



Monthly Progressive Test

Class: VIII

Subject: PCMB



Test Booklet No.: MPT-03

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

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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. Which of the following is not an example of sound produced by vibrations?

(A) Plucking a guitar string	(B) Rubbing the tuning fork on a table
(C) Striking a drum	(D) Passing current through a wire
2. The larynx is also commonly known as:

(A) Voice box	(B) Ear drum	(C) Wind pipe	(D) Sound tube
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3. In humans, the pitch of the sound depends on:

(A) Thickness and tension of the vocal cords	(B) Size of the tongue
(C) Amount of saliva in the mouth	(D) Rate of breathing
4. Astronauts cannot talk to each other directly in outer space because:

(A) There is no air in space	(B) Their ears cannot hear in space
(C) Space is too cold	(D) Sound travels too fast in space
5. Which of the following is the fastest medium for sound propagation?

(A) Air	(B) Water	(C) Steel (solid)	(D) Vacuum
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6. During a thunderstorm, we see the lightning first and hear the thunder later because:

(A) Light is produced before sound	(B) Sound is produced before light
(C) Light travels much faster than sound	(D) Sound travels much faster than light
7. The speed of light in air is approximately:

(A) 300 m/s	(B) 1500 m/s	(C) 3×10^8 m/s	(D) 3000 m/s
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8. If the amplitude of vibration increases, then the sound produced will be:

(A) Softer	(B) Louder	(C) Same	(D) No sound
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9. Which of the following sounds has the highest frequency?

(A) Male voice	(B) Female voice	(C) Child's voice	(D) Drum beats
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10. Two singers sing the same note at the same loudness. We can still identify their voices due to difference in:

(A) Amplitude	(B) Quality of sound
(C) Speed of sound	(D) Frequency

Assertion - Reason type Questions: (Q. 11 to Q. 14)

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 a correct explanation of the Assertion
 - C. Assertion is true but the Reason is false
 - D. Assertion is False but the Reason is true
11. **Assertion (A):** While sitting in a stadium, you often see the bat hitting the ball before you hear the sound.

Reason (R) : Speed of sound in air is less than the speed of light.

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

12. Assertion (A) : We call sounds produced by barking of dogs, honking of horns of trucks, buses and cars as noise.

Reason (R) : They are unpleasant sounds produced due to the regular or periodic vibrations.

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

13. Assertion (A) : Higher the frequency of a sound wave, greater is its time period.

Reason (R) : Time period and frequency are inversely proportional to each other.

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

14. Assertion (A) : Vocal cords are stretched across the larynx in such a way that they leave a narrow slit between them for air passage.

Reason (R) : When air passes through the slit, the vocal cords vibrate and produce sound.

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

Case Based Questions (Q.15 to Q. 25)

Riya, a Class 8 student, was curious about how we are able to hear sounds. Her teacher explained that the human ear not only helps us in hearing but also in maintaining balance of the body. The ear is divided into three main parts - outer ear, middle ear, and inner ear. The outer ear consists of the pinna and the ear canal. It collects sound waves and directs them towards the tympanic membrane (eardrum). The middle ear contains three tiny bones called ossicles (malleus, incus, and stapes). These bones amplify the sound vibrations and pass them to the inner ear. The inner ear consists of the cochlea (which helps in hearing) and the semicircular canals (which help in maintaining balance). The auditory nerve then carries the electrical signals to the brain, where they are interpreted as sound.

15. Which of the following is the correct sequence in which sound travels through the human ear?

- (A) Pinna → Cochlea → Ossicles → Brain
 (B) Pinna → Eardrum → Ossicles → Cochlea → Auditory nerve → Brain
 (C) Cochlea → Ossicles → Ear canal → Brain
 (D) Eardrum → Cochlea → Pinna → Brain

16. The part of the ear that collects sound waves is:

- (A) Cochlea (B) Ossicles (C) Pinna (D) Semicircular canals

17. The eardrum is also known as:

- (A) Tympanic membrane (B) Auditory nerve (C) Cochlea (D) Malleus

18. Which of the following is the correct order of the ossicles?

- (A) Stapes → Malleus → Incus (B) Malleus → Incus → Stapes
 (C) Incus → Stapes → Malleus (D) Cochlea → Malleus → Stapes

19. The function of the ossicles is to :

- (A) Maintain balance (B) Transmit and amplify sound vibrations
 (C) Convert sound into electrical signals (D) Collect sound waves

20. The cochlea is mainly responsible for:
 (A) Hearing (B) Balance (C) Collecting sound (D) Protecting the ear
21. The semicircular canals are associated with:
 (A) Hearing (B) Balance of the body (C) Collecting sound waves (D) Amplifying sound
22. The auditory nerve carries messages to:
 (A) The cochlea (B) The eardrum (C) The brain (D) The pinna
23. Which part of the ear vibrates first when sound enters?
 (A) Ossicles (B) Cochlea (C) Eardrum (D) Auditory nerve
24. If the cochlea is damaged, which ability will be affected?
 (A) Hearing (B) Balancing (C) Collecting sound waves (D) Protecting the ear
25. Which of the following statements is true?
 (A) The middle ear maintains balance.
 (B) The inner ear has both hearing and balancing functions.
 (C) The outer ear converts vibrations into electrical signals.
 (D) The auditory nerve amplifies sound vibrations.

Chemistry

26. Which of these fuel has the highest calorific value ?
 (A) Coke (B) Petrol (C) LPG (D) methane
27. Which has the highest contribution to global warming ?
 (A) Methane (B) C.F.C (C) Ozone (D) Carbon-dioxide
28. _____ is yellow in colour and is moderately hot.
 (A) Middle zone (B) Outermost zone (C) innermost zone (D) None of them
29. In an experiment 4.5 kg of a fuel was completely burnt. The heat produced was measured to be 1.80,00 kJ. Calculate the calorific value of the fuel.
 (A) 20,000 KJ/kg (B) 15,000 KJ/kg (C) 30,00 KJ/kg (D) 40,000 KJ/kg
30. Water gas is :
 (A) Carbon monoxide + Nitrogen (B) Carbon monoxide + Hydrogen
 (C) Carbon monoxide + Oxygen (D) Carbondioxide + Hydrogen
31. If a person's clothes catch fire, the best way to extinguish the fire is to :
 (A) Throw water in clothes (B) Use fire extinguisher
 (C) Cover the person with a woolen blanket (D) Cover the person with a polythene sheet
32. Match the item of column I with the items of column II.

	Column-I		Column-II
(A)	LPGs	(i)	non-combustion
(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)

33. Conditions necessary for combustion is :

- (A) Presence of combustible substance
 (B) Presence of supporter of combustion
 (C) Attainment of ignition temperature of the combustible substance.
 (D) All of them

34. Choose the inflammable substance :

- (A) Petrol (B) LPG (C) Alcohol (D) All of them

35. Fire may be extinguished by

- (A) Removing all the combustion substance from the site of fire
 (B) Cutting of the supporter of fire
 (C) Bringing down other ignition temperature
 (D) All of them

36. The hottest part of the candle flame is

- (A) Innermost zone (B) The middle zone (C) The outer zone (D) None of these

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

- (A) N_2 (B) CO_2 (C) CO (D) NO_2

38. Which are produced at the outermost zone of a candle flame?

- (A) Carbon and water vapour (B) Carbondioxide and carbon
 (C) Carbondioxide and water vapour (D) Carbon monoxide and water vapour

Assertion and Reason: (Q. 39 to Q. 42)

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):** Coal is a fuel.

Reason (R): On burning of coal, heat and light are produced.

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

40. **Assertion (A):** Coal does not burn with flame but candle does.

Reason (R): Candle is made of Wax.

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

41. **Assertion (A):** We cannot see the exhaust produced after burning of LPG.

Reason (R): When LPG is burnt then colourless carbon dioxide and water vapour is produced.

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

42. **Assertion (A):** It is very much harmful to smell the gases coming out during burning of coal.

Reason (R): When coal is burnt then carbon monoxide is produced.

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

43. Which of the following involves only physical change?

- (A) Dissolution of lime in water
 (B) Dissolution of carbon dioxide in water at high pressure
 (C) Dissolution of concentrated acid in water.
 (D) Electrolysis of water.

44. Which of the following is not a chemical change?

- (A) Passing of steam over red hot coke
 (B) Change in the colour of dilute nitric acid upon long standing
 (C) Absorption of moisture by P_2O_5 .
 (D) Absorption of moisture by $CaCl_2$.

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

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 attain ignition temperature sharply and that causes unwarmed 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.

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

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

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

- (A) Ethylalcohol (B) Petrol (C) Water (D) Diesel

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

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

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

The place where the substances vapourise while burning is called a candle flame is divided into three zones.

48. The dark zone of the candle is called.

- (A) Innermost zone (B) Middle zone (C) Outer zone (D) Luminous zone

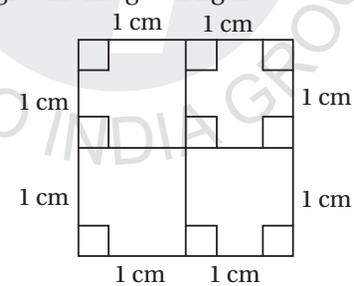
49. Partial combination takes place here this region is moderately hot it is also known as :

- (A) Innermost zone (B) Non-luminous zone (C) Luminous zone (D) Candle flame

50. In this region complete combustion of water vapours with a blue colour flame :

- (A) Innermost zone (B) Middle zone (C) Luminous zone (D) Outer zone

Mathematics

51. In a class, there are three groups A , B and C . If one student from group A and two students from group B are shifted to group C , then what happens to the average weight of the students of the class?
- (A) It increases (B) It decreases
(C) It remains the same (D) No conclusion can be taken due to insufficient data
52. The arithmetic mean of the first 10 whole numbers is?
- (A) 5 (B) 4 (C) 5.5 (D) 4.5
53. A scored 30% marks and failed by 15 marks. B scored 40% marks and obtained 35 marks more than those required to pass. The pass percentage is
- (A) 33% (B) 38% (C) 43% (D) 46%
54. A principal P becomes Q in 1 year when compounded half-yearly with $R\%$ annual rate of interest. If the same principal P becomes Q in 1 year when compounded annually with $S\%$ annual rate of interest, then which one of the following is correct?
- (A) $R = S$ (B) $R > S$ (C) $R < S$ (D) $R \leq S$
55. Find out of the difference between SI and CI at the rate of 10% per annum for 2 years on ₹ 500.
- (A) 0 (B) 50 (C) 100 (D) 150
56. A bought a cell phone and sold it to B at 10% profit. Then B wanted to sell it back to A at 10% loss. What will be A 's position if A agreed?
- (A) Neither loss nor gain (B) Loss 1% (C) Gain 1% (D) Gain 0.5%
57. Find out the total number of Rectangles in this given figure?
- 
- (A) 4 (B) 5 (C) 8 (D) none of these
58. 153 is a Armstrong number because $1^3 + 5^3 + 3^3 = 153$. Which one of the following is a Armstrong number?
- (A) 370 (B) 470 (C) 170 (D) 270
59. A rectangular box with square ends has its length 15 cm greater than its breadth and the total length of its edges is 2.04 m. Find the width of the box.
- (A) 12 cm (B) 13 cm (C) 24 cm (D) 26 cm
60. Factorize $2ax - 3ay + 2bx - 3by$
- (A) $(a + b)(2x + 3y)$ (B) $(a + b)(2x - 3y)$ (C) $(a - b)(2x - 3y)$ (D) $(a - b)(2x + 3y)$
61. Find the value of $\sqrt{2\sqrt{2\sqrt{2\sqrt{2\sqrt{2}}}}}$
- (A) 2 (B) 1 (C) $\frac{31}{2^{32}}$ (D) $\frac{71}{2^{72}}$

62. If $a^2 + b^2 + c^2 - k\{(a - b)^2 + (b - c)^2 + (c - a)^2\} = ab + bc + ca$ then k is
 (A) 2^{-2} (B) 2^{-1} (C) 2^0 (D) 2^1
63. If $\frac{C}{5} = \frac{F-32}{9}$ and $C = F = x$, then $\frac{x}{-40}$ is
 (A) 0 (B) 1 (C) 2 (D) 3
64. If there is a 20% profit on the cost price, then what is the profit percentage on the selling price?
 (A) $9\frac{1}{11}\%$ (B) $9\frac{2}{11}\%$ (C) $16\frac{1}{3}\%$ (D) $16\frac{2}{3}\%$
65. If $\sqrt{x+2} = x$ then the number of solution is
 (A) 0 (B) 1 (C) 2 (D) 3

Assertion Reasoning Based Questions [Q : 66–69]

Directions:

Each of these questions contains two statements Assertion (A) and Reason (R). Each of the questions has four alternative choices, any one of the which is the correct answer. You have to select one of the codes (a), (b), (c) and (d) given below.

- (a) A is true, R is true, R is a correct explanation of A
 (b) A is true, R is true, R is not correct explanation of A
 (c) A is true, R is false
 (d) A is false R is true

66. **Assertion (A)** : Let, d_i = number of diagonals of a polygon P with number of sides i . Then $\sqrt{d_4^4 + d_6} = d_5$.
Reason (R) : The total number of diagonals D in a polygon of n sides is given by the formula $D = \frac{n(n-3)}{2}$; $n \geq 3$.
 (A) (a) (B) (b) (C) (c) (D) (d)
67. **Assertion (A)** : The standard form of $\frac{3}{8}$ is 3.125×10^{-1} .
Reason (R) : A number written with one digit to the left of the decimal point and multiplied by 10 raised to some power is said to be written in standard form.
 (A) (a) (B) (b) (C) (c) (D) (d)
68. **Assertion (A)** : $(x^2 - 5)$ is irreducible over rational numbers.
Reason (R) : Irreducibility tells you whether or not factorisation is possible in a given number system.
 (A) (a) (B) (b) (C) (c) (D) (d)
69. **Assertion (A)** : If $ab = cd$, then $(a + b + c + d)$ is not a prime number, where $a, b, c, d \in N$.
Reason (R) : $\text{LCM}(a, b) \times \text{HCF}(a, b) = ab$ where $a, b \in N$.
 (A) (a) (B) (b) (C) (c) (D) (d)

Case Study Based Questions

Case I : [Q : 70–72]

A quadrilateral is a polygon that has four sides. And a parallelogram is a quadrilateral in which both pairs of opposite sides are parallel. An altitude of a parallelogram is a line segment from one vertex that is perpendicular to a nonadjacent side (or to an extension of that side).

RSTV is a parallelogram.

85. Milk sugars is converted to lactic acid during :
- (A) fermentation to produce alcohol (B) cake making
(C) curd formation (D) All of the above
86. Which of the following cannot be used to make compost?
- (A) Dry leaves (B) Dead animals (C) Fragments of rocks (D) Husk of grains
87. Name the pair containing autotrophic organisms:
- (A) All algae and some protozoans (B) Some algae and all protists
(C) All fungi and all bacteria (D) All protists and some virus
88. In breweries, yeast ferments malt to produce _____
- (A) water (B) oxygen (C) Lactic acid (D) Alcohol
89. How do trees reduce soil erosion?
- (A) The roots of the trees hold the soil firmly (B) The trees absorb a lot of sunlight
(C) Trees absorb water from the soil making it dry (D) Some trees store food in their roots
90. How is the decrease in the number of trees linked with the shortage of water?
- (A) Deforestation decreases the earth's temperature which reduces the moisture content of air.
(B) Deforestation disturbs the soil composition leading to high water retention by the soil.
(C) Deforestation prevents absorption of water by the plants reducing ground water level.
(D) None of the above

The questions 91 to 94 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:** Yeast is a unicellular fungi.
Reason: It is used in bakeries to make bread.
- (A) A (B) B (C) C (D) D
92. **Assertion:** Crops should be stored with a lot of care in specific places.
Reason: Fruits and vegetables are stored in silos.
- (A) A (B) B (C) C (D) D
93. **Assertion:** Fertilisers provide nitrogen, phosphorus and potassium to the soil.
Reason: Fertilisers are used to kill animal pests from crop fields.
- (A) A (B) B (C) C (D) D
94. **Assertion:** Birds show migration only to lay eggs.
Reason: Arctic Tern is a migratory bird.
- (A) A (B) B (C) C (D) D

Read the given passage and answer the following questions (95-97):

Microorganisms play an important role in our lives. Various microorganisms are used in preparing food and beverages for both domestic and industrial use. They can also prove harmful to us as they cause a number of diseases in human, plants and animals. Microorganisms also spoil clothing and leather products.

95. Which of the following is/ are commonly responsible for food spoilage?
- Ⓐ Bacteria and fungi
 - Ⓑ All microorganisms and virus
 - Ⓒ Only virus
 - Ⓓ Only the protozoan responsible for causing dysentery
96. How do microorganisms keep the environment clean?
- Ⓐ By helping in nitrogen fixation
 - Ⓑ By producing spores
 - Ⓒ By helping in the process of photosynthesis
 - Ⓓ By breaking down dead organisms and organic matter
97. The first antibiotic discovered was from a _____.
- Ⓐ bacteria
 - Ⓑ protozoa
 - Ⓒ fungi
 - Ⓓ algae

Read the given passage and answer the following questions (98-100):

Biodiversity is under grave danger due to human activities. According to IUCN, the world loses about three species everyday. When a plant or an animal vanishes from the world, it is called extinct.

98. Which of these is a natural cause of deforestation?
- Ⓐ Forest fire
 - Ⓑ Urbanisation
 - Ⓒ Logging
 - Ⓓ All of the above
99. Which of these refers to large areas of protected land for conserving wild life, plant and animal resources and traditional life of the tribals living in the area?
- Ⓐ Wildlife Sanctuary
 - Ⓑ Biosphere Reserve
 - Ⓒ National Park
 - Ⓓ Zoological Park
100. Which among these has the highest risk of becoming extinct in the near future?
- Ⓐ Rare species
 - Ⓑ Endemic species
 - Ⓒ Endangered species
 - Ⓓ Data deficient species