ORANGE GLOBAL OLYMPIAD

MATHEMATICS
Grade 7

National Level Examination

NLE 2025

Subject Code: | 2 | 0 | 1 |

Total Questions: 40 **Total Marks:** 40 **Time:** 1 hour

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO

- All questions are compulsory.
- Read the instructions on the **ANSWER SHEET** and fill in your **NAME**, **CLASS** and **OTHER INFORMATION**.
- To mark your choice of answer by darkening the circles in the **ANSWER SHEET**, use a **BLUE/BLACK BALL PEN** only.
- You **MUST** record your answers on the **ANSWER SHEET** only.
- There are **40 MULTIPLE CHOICE QUESTIONS**. Use the information provided to choose the **BEST** possible answer among the four options. On your **ANSWER SHEET** fill in the circle that matches your answer.
- $\frac{1}{2}$ **MARK** will be deducted for every **WRONG ANSWER**.
- Return the **ANSWER SHEET** to the invigilator at the end of the examination.
- You are **NOT** allowed to use a calculator. You may use a ruler and spare paper for rough work.

GRADE 7

This question paper contains a total of 40 questions divided into three sections—A, B and C. Read the instructions carefully before attempting these questions.

Section A (Logical Reasoning)

1. If one + three = 8, three + five = 9, four + six = 7, five + seven = 9, then (eight + ten) = ?

   (A) 7 (B) 8

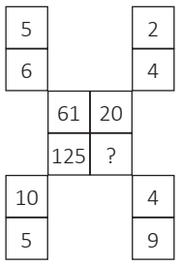
   (C) 9 (D) 10

2. If 17 + 17 = 34289, 22 + 22 = 44484, 13 + 13 = 26169, then (18 + 18) is

   (A) 36324 (B) 164324

   (C) 36256 (D) 46256

3. Find the missing number.



   (A) 87 (B) 94

   (C) 97 (D) 106

4. In the evening while Lakshit is out for a walk, he notices that his shadow falls exactly on his left side. Lakshit is going from

   (A) East to West (B) South to North

   (C) West to East (D) North to South

5. 300 natural numbers are written in sequence (1, 2, 3, 4, ……, 300). Now, numbers at odd places are removed and thus a new series is formed (2, 4, 6, 8, ……, 300). Again, numbers at odd places are removed and a new series is formed. This is continued till a single number is left. Find the number left in the last.

   (A) 255 (B) 256

   (C) 300 (D) 200

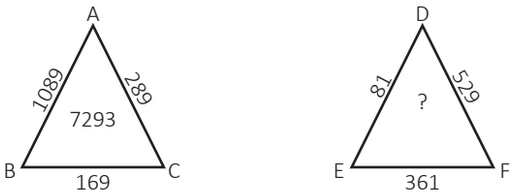
6. Find the missing alphabet in the series:

   A, F, H, M, O, T, ?

   (A) U (B) V

   (C) W (D) Y

7. The number 7293 inside the triangle ABC has been arrived on the basis of some logic and it depends on the numbers written outside the triangle.



On the same logic, the missing number in triangle DEF is _____.

(A) 3646 (B) 3189

(C) 1399 (D) 3933

8. Observe the following addition and find the value of (P + I + L).

$$\begin{array}{r} P\ I \\ +\ I\ Z \\ \hline \mathbf{I\ L\ L} \end{array}$$

Here, each letter represents a distinct digit, and the leftmost digit in each number cannot be zero.

(A) 9 (B) 10

(C) 11 (D) 12

Section B (Subject Specific)

9. "Half of a number is 12 less than twice the number" will be expressed in algebraic expression as:

(A) $\frac{x}{2}-12=2x$ (B) $\frac{(x+12)}{2}=2x$

(C) $2x - 12 = \frac{x}{2}$ (D) $x + 12 = 4x$

10. Which of the following pairs of angles are NOT supplementary?

(A) 169° and 11° (B) 77° and 103°

(C) 61° and 88° (D) 94° and 86°

11. $\left(5\frac{1}{4}-2\frac{1}{3}\right)+\frac{1}{3}$ of $\left(5\frac{1}{2}\div 2\frac{1}{5}\right)$ is equal to _____.

(A) $1\frac{3}{4}$ (B) $2\frac{3}{4}$

(C) $3\frac{3}{4}$ (D) $4\frac{3}{4}$

12. A rational number has a terminating decimal expansion if it can be expressed in the form $\frac{p}{2^m \times 5^n}$, where

(A) p is an integer and, m and n are positive integers.

(B) p is an integer, and m and n are natural numbers.

(C) p is a whole number and, m and n are integers.

(D) p is an integer and, m and n are non-negative integers.

13. The value of $(-1)^{5201} + (-1)^{1010} - (-1)$ =

(A) 0 (B) 1

(C) (–1) (D) 2

14. In a bar graph, the heights of the bars are proportional to

(A) their respective width (B) the number of observations in the data

(C) the range of data (D) the frequency of particular observation

15. Which of the following shapes has an order of rotational symmetry equal to 5?

(A) Equilateral triangle (B) Regular pentagon

(C) Square (D) Regular hexagon

16. The mean of first ten composite numbers is _____ .

(A) 9.4 (B) 14.2

(C) 11.2 (D) 6.5

17. **Statement I:** Every positive integer is a rational number.

Statement II: Zero is an integer but not a rational number.

(A) I is false and II is true (B) I is true and II is false

(C) Both I and II are true (D) Both I and II are false

18. The solution of the equation $5x + 9 = 34$ is _____ .

(A) 5 (B) 4

(C) 3 (D) $\frac{2}{5}$

19. Four friends P, Q, R and S each had a string of 30 metres. They all made a rectangle using the dimensions given below.

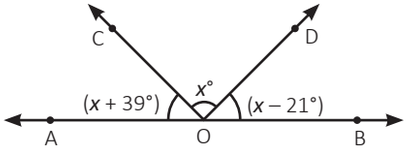
Friends	Dimensions	
	Length	Breadth
P	10	5
Q	11	4
R	9	6
S	12	3

Who among the four made the rectangle with the largest area?

(A) P (B) Q

(C) R (D) S

20. What is the value of x in the given figure?



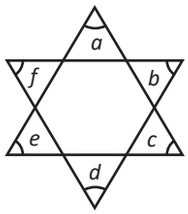
(A) 38° (B) 46°

(C) 62° (D) 54°

21. The time taken by a car to cover 360 km at the average speed of 45 km/h is
(A) 5 hours (B) 6 hours
(C) 8 hours (D) 10 hours

22. The point of concurrence of the medians of a triangle is called
(A) vertex (B) centroid
(C) circumcentre (D) orthocentre

23. The sum of the angles a, b, c, d, e and f of the given figure is _____.



(A) 180° (B) 360°
(C) 540° (D) 370°

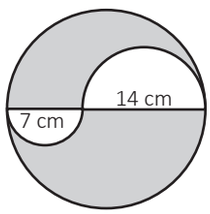
24. **Assertion:** $19^6 \div 19^{10} = 19^4$

Reason: For every non-zero integer 'a', $a^m \div a^n = a^{m-n}$
(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.

25. The smallest rational number _____.
(A) is 0 (B) is 1
(C) is –1 (D) does not exist

26. A total of 500 pieces of sweets are to be divided among Radha, Ahmed, and Krishna, respectively in the ratio of 3 : 8 : 14. How many pieces of sweets will Radha get?
(A) 60 (B) 80
(C) 160 (D) 280

27. Find the area of the shaded region.



(A) 125.5 cm^2 (B) 77 cm^2
(C) 154 cm^2 (D) 250.25 cm^2

28. The length of a wire is $(18x^2 - 7y^2)$ cm. The length of another wire is $(6x^2 - 16y^2)$ cm. How much longer is the first wire than the second one?
(A) $10x^2 + 6y^2$ (B) $12x^2 + 9y^2$
(C) $12x^2 - 9y^2$ (D) $12x^2 - 23y^2$

Instruction: Q. 29 to 33 are two-key based questions having four options A, B, C and D out of which TWO are correct.

29. The shapes with no edges are:
(A) Sphere (B) Cone
(C) Doughnut (D) Cube

30. Which of the following statements are true?

(A) The multiplicative inverse of zero does not exist.

(B) If two numbers are equal, then their LCM is less than their HCF.

(C) $\frac{37}{1000000} = 37 \times 10^6$

(D) The product of proper and improper fractions is less than the improper fraction.

31. Which of the following are pairs of like terms?

(A) x and x^2 (B) x^2 and xy

(C) $3x^3$ and $0.5x^3$ (D) $4xy^3$ and $2y^3x$

32. Which of the following examples shows that if the bases are the same, then powers are added in the multiplication of numbers?

(A) $6^3 \times 6^4 = 6^7$ (B) $8^2 \times 8^5 = 8^{-3}$

(C) $3^4 \times 3^6 = 3^{10}$ (D) $2^7 \times 2^7 = 4^7$

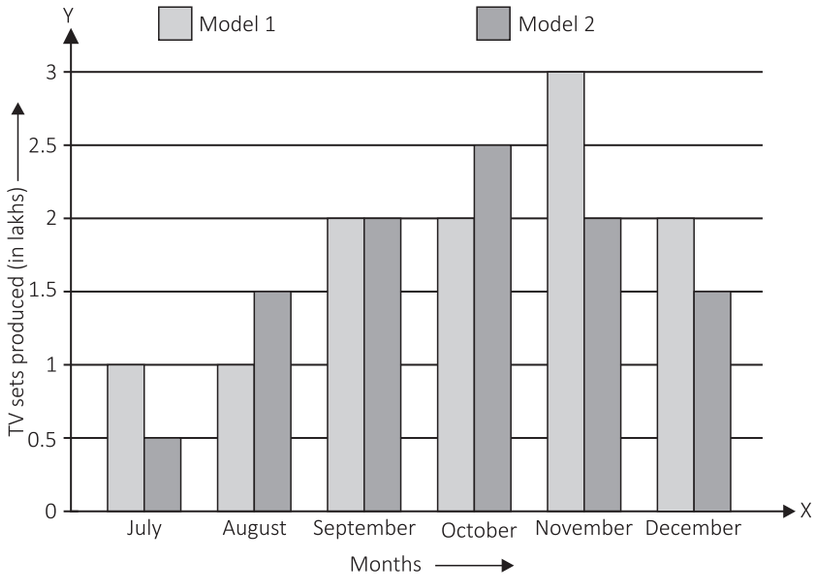
33. Fractions equivalent to 12.5% are

(A) $\frac{1}{8}$ (B) $\frac{3}{6}$

(C) $\frac{5}{4}$ (D) $\frac{3}{24}$

Section C (Competency Enhancement)

Directions (Qs 34 to 37): The following double bar graph represents the production of two models of TV sets in a factory.



Observe the graph carefully and answer the following questions.

34. The duration of information given by the graph is

(A) 1 year (B) 2 years

(C) 6 months (D) 3 months

35. The ratio between the production of Model 1 and Model 2 is 4 : 5 in the month of

(A) December (B) November

(C) October (D) August

36. In which month, the difference between the production of two models of TV sets is least?

(A) November (B) September

(C) December (D) July

37. The total production of Model 2 in six months (in lakhs) is

(A) 10 (B) 11

(C) 20 (D) 25

38. The numbers 67A36 and 36B2 are divisible by 9 and 11, respectively, then which of the following is true?

(A) A = B (B) A < B

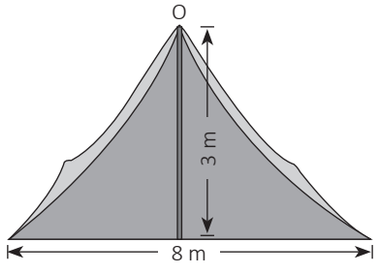
(C) A > B (D) A = 2B

39. By selling a toy for ₹1275, a shopkeeper lost 15%. To gain 10%, at what price should he sell the toy?

(A) ₹1375 (B) ₹1650

(C) ₹1825 (D) ₹1755

40. In a summer camp, Amit needs to set up a triangular tent. He has fixed two pegs in opposite directions at a distance of 8 metres apart. The height of the tent is 3 metres. Assuming the sides of the tent are straight lines, how much length of the tent material is required to reach from the height of 3 metres down to the pegs?



(A) 10 m (B) 7 m

(C) 5 m (D) 3 m

GRADE 7