MI CHAMPS INDIA

AIMCE All India MATH Challenge Exam

CLASS VII 2023-24

Name of the Student :_____ Roll No.: | | | | | | | |

Name of the School :_____ Date : _____

Class : VII Subject: Math Time: 60 Mins.

Instructions to the Candidate

1. Each question carries 1 mark. There is no negative marking.
2. Separate Optical Mark Reader (OMR) Answer Sheet is supplied to you along with question paper booklet.
3. Read the questions carefully and fill in the circle corresponding to your answer. Fill in the circle Completely.
4. Rough work should be done only in the space provided in the Question Paper Booklet.
5. Return the OMR Answer sheet to the invigilator before leaving the examination hall.
6. You can carry the question paper with you after completing the examination.
7. Once you enter the examination hall, you are not permitted to leave till the end of the examination.

1. Simplify $222 - \left[\frac{1}{3}\{42 + (56 - \overline{8+9})\} + 108\right]$

A. 87 B. 88 C. 89 D. 90

2. **A rational number $\frac{-2}{3}$ (A) Lies to the left side of 0 on the number line.**

A. Lies to the left side of 0 on the number line.
B. Lies to the right side of 0 on the number line.
C. It is not possible to represent on the number line
D. Cannot be determined on which side the number lies.

3. **A fraction $\frac{x}{y}$ can be expressed as a terminating decimal if y has no prime factors other than ___.**

A. 2, 3 B. 3, 5 C. 2, 5 D. 2, 3, 5

4. **0.231 expressed as a vulgar fraction is _____.**

A. $\frac{229}{990}$ B. $\frac{229}{900}$ C. $\frac{231}{1000}$ D. $\frac{231}{999}$

5. **A boy was asked to multiply a number by 25. He instead multiplied the number by 52 and got the answer 324 more than the correct answer. The number to be multiplied was**

A. 12 B. 15 C. 25 D. 32

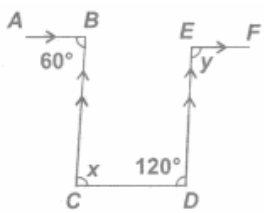
6. **If 7x + 3 = 17, what is the value of 7x - 3?**

A. 14 B. 11 C. 0 D. -3

7. **Two angles are complementary and congruent, then each of the angles is _____**

A. 90° B. 45° C. 180° D. 135°

8. If AB || CD, EF || CD, then valu e of x and y respective ly is _____.



A. 60°, 120° B. 70°, 110° C. 50°, 130° D. 80°, 100°

9. **Two chimneys 18 m and 13 m high stand upright on a ground. If their feet is 12 m apart, then the distance between their tops is _____.**

A. 5 m B. 31 m C. 13 m D. 18 m

10. **By which congruency property, the two triangles connected by the following figure are congruent.**



A. SAS property B. SSS property C. RHS property D. ASA property

11. **The CP of 25 articles is equal to the SP of 20 articles. Then gain % is _____.**

A. 25% B. 20% C. 30% D. 50%

12. Simplify $\left(2x+\frac{1}{3y}\right)^2-\left(2x-\frac{1}{3y}\right)^2$

A. $\frac{4x}{3y}$ B. $2\left(4x^2+\frac{1}{9y^2}\right)$ C. $\frac{8x}{3y}$ D. $\frac{4y}{3x}$

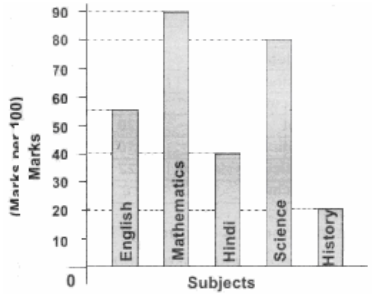
13. **The number which is multiplied by $(-8)^{-1}$ to obtain a product equal to 10^{-1} is _____.**

A. $-\frac{4}{5}$ B. $-\frac{3}{5}$ C. $-\frac{1}{5}$ D. $-\frac{5}{4}$

14. **One side of a parallelogram is 2.4 decametres and its area is 576 m^2. The corresponding altitude is _____.**

A. 24 m B. 24 cm C. 24 dm D. 24 decametre

15. **Read the following graph and answer the question given below:**

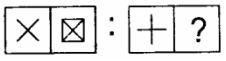


At what subject is the student sharp?

A. English B. Science C. Mathematics D. History

16. **If 5 men can build a wall in 12 days. How many men can build it in 10 days?**

A. 6 men B. 7 men C. 8 men D. 4 men

17. **Find the missing figure.**  **?**

A.  B.  C.  D. 

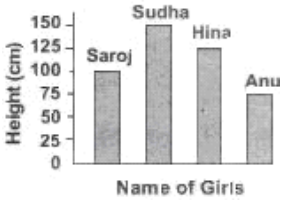
18. **What kind of answer results when a rational number is multiplied by zero?**

A. The answer is zero B. The answer is the original number

C. The answer depends on the original number

D. The answer is the opposite sign of the original number

19. **The graph shows the heights of four girls. Sudha is the tallest. Anu is the shortest. Hina is taller than Saroj. How tall is Saroj?**

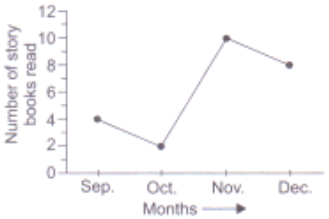


A. 75 cm B. 100 cm C. 125 cm D. 150 cm

20. **Consider the weights of 9 students (in kg) of a particular class given below:**
34, 35, 36, 40, 35, 35, 40, 45, 39. Which of the following is in the order from the least to the greatest?

A. Mean, Mode, Median B. Mean, Median, Mode
C. Mode, Median, Mean D. Mode, Mean, Median

21. The tine graph shows the number of storybooks Armaan read in the last 4 months of a year.



The number of storybooks that he read in October as a fraction of the total number of storybooks read is _____.

A. $\frac{1}{2}$ B. $\frac{3}{4}$ C. $\frac{1}{2}$ D. $\frac{5}{12}$

22. **$\frac{5}{8}$ is the rational number between $\frac{3}{4}$ and $\frac{1}{2}$. Which of the following is not a rational number between $\frac{3}{4}$ and $\frac{1}{2}$?**

A. $\frac{9}{16}$ B. $\frac{13}{16}$ C. $\frac{10}{16}$ D. $\frac{11}{16}$

23. **The value of x such that $-\frac{3}{8}$ and $\frac{x}{-24}$ are equivalent rational numbers is _____**

A. 64 B. -64 C. -9 D. 9

24. **Mohit went to sleep at 6:45 p.m. If he rose at 12 noon, for how many hours did he sleep?**

A. 17 hours 15 mins B. 5 hours 15 mins C. 12 hours D. 6 hours 45 mins

25. **Sonali copied the equation $\frac{5(2x-9)}{3}-8=2x$ from a study guide.**
For this equation, which of the following must be true?

A. $x=\frac{47}{2}$ B. $x=\frac{23}{2}$ C. $x=\frac{21}{4}$ D. $x=\frac{69}{4}$

26. In which of the following figures, Fig. (X) is embedded as its part?



Fig. (X)

A.  B.  C.  D. 

27. **Which of the following options has the same relationship as that of MJ QN ?**

A. PK:NP B. RL:OP C. BR:FV D. EF:IM

28. **A shopkeeper sells two televisions for Rs.1955 each, gaining 15% on one and losing 15% on other. Find his gain or loss percent in the whole transaction.**

A. Profit, $2\frac{1}{4}\%$ B. Profit, 3% C. Loss, , $2\frac{1}{4}\%$ D. Loss, 3%

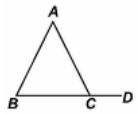
29. **Each of two groups of tourists has 60 people. If $\frac{3}{4}$ of the first group and $\frac{2}{3}$ of the second group board buses to travel to a museum, how many more people of the first group board buses than of the second group?**

A. 2 B. 4 C. 5 D. 40

30. Solve for x : $\frac{6x-2}{9}+\frac{3x+5}{18}=\frac{1}{3}$

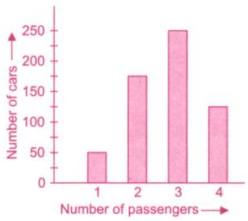
A. $\frac{1}{3}$ B. $\frac{2}{3}$ C. $\frac{3}{5}$ D. $\frac{8}{3}$

31. In the given figure, BC is produced D and $\angle BAC = 40^0$ and $\angle ABC = 70^0$.
Find the value of $\angle ACD$.



A. 130° B. 140° C. 170° D. 110°

32. **The bar graph below shows the number of cars passing through a toll tax.**



Find the percentage of cars which had at least 2 passengers.

A. $91\frac{2}{3}\%$ B. $91\frac{4}{5}\%$ C. $67\frac{1}{3}\%$ D. $47\frac{1}{3}\%$

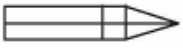
33. **Monika mixed orange syrup and water in the ratio 4 : 9. How many litres of orange syrup were required to mix with 324 L of water?**

A. 36 L B. 144 L C. 167 L D. 198 L

34. **Look at the adjoining figure. If / || m. $\angle ABO = 55^0$ and $\angle OCD = 20^0$, find the value of x.**

A. 75° B. 285° C. 105° D. 360°

35. How many rectangles are there in the given figure ?



A. 6 B. 7 C. 8 D. 9

36. **Mohit, Nitin and Raj play cricket, hockey and football. Mohit, Nitin and Tarun play cricket, football and volleyball. Mohit, Raj, Sumit and Nitin play cricket and hockey. Which game is played by all the boys?**

A. Hockey B. Cricket C. Football D. Volleyball

37. **$5\frac{1}{4}kg$ of oranges and $2\frac{3}{5}kg$ of grapes were bought together by Alisha from the supermarket. What is the total weight of the fruits will she be carrying out of supermarket?**

A. $8\frac{5}{13}kg$ B. $7\frac{17}{20}kg$ C. $7\frac{17}{21}kg$ D. $8\frac{9}{13}kg$

38. **Some adult humming birds weigh as little as 28.36 g. What is the value of 6 in 28.36?**

A. Six B. Six tenths C. Six hundredths D. Six thousandths

39. **Shalini shaded 315 of her design given on the right. Which decimal number represents the shaded part of her design?**



A. 0.6 B. 0.06 C. 0.006 D. 0.0006

40. **If A means 'plus', B means 'minus', C means 'divided by' and D means 'multiplied by' then 18 A 12 C 6 D 2 B 5 equals _____**

A. 17 B. 25 C. 27 D. 45