



Monthly Progressive Test

Class: VIII

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 man pushes a wall but the wall does not move. What is true about the work done by the man?
 (A) Positive (B) Negative (C) Zero (D) Infinite
2. When a force of 10 N acts on an area of 0.5 m^2 , what is the pressure?
 (A) 5 Pa (B) 20 Pa (C) 2 Pa (D) 10 Pa
3. A ball stops after rolling on the floor because of:
 (A) Gravity (B) Friction (C) Air pressure (D) Magnetism
4. A girl presses a pencil harder on paper to make a dark line. This happens because:
 (A) Pressure decreases (B) Area increases (C) Pressure increases (D) Force decreases
5. Which of the following can travel through vacuum?
 (A) Sound (B) Light (C) Air (D) Water
6. A liquid exerts pressure on the walls of the container because:
 (A) Liquids have no weight (B) Molecules move freely
 (C) Liquids transmit pressure equally (D) Liquids are incompressible
7. Sound is produced when:
 (A) An object moves (B) An object vibrates (C) There is light (D) Temperature changes
8. The unit of frequency is:
 (A) Newton (B) Hertz (C) Pascal (D) Joule
9. A submarine moves deep into the sea. The pressure on its walls:
 (A) Decreases (B) Increases (C) Remains same (D) Becomes zero
10. A man stands on loose sand and sinks, but not when he lies down. Why?
 (A) More area reduces pressure (B) More area increases pressure
 (C) Force increases (D) Weight decreases
11. Which mirror is used as a rear-view mirror in vehicles?
 (A) Plane (B) Concave (C) Convex (D) Spherical
12. Which of these cannot change the direction of light?
 (A) Mirror (B) Prism (C) Transparent glass slab (D) Plane wall
13. A person hears an echo. What does it indicate?
 (A) Sound absorbed by wall (B) Sound reflected back (C) Sound refracted (D) Sound dispersed
14. A sound wave cannot travel through:
 (A) Air (B) Water (C) Vacuum (D) Metal
15. The image formed by a plane mirror is:
 (A) Real and inverted (B) Real and erect (C) Virtual and erect (D) Diminished

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 loudness of sound heard decreases as we move away from the source.
Reason (R): The amplitude of vibration of sound waves decreases with distance from the source.

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

17. **Assertion (A):** When white light passes through a prism, it splits into seven different colors.
Reason (R): Different colors of light have different wavelengths and are refracted through different angles by the prism.

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

18. **Assertion (A):** Echoes can be heard only when the reflecting surface is at a certain minimum distance from the source.

Reason (R): The human ear can distinguish two sounds only if the time interval between them is at least 0.1 second.

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

19. **Assertion (A):** The image formed by a plane mirror is always virtual and erect.

Reason (R): In a plane mirror, light rays appear to come from behind the mirror after reflection, but they do not actually meet.

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

Case Study Based Question (Q20 to Q21)

A student stands 2 m away from a plane mirror.

20. The distance between the student and his image is:

(A) 2 m (B) 4 m (C) 1 m (D) 3 m

21. The image formed by a plane mirror is:

(A) Real and inverted (B) Laterally inverted (C) Real and erect (D) Diminished

Case Study Based Question (Q22 to Q23)

A pencil partly dipped in water appears bent at the surface.

22. The bending of light when it passes from air to water is called:

(A) Reflection (B) Refraction (C) Dispersion (D) Scattering

23. The light bends because:

(A) Speed of light changes (B) Color changes
 (C) Intensity changes (D) Frequency changes

Case Study Based Question (Q24 to Q25)

A girl uses a sharp knife to cut fruits easily, but finds it hard with a blunt knife.

24. A sharp knife cuts easily because:

(A) More force (B) More area, less pressure
 (C) Less area, more pressure (D) Sharp knives are lighter

25. Pressure depends on:

(A) Force and area of contact (B) Only area (C) Only force (D) Shape of object

Chemistry

26. A solution of chemical compound which conducts electric current and at the same time undergoes a chemical change is known as :
- (A) conductor (B) insulator (C) electrolyte (D) None of these
27. The positively charged ion formed when a chemical compound is dissolved in water is called :
- (A) anion (B) cation (C) cathode (D) anode
28. Which of the following metal is used in electroplating to make objects appear shining?
- (A) iron (B) copper (C) chromium (D) Aluminium
29. When electric current is passed through a conducting solution, there is a change of colour of the solution. This indicates :
- (A) the chemical effect of current (B) the heating effect of current
(C) the magnetic effect of current (D) the lighting effect of current
30. During electrolysis of copper sulphate solution using copper electrode, reaction at cathode is :
- (A) $\text{H}_2\text{O} = \text{H}^+ + \text{OH}^-$ (B) $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$ (C) $\text{Cu} - 2\text{e}^- \rightarrow \text{Cu}^{++}$ (D) All of these
31. During the electrolysis of acidulated water using platinum electrode gas evolved as follows :
- (A) oxygen at anode (B) oxygen at cathode
(C) hydrogen at anode (D) 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 :
- (A) silver at cathode and spoon at anode (B) silver at anode and spoon at any electrode
(C) silver at anode and spoon at cathode (D) silver at cathode and spoon at an electrode
33. Fuel must be heated to its - before it starts burning.
- (A) conversion temperature (B) ignition temperature
(C) inversion temperature (D) combustion temperature
34. 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
35. Match the item of column I with the items of column II
- | Column - I | Column - II |
|---------------|---------------------|
| a. L. P. G | (i) Non-combustible |
| b. iron nails | (ii) Deforestation |
| c. Candle | (iii) Cooking gas |
| d. Wood | (iv) Flame |
- (A) a - (iii), b - (i), c - (iv), d - (ii) (B) a - (iii), b - (ii), c - (i), d - (iv)
(C) a - (ii), b - (iii), c - (i), d - (iv) (D) a - (ii), b - (iii), c - (iv), d - (i)

Assertion and Reason: (Q. No. 36 — Q. No. 39)

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.

36. **Assertion (A):** One of the most reliable method to present metal objects from rust is electroplating.
Reason (R): Electroplating is the process of depository a layer of metal onto another with the help of electricity.
 (A) A (B) B (C) C (D) D
37. **Assertion (A):** Bulbs are more preferred than LED at the time of making traffic signals.
Reason (R): LED have longer life time than bulbs.
 (A) A (B) B (C) C (D) D
38. **Assertion (A):** On small iron made bodies, chromium coating is given.
Reason (R): Chromium presents the iron made body from corrosion.
 (A) A (B) B (C) C (D) D
39. **Assertion (A):** Electrical appliance are touched in wet hands.
Reason (R): touchy with wet hands, the colours of these appliance get affected.
 (A) A (B) B (C) C (D) D
40. The device which can be used to detect very small current flowing in a electric circuit is :
 (A) LEAD (B) MCB (C) LED (D) None of these
41. The process by which a liquid which undergoes a chemical change when electricity is passed through it is called:
 (A) electrode (B) anion (C) electrode (D) electrolysis
42. The substance that does not burn with flame is :
 (A) LPG (B) Campher (C) dry gas (D) charcoal
43. Which of the following has the highest calorific value ?
 (A) Kerosene (B) Bio gas (C) LPG (D) Petrol
44. Petroleum was obtained from organism :
 (A) living on the land (B) living on the plants (C) living in the sea (D) living on the rocks

Case Base Question (Q.45 to Q.47)

Good conductors are those which can spontaneously conduct electricity. Conductors can be solid, liquid and gaseous. On the other hand non-conducting materials can not conduct electricity and they are termed as insulators. For electricity conduction the first criteria is there must be a circuit. Electrical energy can be converted into mechanical energy, heat energy, chemical energy etc.

45. Conductors are :
 (A) solids, gaseous (B) gaseous, liquid
 (C) solids, liquids (D) solids, liquid and gaseous
46. An example of an insulator is :
 (A) dilute sulphuric solution (B) rubber
 (C) copper (D) steel.

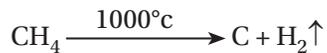
47. In case of ringing of bells in your school the correct option is :
- (A) electrical energy converted into chemical energy
 (B) mechanical energy converted in to clectrical energy
 (C) electrical energy converted in to mechanical energy
 (D) chemical energy converted in to mechanical energy

Case Base Question (Q.48 to Q.50)

LNG (Liquefied Natural Gas) :

This is natural gas in liquid form. This is produced by purifying natural gas and cooling it to -260°F . This process is known as liquification.

This has a high cost for storage and production. Natural gas is used as a source of carbon and hydrogen. When it heated strongly in tthe obsence of air (called pyrolysis) it forms carbon (c) and hydrogen (H_2)



The carbon thus formed is used as filler in the rubber tyre industry . The hydrogen gas is used to manufacture NH_3 gas, which is further utilized in preparing ammoniacal fertilizers.

Natural gas used as a fuel as it has very high calorific value of 55 kj/g or 55000 kJ/Kg

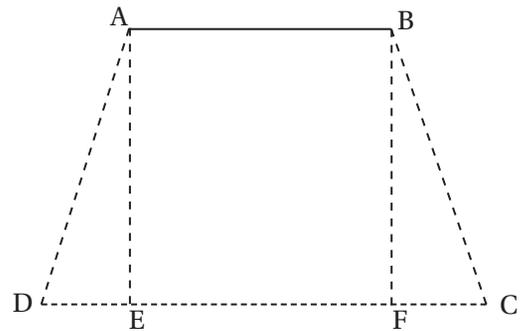
48. Natural gas is used as a source of the following :
- (A) carbon and nitrogen (B) carbon and oxygen
 (C) carbon and hydrogen (D) All of these
49. When methane is heated strongly in absence of air is called :
- (A) Burning (B) Combustion (C) Pyrolysis (D) None of these
50. Natural gas is used as a fuel as it has high calorific value of :
- (A) 55 J/g (B) 55 KJ/g (C) 55000 J/Kg (D) All of these

Mathematics

51. A polyhedron has 10 vertices and 7 faces. How many edges does it have ?
- (A) 17 (B) 15 (C) 13 (D) 8
52. Parallel sides of a trapezium are in the ratio 2 : 1 and the perpendicular distance between them is 12 cm and area is 630 cm^2 , then its shorter of the parallel sides is
- (A) 35 cm (B) 20 cm (C) 10 cm (D) 25 cm
53. In trapezoid ABCD ($\text{AB} \parallel \text{DC}$), $\overline{\text{MN}}$ is the median. Then $\text{MN} = ?$
- (A) $\frac{1}{2} (\text{AB} - \text{DC})$ (B) $\frac{1}{2} (\text{DC} - \text{AB})$ (C) $\frac{1}{2} (\text{AB} + \text{DC})$ (D) $2\text{AB} \cdot \text{DC}$
54. Find the difference of the other two angles of trapezoid ABCD if $\text{AB} \parallel \text{DC}$ and $\angle \text{A} = 58^{\circ}$ and $\angle \text{C} = 125^{\circ}$.
- (A) 122° (B) 55° (C) 67° (D) 45°
55. Which of the following will not form a polyhedron ?
- (A) 3 triangles (B) 2 triangles and 3 parallelograms
 (C) 8 triangles (D) 1 pentagon and 5 triangles

Case Study Based Question – I (Q. 56 to Q. 58)

There was a land near a locality in the shape of a trapezium ABCD. The residents of the locality, with the permission of the concerned authorities decided to fence the land and convert it into a park with shady trees, plants and small herbal garden. The length of the parallel sides AB and DC of the land are 12 m and 28 m respectively and non-parallel sides AD and BC are of equal length which is 10 m. The Park is divided into three parts by drawing two altitudes AE and BF.

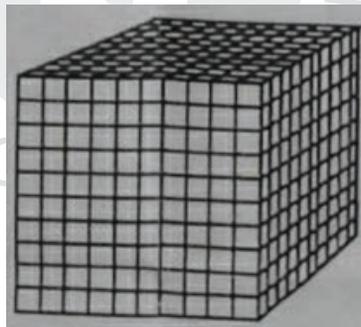


On basis of this information given in passage answer following questions.

56. What is the perimeter of the park ?
 (A) 50 m (B) 60 m (C) 40 m (D) 70 m
57. What is the length of DE ?
 (A) 16 m (B) 6 m (C) 8 m (D) 10 m
58. What is the total area of the triangular portions ?
 (A) 48 m^2 (B) 36 m^2 (C) 42 m^2 (D) 24 m^2

Case Study Based Question – II (Q. 59 to Q. 61)

A warehouse is of cuboid shape of dimension $88 \text{ m} \times 132 \text{ m} \times 198 \text{ m}$. The warehouse owner wants to fill it with cube boxes of equal sizes, such that it filled completely.



On basis of the above information answer the following questions .

59. Find the number of such cubes with maximum volume, so that the room is filled completely.
 (A) 160 (B) 206 (C) 216 (D) 220
60. Find the edge of the largest cube.
 (A) 22 m (B) 26 m (C) 28 m (D) 11 m
61. Find the length of the diagonal of the Warehouse.
 (A) 252.72 m (B) 253.72 m (C) 251.62 m (D) 250 m

Assertion-Reason Based Questions (Q. 62 – 65) :

Direction : In each of the questions given below, there are two statements marked as Assertion (A) and Reason (R). Mark your answer as per the codes provided 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.

62. **Assertion (A):** A cuboid is a three-dimensional shape.

Reason (R): A solid has three dimensions.

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

63. **Assertion (A):** A triangular pyramid has 5 vertices.

Reason (R): A triangular pyramid is a geometric solid with a triangular base, and all three lateral faces are also triangles with a common vertex.

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

64. **Assertion (A):** The area of trapezium with base 10 cm, height 5 cm and the side parallel to the given base being 6 cm is 40 cm^2 .

Reason (R): The area of trapezium = $\frac{1}{2} \times (\text{sum of non-parallel sides}) \times \text{height}$.

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

65. **Assertion (A):** A polygon with minimum number of sides is square.

Reason (R): A square also fits the definition of a rectangle or a rhombus.

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

66. Which of the following is the smallest ?

- (A) $\frac{6}{17}$ (B) $\frac{4}{19}$ (C) $\frac{8}{13}$ (D) $\frac{3}{11}$

67. The value of $100\frac{1}{11} + 101\frac{3}{11} + 102\frac{5}{11} + 103\frac{7}{11} + 104\frac{6}{11}$ is

- (A) 512 (B) $510\frac{1}{11}$ (C) $511\frac{1}{11}$ (D) 511

68. Write a Pythagorean triplet whose two members are 69 and 92.

- (A) 138 (B) 115 (C) 185 (D) 45

69. If $99x5y$ is greatest five-digit perfect square number, then $x + y$ is equal to

- (A) 14 (B) 2 (C) 48 (D) 9

70. $\sqrt[3]{\frac{-686}{250}} \times \sqrt[4]{\frac{625}{2401}} = ?$

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

71. Find the value of: $\frac{2023^2 + 1}{2024^2 - 4045 + 2023^2}$.

- (A) $\frac{2}{3}$ (B) $\frac{1}{2}$ (C) 2024 (D) $\frac{1}{2024}$

72. Factorise : $x^4 - 15x - 56$.

- (A) $(x^2 - x - 7)(x^2 + x + 8)$ (B) $(x^2 - x + 7)(x^2 + x - 8)$
 (C) $(x^2 - 2x - 7)(x^2 + x + 8)$ (D) $(x^2 + 2x - 7)(x^2 + x - 8)$

73. A sells an article to B at a profit of $x\%$. B sells the same article back to A at a loss of $(x - 10)\%$. In this transaction if the gain percent by A is 12%, then find the value of x .
- (A) 15 (B) 12 (C) 20 (D) 18
74. If $x = \sqrt{56 + \sqrt{56 + \sqrt{56 + \dots \dots \infty}}}$, then the value of $x^2 - \frac{1}{x^2}$ is equal to
- (A) $64\frac{1}{64}$ (B) $63\frac{63}{64}$ (C) 64 (D) 63
75. If $a + \frac{1}{b} = \frac{7}{3}$, $b + \frac{1}{c} = 4$ and $c + \frac{1}{a} = 1$, then the value of $9a^2b^2c^2$ is
- (A) 3 (B) $\frac{3}{2}$ (C) 6 (D) 9

Biology

76. Name the human male gamete.
- (A) Sperm (B) Ovum (C) Zygote (D) Testes
77. Where is the female gonad located?
- (A) In the lower part of the abdominal cavity (B) Inside the scrotum
(C) Next to the stomach (D) None of the above
78. Which process is essential for the formation of a zygote?
- (A) Fertilisation (B) Urination (C) Asexual reproduction (D) Formation of placenta
79. Which structure connects the testis to the vas deferens?
- (A) Scrotum (B) Epididymis (C) Urethra (D) None of the above
80. When the young embryo gets embedded in the wall of the uterus, it is called:
- (A) Implantation (B) Gestation (C) Ovulation (D) Division
81. Where does fertilisation occur in frogs?
- (A) On land (B) In the body of the female frog
(C) In the body of the male frog (D) In water
82. Number of male gonad and female gonad in humans, respectively, is
- (A) 1 and 2 (B) 2 and 1 (C) 2 and 2 (D) 1 and 1
83. What is the role of urethra in males?
- (A) It helps to release urine
(B) It helps to release sperms
(C) Both A and B
(D) It helps to carry urine from the kidney to the urinary bladder
84. In which of these can you identify all body parts like hands, legs, head and eyes clearly?
- (A) Ovum (B) Zygote (C) Embryo (D) Foetus
85. What is the shape of an ovum?

