MATHEMATICS
Grade 6

National Level Examination

NLE 2024

Subject Code: 2 0 1

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

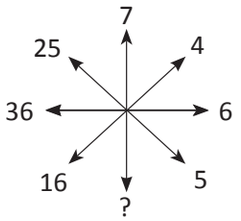
DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO

- 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.

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. Which of the following numbers will correctly replace the question mark?



(A) 7 (B) 9
(C) 27 (D) 49

2. Which number will replace the question mark, if the matrix follows a certain rule row-wise or column-wise?

4	7	5
33	78	46
8	?	9

(A) 12 (B) 13
(C) 11 (D) 10

3. In a certain language '234' means, 'Spark and Fire', '456' means 'Spark Is Cause' and '258' means 'Fire Is Effect'. Which of the following numerals is used for 'Cause'?

(A) 2 (B) 5
(C) 6 (D) 8

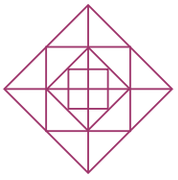
4. Raman is 7 ranks ahead of Mona in a class of 39. If Mona ranks seventeenth from the last, what is Raman's rank from the beginning?

(A) 16^{th} (B) 18^{th}
(C) 15^{th} (D) 19^{th}

5. If P denotes '×', T denotes, '–', Y denotes '+' and Z denotes '÷', then 28Z7P8T6Y4 is _____.

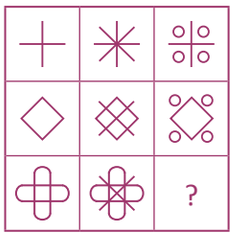
(A) 18 (B) 34
(C) 32 (D) 30

6. Count the number of squares in the figure.



(A) 10 (B) 12
(C) 14 (D) 16

7. Find out the option which completes the figure matrix.



(A) 

(B) 

(C) 

(D) 

8. On a particular line segment, four points P, Q, R and S are placed at equal distance.

   The distance from P to Q is less than the distance from Q to R, and the distance from S to R is less than the distance from Q to R.

   Also, distance from P to R is greater than the distance from Q to R.

   Which of the following, left-to-right ordering of letters could be correct?

   (A) R, P, Q, S
   (B) Q, P, S, R
   (C) P, Q, S, R
   (D) Q, S, R, P

Section B (Subject Specific)

9. Find the product of 9680 × 10 × 14 × 0 × 8.

   (A) 561232
   (B) 642976
   (C) 912112
   (D) Zero

10. The smallest 7-digit number formed by 1, 0, 3, 4, 5, 7, 9 is _____.

    (A) 13,04, 579
    (B) 10,34, 579
    (C) 01,34, 579
    (D) 13,45, 790

11. Which of the following is true for the pair of 56 and 84?

    (A) Both are prime numbers.
    (B) Both are co-prime numbers.
    (C) Both are multiples of 14.
    (D) Both are odd numbers.

12. What will be the HCF of 128, 288 and 160?

    (A) 16
    (B) 24
    (C) 32
    (D) 48

13. Find the difference between smallest 6-digit number and largest 4-digit number.

    (A) 90001
    (B) 91000
    (C) 90100
    (D) 90010

14. Which integer should be subtracted from –79 to get 50?

(A) 129 (B) –129

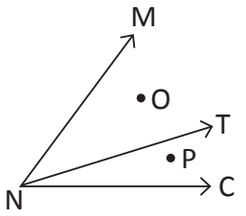
(C) –139 (D) 139

15. A hall has dimensions of 20 m × 12 m. What will be the number of square shaped tiles having 4 m of side, which can be fixed?

(A) 10 (B) 15

(C) 24 (D) 12

16. The point that lies in the interior of ∠MNT is _____.



(A) M (B) N

(C) O (D) P

17. Which of the following numbers is a perfect number?

(A) 4 (B) 6

(C) 8 (D) 12

18. What fraction of a metre is 25 cm?

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

(C) $\frac{1}{20}$ (D) $\frac{1}{4}$

19. If the HCF of two numbers is 16 and their product is 3072, then find their LCM.

(A) 12 (B) 182

(C) 192 (D) None of these

20. The smallest possible decimal fraction up to three decimal places is _____.

(A) 0.101 (B) 0.111

(C) 0.001 (D) 0.011

21. If in a proportion, the first, second and fourth terms are 32, 112 and 217 respectively, find the third term.

(A) 56 (B) 61

(C) 62 (D) 63

22. Three equivalent fractions of $\frac{2}{3}$ are _____.

(A) $\frac{2}{6}, \frac{3}{6}, \frac{4}{12}$ (B) $\frac{4}{6}, \frac{6}{9}, \frac{8}{12}$

(C) $\frac{3}{6}, \frac{7}{6}, \frac{8}{12}$ (D) $\frac{3}{6}, \frac{7}{12}, \frac{8}{24}$

23. Which of the following sets of numbers is/are in continued proportion?
(A) 16, 84, 441
(B) 36, 90, 225
(C) 48, 60, 75
(D) All of these

24 Niti's present age is x. After 7 years her age will be 21. Write the form of expression.
(A) $x + 7 = 21$
(B) $x - 7 = 21$
(C) $7 \times x = 21$
(D) $7/x = 21$

25. Around which of the following is a rhombus symmetrical?
(A) The line joining the mid-points of its opposite sides
(B) Perpendicular bisectors of each of its sides
(C) Each of its diagonals
(D) None of these

26. If a diagonal of a rectangle is thrice its smaller side, then its length and breadth are in the ratio of _____.
(A) 3 : 1
(B) √3 : 1
(C) √2 : 1
(D) 2√2 : 1

27. If the cost of fencing a rectangular field at ₹7.50 per meter is ₹600, and the length of the field is 24m, then find the breadth of the field.
(A) 8 m
(B) 16 m
(C) 18 m
(D) 24 m

28. The pictograph shows the number of TV sets sold in 4 different months. What is the total number of TV sets sold in 3 months, if  = 25 sets?

January	
February	
March	

(A) 200
(B) 100
(C) 180
(D) 190

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. One integer is greater than the other by +12. If one number is –23, then the other can be _____.
(A) 35
(B) –35
(C) –11
(D) 11

30. Which of the equations do NOT have a = 5 as the solution?
(A) $\frac{30}{a} = 6$
(B) $10 - a = 5$
(C) $15a = 45$
(D) $30 + a = 75$

31. How can the numbers 8 and 9 as a pair be categorised as?

(A) Co-prime numbers
(B) Consecutive numbers
(C) Prime numbers
(D) Both prime and consecutive numbers

32. If $\overrightarrow{BA} \perp \overrightarrow{XY}$ which of the following is INCORRECT?

(A) $\angle ABX + \angle ABY = 180°$
(B) $\angle ABX$ = 2 right angles
(C) $\angle ABY = 45°$
(D) $\angle ABY = 90°$

33.  is an example of _____.

(A) Right angled triangle
(B) Equilateral triangle
(C) Scalene triangle
(D) Isosceles triangle

Section C (Competency Enhancement)

34. Complete the table given below and find the solution of the equation, using other values of the table to calculate z/3 = ?

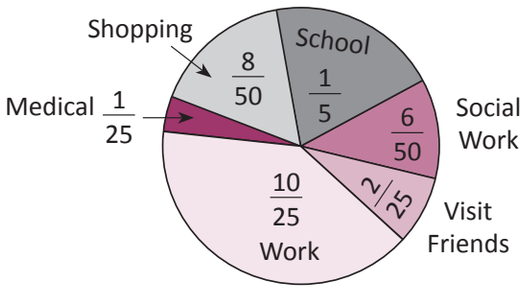
Z	1.5	3	4.5	6	7.5	9	10.5	12
z/3	1/2	1	3/2	2	5/2	3	7/2	?

(A) 4
(B) 5
(C) 9/2
(D) 11/2

35. Today, we find use of geometry almost all around us. Why do you think geometrical ideas shaped up in ancient times?

(A) Due to need in art and drawing
(B) Due to need in measurement and locational accuracy
(C) Due to need in architecture and constructions
(D) All of these

36. Mrs Khanna drove 1250 km in the month of March by her car. She drove for various works as shown in the fractional diagram.



How many more kilometres did Mrs Khanna drive for school than for shopping?

(A) 20 km
(B) 25 km
(C) 30 km
(D) 50 km

Directions (37 to 40): The following table shows the number of students in each section of class VI. Read the table and answer the following questions:

An ancient system of writing numerals is the system of Roman numerals. The seven basic symbols in Roman numeral system are:

Roman numerals	I	V	X	L	C	D	M
Hindu-Arabic numerals	1	5	10	50	100	500	1000

37. What does $\overline{VI}$ stand for?

(A) – 6 (B) –600

(C) 600 (D) 6000

38. Which of the given numbers is same as: CDXIV?

(A) 446 (B) 424

(C) 414 (D) 514

39. Which of the following is meaningless?

(A) XIV (B) XV

(C) XXV (D) XVXLC

40. Which basic Roman numeral can never be subtracted from a greater Roman numeral?

(A) I (B) V

(C) X (D) C