor Ⓑ

88. Salt acts as a preservative by

- Ⓐ Reducing the moisture content of food Ⓑ Changing the chemical nature of food
Ⓒ Changing the temperature of food Ⓓ Increasing the moisture content of food

89. Which of these is not a method of preservation of food by salt?

- Ⓐ Brining Ⓑ Pickling Ⓒ Both Ⓐ and Ⓑ Ⓓ Canning

90. Which of the following bacterium causes food poisoning?

- Ⓐ *Salmonella* Ⓑ *Clostridium* Ⓒ *Campylobacter* Ⓓ All

91. Kharif crops are sown during which season in India?

- Ⓐ Winter Ⓑ Summer Ⓒ Monsoon Ⓓ Spring

92. Which of the following organisms are considered 'friends of farmers'?

- Ⓐ Flatworms Ⓑ Rats Ⓒ Snakes Ⓓ Earthworms

93. Granaries are used to store —

- Ⓐ Seeds before sowing Ⓑ Harvested crops
Ⓒ Fruits Ⓓ Fertilisers

94. Select the disadvantage of using manure —

- Ⓐ Emits a foul odour Ⓑ Releases nutrients slowly
Ⓒ Is bulky and requires careful handling Ⓓ All of the above

95. Cheese, yoghurt and cream are commonly called _____
- Ⓐ Poultry products Ⓑ Agricultural produce
Ⓒ Dairy products Ⓓ Sea food

Case based Questions (96 - 98)

The term 'Protozoa' means 'the first animals'. They depend on other organisms for food and lack a cell wall in their cells. However, some protozoans have chlorophyll and can make their own food. Some live in fresh water, some in salt water and some in soil. Some parasitic forms live in the bodies of plants and animals.

96. Which one of these organisms is not a protozoan?
- Ⓐ Amoeba Ⓑ Mushroom Ⓒ Paramecium Ⓓ Trypanosoma
97. Protozoans are
- Ⓐ Unicellular Ⓑ Multicellular Ⓒ Both Ⓐ and Ⓑ Ⓓ Acellular
98. Which of the following diseases is not caused by a protozoan?
- Ⓐ Malaria Ⓑ Dysentery Ⓒ Sleeping sickness Ⓓ Measles

Assertion Reason based Question

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

- (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.

99. **Assertion (A):** Some algae appear red or brown.

Reason (R): Red or brown algae cannot perform photosynthesis.

100. Which one of the following is a communicable disease?

- Ⓐ Flu Ⓑ TB Ⓒ AIDS Ⓓ All

Space For Rough Works

Space For Rough Works