



ORANGE GLOBAL OLYMPIAD

MATHEMATICS

Grade 7

National Level Examination

NLE 2024

Subject Code:

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Total Questions: 40

Time: 1 hour

DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO

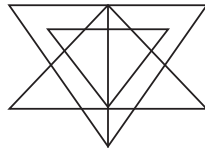
- All questions are compulsory.
- Read the instructions on the **ANSWER SHEET** and fill in your **NAME, CLASS** and **OTHER INFORMATION**.
- To mark your choice of answer by darkening the circles in the **ANSWER SHEET**, use a **BLUE/BLACK BALL PEN** only.
- You **MUST** record your answers on the **ANSWER 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. How many triangles are there in the following figure?



- (A) 25 (B) 23
(C) 21 (D) 27

2. Which of the following is the missing figure in the given pattern?



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

3. If 'L' means '÷', 'P' means '+', 'Q' means '-' and 'M' means '×', then tick the correct equation.

- (A) $11M34L17Q8L3 = -24$ (B) $6M18Q26L13P7 = -10$
(C) $9P9L9Q9M9 = -71$ (D) $32P8L16Q4M1 = -6$

4. How many such pairs of letters are there in the word CORPORATE, each of which has as many letters in the same sequence between them as in the English alphabet when read from left to right?

- (A) 2 (B) 1
(C) 3 (D) More than 3

5. A boy walks 10 metres in front and 10 metres to the right. Then every time turning to his left, he walks 5, 15 and 15 metres respectively. How far is he now from his starting point?

- (A) 50 metres (B) 35 metres
(C) 20 metres (D) 5 metres

6. Study the following numbers numbers carefully:

427 581 839 275 589

Which of the following numbers will be obtained if the second digit of the greatest number is subtracted from the second digit of the least number, after adding five to each of the above numbers?

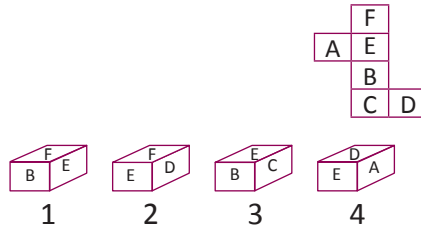
- (A) 1 (B) 2
(C) 3 (D) 4





7. If the code for 'CHAP' is 'XSZK', then for what is 'WVZU' the code?
(A) LEAP (B) MOST
(C) DEAF (D) COST
8. The sheet shown is folded to form a box. Choose the boxes from the options that are similar to the box that will be formed.

- (A) 1 only
(B) 4 only
(C) 2 and 3 both
(D) 1 and 4 both

**Section B (Subject Specific)**

9. Which of the following equations has $x = -5$ as a solution?
(A) $6x + 14 = 25$ (B) $2x + 4 = -6$
(C) $x + 7 = 11$ (D) $x + 2 = 2$
10. Which of the following statements is true?
(A) $(-8) + (-4) = 12$ (B) $15 - 8 + (-9) = 2$
(C) $23 - 41 + 11 = -3$ (D) $39 + (-24) - (15) = 0$
11. Which of the following Expressions has its degree as 5?
(A) $x^5 3x + 9$ (B) $x^3 y^2 z + 7xyz + 8$
(C) $9x^5 + 6x - 3$ (D) $12x^4 + x^3 + x$
12. Multiplicative inverse of a proper fraction is/an _____ fraction.
(A) equivalent (B) like
(C) proper (D) improper
13. If a is a rational number, m and n are natural numbers, then _____
(A) $a^1 = 0$ (B) $(a^m)^n = a^{m+n}$
(C) $a^m \div a^n = a^{m-n}$, $m > n$ (D) $a^m \div a^m = \left(\frac{a}{b}\right)^m$
14. The height of 5 Girls is given as follows:
145 cm, 148 cm, 151 cm, 154 cm and 157 cm.
Find the number of Girls having height more than the mean height.
(A) 1 girl (B) 2 girls
(C) 3 girls (D) None of these





15. What should be subtracted from the sum of $\frac{13}{4}$ and $\frac{-33}{8}$ so as to get $\frac{7}{8}$?

- (A) $\frac{-4}{9}$ (B) $\frac{-5}{3}$
 (C) $\frac{-3}{4}$ (D) $\frac{-7}{4}$

16. If 8 is subtracted from twice a number, the answer is 56. What is the number?

- (A) 48 (B) 56
 (C) 44 (D) 32

17. Find the number from of the following expanded forms:

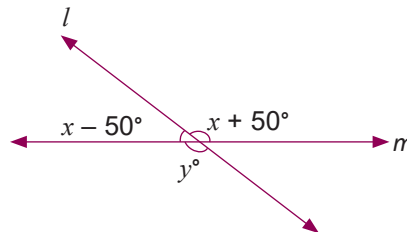
$$9 \times 10^4 + 6 \times 10^3 + 5 \times 10^2 + 7 \times 10$$

- (A) 9657 (B) 96570
 (C) 906570 (D) 960570

18. Find the number of bricks to be laid on a square footpath of side 18 m, if the length and breadth of each brick are 5 cm and 3 cm respectively.

- (A) 2,44,000 (B) 1,83,000
 (C) 2,16,000 (D) 1,26,000

19. If l and m are intersecting lines in the given figure, then value of y is _____.



- (A) 40° (B) 140°
 (C) 110° (D) 150°

20. If the value of $2x^3 - 2x^2 + 4ax - a$ equals to 64; where $x = 2$, then the value of 'a' is _____.

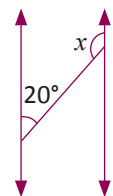
- (A) 4 (B) 6
 (C) 7 (D) 8

21. Which of the following pairs represents the same rational number?

- (A) $-2/3$ and $4/9$ (B) $-1/-2$ and $-3/-2$
 (C) $5/4$ and $25/20$ (D) $6/12$ and $-1/2$

22. Lines l and m shown in the figure alongside are parallel. Find the value of x° .

- (A) 160° (B) 120°
 (C) 146° (D) 154°





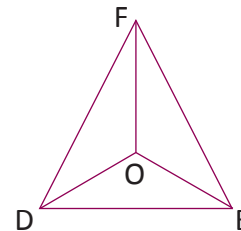
23. The normal body temperature is 98.6° . One day, Ruhi fell ill and her body temperature rose to 101.5° F. By how many degrees did her body temperature rise above the normal range?

- (A) 4.1° F (B) 3.9° F
(C) 2.9° F (D) 2.1° F

24. In the given figure, O is any point in the interior of triangle DEF.

Which of the following statements is true about the triangle DEF?

- (A) $OD + OE < DE$ (B) $OD + OF > DF$
(C) $OE + OF < EF$ (D) $OD + OF = DF$



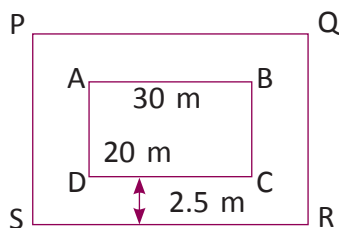
25. If triangle ABC is congruent to triangle DEF, $\angle A = 45^\circ$ and $\angle B = 70^\circ$, then $\angle F =$ _____.

- (A) 45° (B) 55°
(C) 65° (D) 70°

26. Which of the following statements is false?

- (A) A triangle cannot be constructed with two right angles.
(B) The perpendiculars drawn on the same line are parallel.
(C) Construction of a triangle is not possible with the sides 6 cm, 4.5 cm and 1.5 cm.
(D) None of these

27. A rectangular garden is 30m long and 20m wide. A path 2.5m wide is constructed outside the garden, find the area of the path.



- (A) 729 m^2 (B) 428 m^2
(C) 275 m^2 (D) 875 m^2

28. Sunnet takes 5 hours to complete a project and Puneet takes 6 hours to complete the same project. If they work together, how long will they take to complete the project?

- (A) $19/6$ hours (B) $21/6$ hours
(C) $26/7$ hour (D) $30/11$ hours

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. Two pair of integers (a, b), such that $a \div b = -3$ are _____ and _____.

- (A) $-18, -6$ (B) $-12, 4$
(C) $9, 3$ (D) $6, -2$





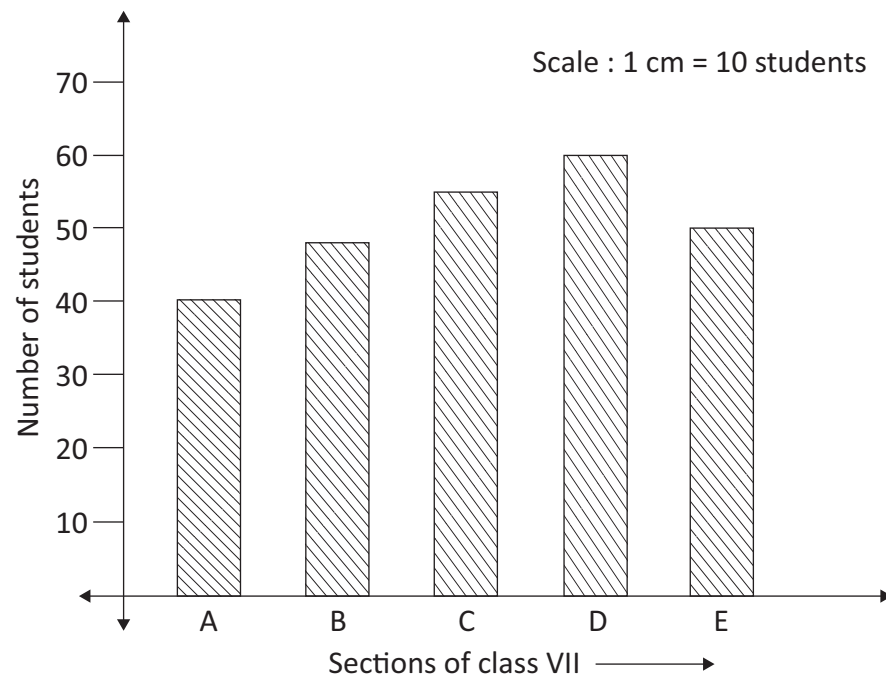
30. Which of the following two statements are true?
 (A) Each face of cube is square in shape
 (B) Cylinders have 4 edges
 (C) A sphere has one edge
 (D) A cone has one vertex
31. When each of following is simplified, two of them give same result. Identify them.
 (A) $7^0 \times 4^0 \times 9^0$ (B) $(3^0 + 2^0) \times 3^0$
 (C) $(8^0 - 5^0) \div 2^0$ (D) $(7^0 \times 6^0) \times 9^0$
32. Which two letters show reflection symmetry about vertical mirror?
 (A) D (B) A
 (C) T (D) B
33. The shapes which can hold space in them are known as _____ or _____.
 (A) plane shapes (B) 2D shapes
 (C) solid shapes (D) 3D shapes

Section C (Competency Enhancement)

34. Shivam's father is 7 years older than four times the age of Shivam. Shivam's father is 55 years old. Set up an equation to find Shivam's age.
 (A) $4m + 7 = 55$ (B) $4m - 7 = 55$
 (C) $4m + 55 = 7$ (D) $4m - 55 = 7$
35. A shopkeeper earns a profit of ₹10 by selling one pencil box and incurs a loss of ₹5 per notebook while selling notebooks of his old stock. In a particular month, he incurs a loss of ₹50. In this period, he sold 45 pencil boxes. How many notebooks did he sell in the given period?
 (A) 80 (B) 90
 (C) 100 (D) 125
36. The amount of petrol in a tank is twice of that in another tank. If we draw out 25 litres from first and add it to the other, the amount of petrol in both the tanks will be the same. The amount of petrol in each tank now is _____.
 (A) 25 litres (B) 50 litres
 (C) 75 litres (D) 85 litres



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



37. How many students are there in section B?
(A) 32 (B) 48
(C) 58 (D) 64
38. In which section is the number of students 50?
(A) B (B) C
(C) D (D) E
39. In which section are there maximum number of students?
(A) A (B) C
(C) D (D) E
40. How many students are there in the class VII?
(A) 241 students (B) 253 students
(C) 221 students (D) 190 students



