Reasoning & Aptitude

Grade 8

National Level Examination

NLE 2025

Subject Code: 7 | 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.

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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. Select the correct mirror image of Figure (X).

GHOST
(X)

(A) GHOST (reversed)

(B) GHOST (reversed)

(C) GHOST (reversed)

(D) GHOST (reversed)

2. Find the value of N.

	40	
45	5 | 8	88
	9 | 11	
	N	

(A) 72

(B) 81

(C) 90

(D) 99

3. Each alphabet represents a distinct digit, and the leftmost digit in each number cannot be zero. Find the value of P + O.

```
    P  I  N  G
+   C  O  R  I
_____
C   O  N  I  Z
```

(A) 7

(B) 9

(C) 10

(D) 12

4. In a row of letters, a letter is 5th from the left end and 12th from the right end. How many letters are there in the row?

(A) 15

(B) 16

(C) 17

(D) 18

5. Find the missing number.

Five		Ten		Four		Eight		Three		Nine		One		Seven
	7				9				9				?	

(A) 6

(B) 8

(C) 9

(D) 10

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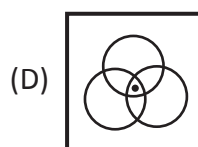
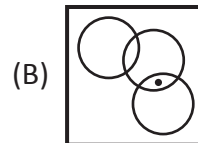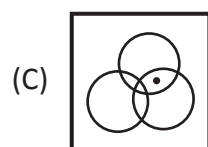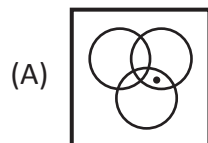6. Find the missing number in the given sequence.

    227, 216, 207, 198, __

    (A) 170   (B) 177

    (C) 180   (D) 189

7. Find the odd one out.

    (A)   (B)

    (C)   (D)

8. A number arrangement machine when given an input of the numbers, rearranges them following a particular logic/rule in each step.

    INPUT: 10, 25, 7, 78, 56, 39

    STEP 1: 1, 7, 7, 15, 11, 12

    STEP 2: 1, 49, 49, 225, 121, 144

    STEP 3: 1, 13, 13, 9, 4, 9

    STEP 4: 1, 4, 4, 9, 4, 9

    Here, the 4th step is the last step(Output) for the given input.

    What will be the output if the input is: 5, 9, 13, 17, 20?

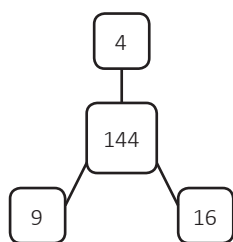   (A) 7, 9, 7, 1, 4   (B) 7, 2, 6, 2, 5

    (C) 6, 2, 7, 1, 4   (D) 6, 4, 6, 2, 5

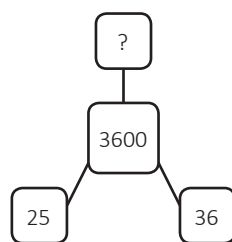9. Observe the pattern and find the sum of its next two terms.

    65, 24, 217, 48, 513, ___, __

    (A) 694   (B) 897

    (C) 1081   (D) 1149
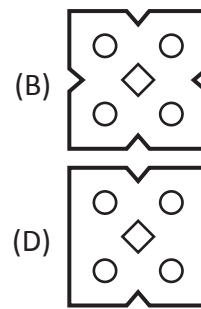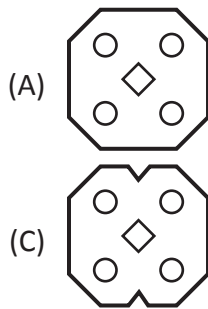
10. Identify the pattern and find the missing number.
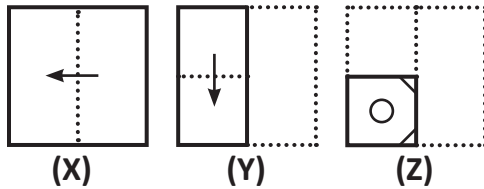

    (A) 49   (B) 64

    (C) 16   (D) 81

11. A sheet of paper is folded and punched as shown in figures X, Y, and Z. Select the option that correctly shows the pattern when the sheet is unfolded.
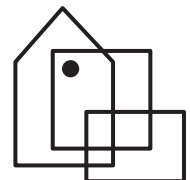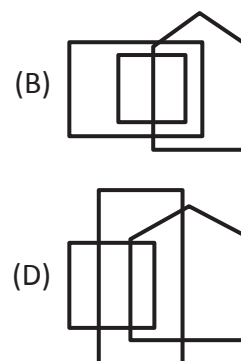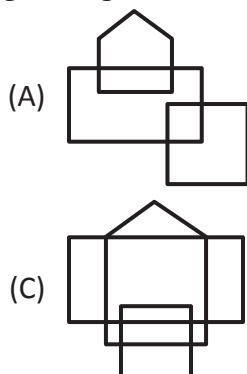

(X)   (Y)   (Z)

(A)   (B)

(C)   (D)

12. If 'cup' means 'book', 'book' means 'pen', 'pen' means 'table', and 'table' means 'paper', then which of the following is used to write with?

(A) Cup   (B) Book

(C) Pen   (D) Table

13. If 2 is subtracted from each even digit and 1 is added to each odd digit in the number 78654394, how many digits will appear twice or more than twice in the new number thus formed?

(A) 1   (B) 2

(C) 3   (D) 4

14. Select the option that provides the same conditions where the dot can be placed in the given figure.
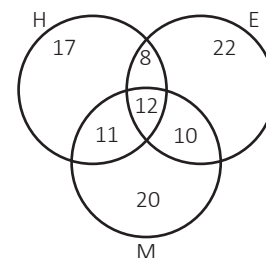

(A)   (B)

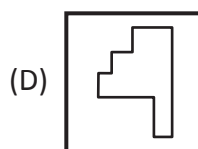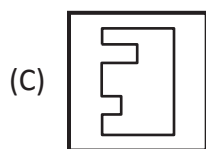(C)   (D)

15. Find the missing number.

12	24	65	72
31	62	111	?

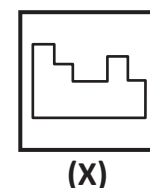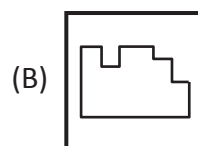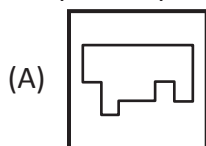(A) 54   (B) 65

(C) 86   (D) 95

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16. A result of a survey of 100 persons who speak Hindi (H), English (E) and Malayalam (M) is given in the Venn diagram. Observe the Venn diagram given alongside and find how many persons speak exactly one language.

(A) 12   (B) 17

(C) 20   (D) 59

17. A figure X is given. Select a figure from the options that combine with figure X to form a complete square.

(X)

(A)   (B)

(C)   (D)

18. If all the symbols are removed from the following sequence, then which element will be the middle element of the resulting sequence ?

    K @ + N S R E M J 3 Z % 5 X Y 1 # E 9 T 7

(A) 3   (B) Z

(C) 5   (D) J

19. If SUNDAY is coded as HFMWZB, then the code for MISUNDERSTAND will be:

(A) NJTVOEFSTUBOE   (B) LHRTMCDQRSZMC

(C) NHTTOCFQTSBME   (D) NRHFMWVIHGZMW

20. A watch shows 6 pm when the hour hand points east. In which direction is the minute hand facing when the time is 9:15 pm?

(A) East   (B) South

(C) West   (D) North

21. Amit is seventh from right hand and Jatin is eleventh from left in a line of children. If Jatin shifts four places towards Amit, he becomes tenth from right. How many children are there in the row

(A) 20   (B) 24

(C) 23   (D) 25

22. Find the missing value.

(A) 2168

(B) 6552

(C) 502

(D) 992

3	2	1	=	8
4	3	4	=	60
5	4	7	=	618
10	2	4	=	96
8	3	10	=	?

23. A man starts his journey from home. He goes 5 km to the North, then proceeds 35 km to the right. From there, he again turns right and goes 17 km. How far is he from home?
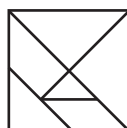
   (A) 35 km   (B) 36 km

   (C) 37 km   (D) 40 km

24. Each alphabet represents a distinct digit, and the leftmost digit in each number cannot be zero. If P = 5, then find the value of E.

$$
\begin{array}{ccccccc}
 & P & M & N & H & A & P \\
+ & G & E & S & H & A & P \\
\hline
 & S & M & B & E & S & T \\
\end{array}
$$

   (A) 0   (B) 3

   (C) 8   (D) 9

25. Count the number of triangles in the given figure.

   (A) 4   (B) 5

   (C) 6   (D) 7

26. If 2 + 3 = 5, 3 + 7 = 17, 6 + 7 = 41, 5 + 8 = 37, then (4 + 5) is

   (A) 17   (B) 19

   (C) 21   (D) 25

Section B (Quantitative Aptitude)

27. The natural numbers from 1 to 821 are written sequentially (1, 2, 3, 4, ..., 821). Numbers at odd positions are then removed, forming a new series (2, 4, 6, 8, ..., 820). This process of removing numbers at odd positions is repeated, forming successive new series until only a single number remains. Determine the final number left.

   (A) 500   (B) 512

   (C) 556   (D) 596

28. In a class 60% of students passed in mathematics and 72% passed in Science.

   P = Percentage of the students who passed in only one subject.

   Q = Percentage of the students who failed in only one subject.

   If 14% of students passed in both subjects, then

   (A) P > Q

   (B) P < Q

   (C) P = Q

   (D) The relationship between P and Q cannot be established.

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\ 27-Jan-2025   Bharat Arora   **Proof-3**   Reader's Sign _____   Date _____

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29. A solid cube of size 4 inches is cut into smaller cubes of half-inch, 1-inch, and 2-inch dimensions. If the number of 1-inch and 2-inch cubes are multiples of 7, what will be the total number of smaller cubes of all sizes together?

(A) 21
(B) 8
(C) 20
(D) 22

30. In which order from the given options the symbols should be placed in blank spaces to complete the expression in such a manner that makes the expressions 'B > N' and 'U > D' definitely false?

B ___ O ____ U ____ N _____ D

(A) <, <, >, =
(B) <, =, =, >
(C) <, =, =, <
(D) <, <, <, >

31. If ADD and DDA both are squares of 2-digit numbers then find the value of (A + D + D).

(A) 8
(B) 9
(C) 12
(D) 13

32. Find the value of X.

53	(3)	59
92	(4)	98
33	(2)	36
71	(X)	79

(A) 3
(B) 5
(C) 7
(D) 9

33. Kriyansh has N coins with him such that, N is a square number between 400 and 500. When N is multiplied by any 10 consecutive natural numbers then unit digit of the product is different in all the 10 products. Find the sum of digits of N.

(A) 20
(B) 16
(C) 9
(D) 12

Section C (Competency Enhancement)

34. X = 1 + 2 + 3 + … + 81

Y = 1 + 5 + 3 + 4 + … + 81 (Y is formed by replacing all 2s in X by 5)

Find Y − X.

(A) 321
(B) 324
(C) 327
(D) 330

35. Introducing Mansi to a friend, Samir said, "Her father is the only son of my father". How is Mansi related to Samir?

(A) Mother
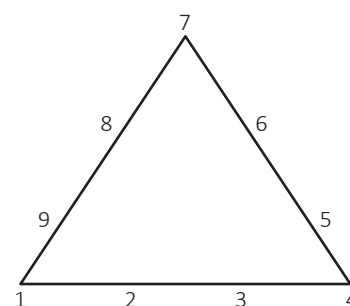(B) Daughter
(C) Niece
(D) Granddaughter

36. Along each side of the triangle, there are 4 numbers. You are supposed to rearrange these numbers such that the sum of 4 numbers along each side should be the same say *n*.

    Note: In the given triangle 1, 4, and 7 are called corner elements.

    When *n* = 17, then find the sum of the corner elements.

    (A) 4   (B) 6

    (C) 7   (D) 3

37. Find the sum of the digits of the 3-digit code.

1	9	4	One number is correct and well placed.
0	1	8	2 numbers are correct but wrong placed.
4	6	3	1 number is correct and well placed.
3	9	8	One number is correct but wrong placed.

    (A) 4   (B) 8

    (C) 10   (D) 13

38. Two friends play a game. Initially, there are *x* chocolates kept on a table. A move in the game consists of a player eating 1, 2, 3, or 4 chocolates from the table. The one who eats the last chocolate loses. Players make moves alternately. The player who will make the first move is A. The other player is B. The smallest value of *x* (greater than 50) that ensures a win for B is

    (A) 51   (B) 52

    (C) 53   (D) 54

39. In a knockout tournament 70 teams participate. Find the total number of matches to be played in order to find the winner.

    (A) 64   (B) 69

    (C) 139   (D) 105

40. At a welcome party, students were asked to guess the number of marbles in a jar. No one guessed correctly, but the nearest guesses were 1071, 1077, 1086, and 1090. The correct number of marbles was one unit away from one of the closest guesses, three units away from another, ten units away from the third, and sixteen units away from the remaining closest guess. How many marbles were there in the jar?

    (A) 1085   (B) 1087

    (C) 1091   (D) 1093