NELTAS PATH TO EDUCATIONAL EXCELLENCE | M-CAT International Maths Competition

Grade **7**

Grand Finale 2024-25

M-CAT Question Paper

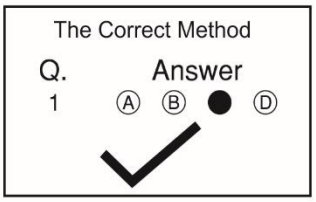
NMA025

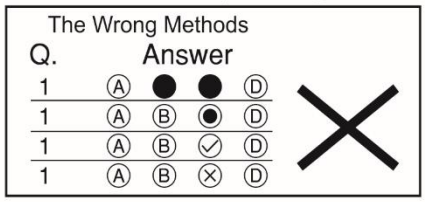
Return the answer sheet along with question paper to the invigilator at the end of the exam.

TOTAL MARKS	QUESTIONS	DURATION
100	**50**	**60 mins**

Instructions for Student:

- Read the question carefully before answering.
- Each question has 4 options (A, B, C & D).
- Choose one correct option as your answer, from the 4 options.
- Every question carries 2 marks.
- There will be an additional 0.5 Negative Marking for every wrong answer.
- On the answer sheet blacken the correct option against the corresponding question number,





- **Use pencil to mark your answer.**
- If you wish to change your answer, erase the previous mark completely.

1. The value of $[(-12) \times (-3) \times (-25)] \div [(-1) \times (-6) \times (-5)]$ is _____.

a. 10
b. 20
c. 30
d. 40

2. Naresh reads $\frac{3}{8}$ of a book. He finds that there are still 125 pages left to be read. What is the total number of pages in the book?

a. 100
b. 200
c. 300
d. 400

3. 15 chocolates are to be divided amongst 3 gift boxes. Which of the following equations can be used to find the number of chocolates, r, in each box?

a. $r + 3 = 15$
b. $15 + r = 3$
c. $3r = 15$
d. $\frac{3}{r} = 15$

4. Which of the following statements about angles made by a transversal cutting two parallel lines is INCORRECT?

a. Corresponding angles are equal in measure.
b. Alternate interior angles are not equal in measure.
c. Interior angles between the parallel lines and on the same side of the transversal are supplementary.
d. Alternate exterior angles are equal in measure.

5. ABC is an isosceles triangle with AB = AC and AD is its altitude. Which the following statements is CORRECT?

a. $\angle B > \angle C$
b. $\angle B < \angle C$
c. $\angle B = \angle C$
d. None of these

6. Read the statements P and Q and choose the correct option.
P: Every fraction is a rational number.
Q: Every rational number is a fraction.

a. P is true and Q is false.
b. P is false and Q is true.
c. Both P and Q are true.
d. Both P and Q are false.

7. What will be the sign of the product of multiplication of 23 negative integers and 88 positive integers?

a. -
b. +
c. Can't say
d. Data is insufficient

8. The working hours in an office are 8:30 am to 4:00 pm with a 60 minute break for lunch. Find the ratio of time spent on work to the time spent for lunch.

a. 8: 30
b. 2: 17
c. 6: 1
d. 13: 2

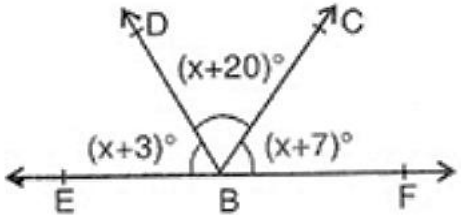
9. Solve for x: $\frac{6x-2}{9}+\frac{3x+5}{18}=\frac{1}{3}$

a. $\frac{1}{3}$ b. $\frac{2}{3}$ c. $\frac{3}{5}$ d. $\frac{8}{3}$

10. What is the product of a fractional number and its reciprocal?

a. 0
b. same number
c. 1
d. undefined

11. In the given figure, find the value of x.

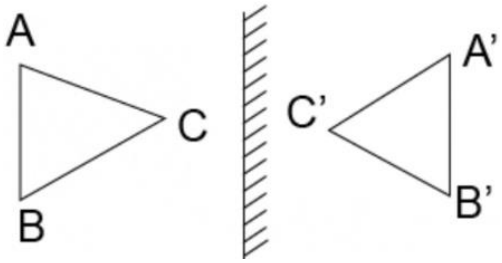


a. 40°
b. 50°
c. 60°
d. 80°

12. Which list of integers is in order from the least to the greatest?

a. −42, −39, −4, 40, 41
b. −42, 41, 40, −39, −4
c. −4, −39, 40, 41, −42
d. 41, 40, −4, −39, −42

13. The two figures are mirror images of each other. Choose the CORRECT option.



a. Both triangles are equal.
b. Both triangles are similar.
c. Both (a) and (b) are correct.
d. None of the above

14. Which of the following is TRUE?

a. $\frac{5}{-8}>\frac{-20}{32}$ b. $\frac{5}{-8}=\frac{-20}{32}$

c. $\frac{5}{-8}<\frac{-20}{32}$ d. None of these

15. A pole is bent at a height of 5 m from the ground and its top touches the ground at a distance of 12 m from the base of the pole. Find the original height of the pole.

a. 20 m
b. 36 m
c. 18 m
d. 25 m

16. One of the sides and the corresponding height of a parallelogram are 5 cm and 7 cm respectively. What is the area of the parallelogram?

a. 12 cm^2
b. 20 cm^2
c. 16 cm^2
d. 35 cm^2

17. What is the value of $9x^2 + 4y^2 - 2xy$ when $x = 5$ and $y = 3$?

a. 236
b. 231
c. 256
d. 286

18. Find the value of $\left\{\left(\frac{1}{3}\right)^{-3} - \left(\frac{1}{2}\right)^{-3}\right\} \div \left(\frac{1}{4}\right)^{-3}$

a. $\frac{19}{64}$ b. $\frac{64}{19}$ c. $\frac{27}{16}$ d. $\frac{16}{27}$

19. The absolute value of $-25 + 10 + 44 - 66$ is _____.

a. 37
b. 36
c. 145
d. -145

20. When a number is reduced by 40, it becomes 60% of itself. Find the number.

a. 100
b. 30
c. 20
d. 50

21. Sunil wrote an equation as $\frac{m}{5}$ = 4. Ravi wrote a statement for Sunil's equation. Which of the following would be Ravi's statement if he has written correctly?

a. One-fifth of m is 4
b. One-fifth of a number is 5
c. One-fourth of m is 4
d. One-fourth of a number is 4

22. Find the value of $3\frac{4}{7} \times 2\frac{2}{5} \times 1\frac{3}{4}$

a. 1
b. 5
c. 10
d. 15

23. Evaluate: $\left[-\frac{17}{18} \times (-3) \times \frac{180}{30}\right]$

a. –17
b. 17
c. –13
d. 13

24. Express the algebraic expression $x - x^8 + x^2 - 1.7x^{10} + 1.4x^8 - 7.8x^2 + 4 - 9x$ in ascending order of exponent.

a. $4 - 8x - 6.8x^2 + 0.4x^8 - 1.7x^{10}$
b. $-1.7x^{10} + 0.4x^8 - 6.8x^2 - 8x + 4$
c. $4 - 6.8x - 8x^2 + 0.4x^8 - 1.7x^{10}$
d. $-1.7x^{10} + 0.4x^8 - 6.8x^2 + 8x + 4$

25. Which of the following statements is CORRECT?

a. 0 is called the additive identity of a rational number
b. 1 is called the multiplicative identity of a rational number
c. The additive inverse of 0 is zero itself
d. All the above

26. If two complementary angles are in the ratio 11:7, then what is the measure of both the angles?

a. 13°, 5°
b. 25°, 65°
c. 55°, 35°
d. 65°, 35°

27. What is the ratio of the area of a semicircle to the area of the circle it is derived from?

a. 1:1
b. 1:2
c. 2:1
d. 1:4

28. What is the value of $\left(9^{\frac{4}{3}} \div 81^{\frac{2}{3}}\right) \times 3^{\frac{3}{2}}$?

a. 3 b. $3^{\frac{3}{2}}$ c. $3^{\frac{4}{2}}$ d. $3^{-\frac{3}{2}}$

29. Fill in the blank: In a circle every _____ is a line of symmetry.

a. Diameter
b. Radius
c. Chord
d. None of these

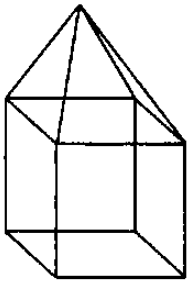
30. Which of the following can be the sides of a triangle?

a. 4.5 cm, 3.5 cm, 6.4 cm
b. 2.5 cm, 3.5 cm, 6.0 cm
c. 2.5 cm, 4.2 cm, 8.0 cm
d. 2.5 cm, 4.2 cm, 9.0 cm

31. What is the value of $(-1)^{35}$?

a. –1
b. 1
c. 0
d. None of these

32. How many external/exposed faces are there in the given solid shape?



a. 8
b. 9
c. 10
d. 11

33. What is the degree of $(6x^5 - 7x^8 + 3x^4 + 2x^3 - 1)$?

a. 8
b. 5
c. 4
d. 3

34. Which of the following quadrilaterals has both line and rotational symmetry of order more than 1?

a. Isosceles triangle
b. Rhombus
c. Scalene triangle
d. Square

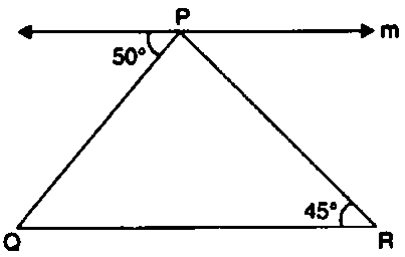
35. Mohan bought a table for ₹ 5000 and sold it for ₹ 6400. What is the percentage of profit made by him?

a. 17%
b. 24%
c. 16%
d. 28%

36. What cross-section do you get when a die is cut horizontally?

a. Square
b. Rectangle
c. Triangle
d. Circle

37. In the following figure, line m||side QR. What is the measure of ∠QPR?



a. 80°
b. 85°
c. 75°
d. 70°

38. What is the breadth of a rectangular sheet of perimeter 100 cm and length 37 cm?

a. 35 cm
b. 13 cm
c. 15 cm
d. 50 cm

39. How can 7 hundredths and 8 thousandths be written?

a. 0.0078
b. 0.078
c. 0.78
d. 78

40. What is the reciprocal of the reciprocal of – 8?

a. 64 b. $\frac{1}{8}$ c. −8 d. $-\frac{1}{64}$

41. When a certain number p, is multiplied by 6, divided by 5 and then added to 8, the result is equal to 2p subtracted from 4. What is the value of p?

a. $\frac{3}{4}$ b. $\frac{3}{6}$ c. $-\frac{5}{4}$ d. $\frac{5}{6}$

42. What is the simple interest if Sam borrows ₹ 25,000 for 12 years at a rate of interest 10% p.a.?

a. ₹ 40,000
b. ₹ 30,000
c. ₹ 50,000
d. ₹ 60,000

43.The base and the altitude of a triangle are 50 cm and 17.2 cm respectively. Find its area.

a. 430 sq. cm
b. 43 sq. m
c. 430 sq. m
d. 430 cm

44. Two parallel lines intersect in _____ point/s.

a. One
b. Two
c. Three
d. No

45. An artist is creating a pattern out of geometric shapes on cardboard. Out of the different shapes used, 25% are squares, 20% are rectangles, 30% are circles and 25% are triangles. If there are 60 shapes in total, how many squares, rectangles, circles and triangles did the artist use?

a. 15, 12, 16, 18
b. 12, 18, 20, 15
c. 15, 12, 18, 15
d. 12, 18, 20, 12

46. What is the maximum number of possible obtuse angles a triangle can have?

a. 0
b. 1
c. 2
d. 3

Answer questions 47–48 based on the information given below:

The prices (in ₹) of 15 products sold by a businessman are:

₹ 450, ₹ 220, ₹ 280, ₹ 220, ₹ 350, ₹ 600, ₹ 560, ₹ 1000, ₹ 280, ₹ 370, ₹ 450, ₹ 560, ₹ 280, ₹ 220, ₹ 600

47. Find the median of the data.

a. ₹ 220
b. ₹ 350
c. ₹ 370
d. ₹ 450

48. What is the mode of the data given in the above Question?

a. ₹ 220
b. ₹ 280
c. ₹ 450
d. Both (a) and (b)

49. In a box, there are 14 orange balls, x white balls and 6 pink balls. A ball is drawn from the box at random. If the probability of getting a white ball is found to be $\frac{1}{3}$ then how many white balls are there in the box?

a. 15
b. 6
c. 9
d. 10

50. In a survey of 500 girls, it was found that 220 like milk, 150 like coffee and 130 like tea. If one girl is chosen at random, then which of the following statements is INCORRECT?

a. The probability that the chosen girl likes tea is $\frac{13}{50}$
b. The probability that the chosen girl does not like coffee is $\frac{7}{10}$
c. The probability that the chosen girl dislikes milk is $\frac{2}{5}$
d. The probability that the chosen girl likes coffee is $\frac{3}{10}$