NON-VERBAL REASONING - ANALOGY(ENGLISH)

Q1: A series of shapes is given below. Study the pattern and choose the shape that should come next in the sequence:
Long Method: To solve this analogy, we need to analyze the pattern in the given sequence of shapes. Upon careful observation, we can see that each shape in the sequence is rotating clockwise by 90 degrees and changing color alternately. The first shape is a black circle, the second shape is a red square, the third shape is a blue triangle, and the fourth shape is a green pentagon. So, following this pattern, the next shape should be a black hexagon.

Short Method: The pattern involves a clockwise rotation of shapes by 90 degrees and alternating colors. Hence, the next shape in the sequence is a black hexagon.

Q2: Choose the pair that best completes the analogy: Sun: Heat :: Refrigerator: _____
Long Method: In this analogy, we need to determine the relationship between "Sun" and "Heat" and find a similar relationship in the given options. The sun emits heat, so the relationship is that the sun produces heat. Similarly, a refrigerator produces coldness or cools. Therefore, the correct pair is Refrigerator: Cold.

Short Method: The analogy here is that the Sun produces heat, just as a Refrigerator produces coldness. Hence, the answer is Refrigerator: Cold.

Q3: If 3 × 4 = 11, 4 × 5 = 19, and 5 × 6 = 29, then 6 × 7 = ?
Long Method: To solve this analogy, we need to determine the pattern in the given equations. Looking at the equations, we notice that the result is always one less than the product of the two numbers multiplied together. For example, in the first equation 3 × 4, the result is 11, which is one less than 12 (3 × 4). Similarly, in the second equation 4 × 5, the result is 19, which is one less than 20 (4 × 5). Applying this pattern to the third equation, 5 × 6 equals 30, and subtracting 1 gives 29. Therefore, for 6 × 7, the result would be one less than 42, which is 41.

Short Method: The pattern observed is that the result of each multiplication is one less than the product of the two numbers. Applying this to 6 × 7, the result would be one less than 42, which is 41.

Q4: In a series of letters, the pattern is as follows: AB, EJ, IO, MT, ____
Long Method: To find the next term in this letter series, we need to analyze the pattern. In the given series, each subsequent term is formed by taking the first letter of the alphabet and then skipping a certain number of letters before selecting the next letter. In the first term, AB, we start with A and skip one letter to get B. In the second term, EJ, we start with E and skip two letters to get J. Similarly, in the

third term, IO, we start with I and skip three letters to get O. Following this pattern, in the fourth term, we start with M and skip four letters to get T. So, applying this pattern, the next term would start with Q and skip five letters to get the next letter, which is Y. Therefore, the next term is QY.

Short Method: The pattern involves starting with a letter and then skipping a certain number of letters to get the next letter. Applying this to the series, the next term starts with Q and skips five letters to get Y. Hence, the answer is QY.

Q5: Find the missing number in the series:
9, 16, 23, 30, __, 44
Long Method: To find the missing number in this series, we need to identify the pattern. Upon careful observation, we can see that each number in the series is increasing by 7. Starting from 9, each subsequent number is obtained by adding 7 to the previous number. So, following this pattern, the missing number is 37.

Short Method: The pattern here is that each number in the series increases by 7. Hence, the missing number is obtained by adding 7 to the previous number, resulting in 37.

Q6: If the first two statements are true, is the last statement true as well?

1. All cats are mammals.
2. Some mammals are black.

Long Method: To determine if the last statement is true based on the given statements, we need to evaluate the logical relationship between them. The first statement implies that all cats are mammals, which means any cat falls under the category of mammals. The second statement suggests that there are some mammals that are black, which is a broad category including cats as stated in the first statement. Therefore, based on the given statements, it is logically consistent to say that "Some cats are black," making the last statement true.

Short Method: The logical inference from the given statements is that since all cats are mammals and some mammals are black, it follows that some cats are black as well. Hence, the last statement is true.

Q7: Which figure completes the sequence?
Long Method: To determine the figure that completes the sequence, we need to analyze the pattern. Upon observation, we can see that each figure consists of a square and two circles. The position of the circles alternates in each figure, starting from the top left corner in the first figure, then moving to the bottom right corner in the second figure, and so on. Additionally, the size of the square decreases by one unit in each figure. So, following this pattern, the missing figure should have a square with one circle at

the top right corner and another circle at the bottom left corner, with a size smaller than the previous squares. Therefore, the correct figure is option C.

Short Method: The pattern involves alternating positions of two circles around a decreasing square size. Hence, the figure completing the sequence should have a smaller square with circles at the top right and bottom left corners, matching option C.

Q8: If 5 + 3 = 28, 9 + 1 = 810, and 8 + 6 = 214, then 7 + 5 = ?
Long Method: To solve this analogy, we need to decipher the pattern in the given equations. It appears that the result of each equation is obtained by concatenating the numbers together in a specific order. In the first equation, 5 + 3 becomes 53 when concatenated. In the second equation, 9 + 1 becomes 91. Similarly, in the third equation, 8 + 6 becomes 86. So, applying this pattern, 7 + 5 would become 75.

Short Method: The pattern observed is that the result is obtained by concatenating the numbers together in the order they appear. Hence, 7 + 5 becomes 75.

Q9: Choose the pair that best completes the analogy: Water: Wet :: Sand: _____
Long Method: In this analogy, we need to determine the relationship between "Water" and "Wet" and find a similar relationship in the given options. Water is inherently wet, so the relationship is that water is characterized by being wet. Similarly, sand is characterized by being dry. Therefore, the correct pair is Sand: Dry.

Short Method: The analogy here is that water is inherently wet, just as sand is inherently dry. Hence, the answer is Sand: Dry.

Q10: If A = 1, B = 2, C = 3, ..., Z = 26, then CAT = ?
Long Method: To find the numerical value of the word "CAT" using the given numerical values for each letter of the alphabet, we need to add up the values of each letter. C = 3, A = 1, and T = 20. Adding these values together, we get 3 + 1 + 20 = 24. Therefore, the numerical value of "CAT" is 24.

Short Method: By assigning numerical values to each letter of the alphabet, the sum of the values of the letters in the word "CAT" is 24. Hence, CAT = 24.

Q11: Which of the following figures does not belong in the series?
Long Method: To identify the figure that does not belong in the series, we need to analyze the pattern in the given sequence of figures. Upon observation, we notice that each figure is formed by combining two smaller figures to create a larger figure. In each case, one of the smaller figures is rotated or mirrored

before being combined with the other figure. However, in option D, the smaller figures are not combined in the same manner as in the other options. Therefore, option D does not belong in the series.

Short Method: By analyzing the pattern of combining smaller figures to create larger ones, we can see that option D does not follow the same combination method as the other figures. Hence, option D does not belong in the series.

Q12: If 12 + 3 = 4, 18 + 4 = 8, and 24 + 5 = 12, then 30 + 6 = ?
Long Method: To solve this analogy, we need to decipher the pattern in the given equations. It appears that the result of each equation is obtained by adding the second number to the half of the first number. In the first equation, 12 + 3 equals 15, and half of 12 is 6, so 15 - 6 = 9, which reduces to 4. Similarly, in the second equation, 18 + 4 equals 22, and half of 18 is 9, so 22 - 9 = 13, which reduces to 8. Applying this pattern to the third equation, 24 + 5 equals 29, and half of 24 is 12, so 29 - 12 = 17, which reduces to 12. Therefore, for 30 + 6, the result would be 24.

Short Method: The pattern observed is that the result is obtained by subtracting half of the first number from the sum of the two numbers. Hence, for 30 + 6, the result is obtained by subtracting 15 from 36, resulting in 21.

Q13: Choose the pair that best completes the analogy: Book: Pages :: Bicycle: _____
Long Method: In this analogy, we need to determine the relationship between "Book" and "Pages" and find a similar relationship in the given options. A book consists of pages, which are the fundamental units making up a book. Similarly, a bicycle consists of wheels, which are the fundamental components making up a bicycle. Therefore, the correct pair is Bicycle: Wheels.

Short Method: The analogy here is that a book is composed of pages, just as a bicycle is composed of wheels. Hence, the answer is Bicycle: Wheels.

Q14: Find the missing number in the series:
5, 11, 23, 47, __, 191
Long Method: To find the missing number in this series, we need to identify the pattern. Upon careful observation, we can see that each number in the series is obtained by doubling the previous number and then adding 1. Starting from 5, the next number would be (5 × 2) + 1 = 11, then (11 × 2) + 1 = 23, and so on. So, following this pattern, the missing number is obtained by doubling 47 and adding 1, resulting in 95.

Short Method: The pattern here is that each number in the series is obtained by doubling the previous

number and adding 1. Hence, the missing number is obtained by doubling 47 and adding 1, resulting in 95.

Q15: Which figure completes the sequence?

Long Method: To determine the figure that completes the sequence, we need to analyze the pattern. Upon observation, we can see that each figure consists of a rectangle and a triangle. The position of the triangle alternates in each figure, moving from the top to the bottom and then back to the top. Additionally, the size of the rectangle increases by one unit in each figure. So, following this pattern, the missing figure should have a rectangle with a triangle at the bottom, with a larger rectangle size. Therefore, the correct figure is option C.

Short Method: The pattern involves alternating positions of a triangle in relation to a rectangle, with the size of the rectangle increasing in each figure. Hence, the figure completing the sequence should have a larger rectangle with a triangle at the bottom, matching option C.

Q16: If 2 + 3 = 10, 5 + 2 = 12, and 7 + 4 = 22, then 3 + 5 = ?

Long Method: To solve this analogy, we need to decipher the pattern in the given equations. It appears that the result of each equation is obtained by squaring the first number and adding the product of the two numbers. In the first equation, (2^2) + (2 × 3) equals 10. Similarly, in the second equation, (5^2) + (5 × 2) equals 12. Applying this pattern to the third equation, (7^2) + (7 × 4) equals 22. Therefore, for 3 + 5, the result would be (3^2) + (3 × 5) equals 24.

Short Method: The pattern observed is that the result is obtained by squaring the first number and adding the product of the two numbers. Hence, for 3 + 5, the result is obtained by (3^2) + (3 × 5), resulting in 24.

Q17: In a series of shapes, the pattern is as follows: Triangle, Circle, Square, Triangle, Circle, Square. What shape comes next?

Long Method: To determine the next shape in this series, we need to analyze the pattern. It appears that the series alternates between three shapes: Triangle, Circle, and Square. Following this pattern, the next shape after Square would be a Triangle. Therefore, the next shape is a Triangle.

Short Method: The pattern observed is that the series alternates between a Triangle, Circle, and Square. Hence, the next shape after Square is a Triangle.

Q18: If 3 × 4 = 11, 4 × 5 = 19, and 5 × 6 = 29, then 6 × 7 = ?

Long Method: To solve this analogy, we need to determine the pattern in the given equations. Looking at the equations, we notice that the result is always one less than the product of the two numbers

multiplied together. For example, in the first equation 3 × 4, the result is 11, which is one less than 12 (3 × 4). Similarly, in the second equation 4 × 5, the result is 19, which is one less than 20 (4 × 5). Applying this pattern to the third equation, 5 × 6 equals 30, and subtracting 1 gives 29. Therefore, for 6 × 7, the result would be one less than 42, which is 41.

Short Method: The pattern observed is that the result of each multiplication is one less than the product of the two numbers. Hence, for 6 × 7, the result would be one less than 42, which is 41.

Q19: Choose the pair that best completes the analogy: Rain: Umbrella :: Sun: _____
Long Method: In this analogy, we need to determine the relationship between "Rain" and "Umbrella" and find a similar relationship in the given options. An umbrella is used to protect against rain, so the relationship is that an umbrella is used in response to rain. Similarly, sunglasses are used to protect against the sun. Therefore, the correct pair is Sun: Sunglasses.

Short Method: The analogy here is that an umbrella is used to protect against rain, just as sunglasses are used to protect against the sun. Hence, the answer is Sun: Sunglasses.

Q20: Find the missing number in the series:
8, 12, 18, 26, __, 42
Long Method: To find the missing number in this series, we need to identify the pattern. Upon careful observation, we can see that each number in the series is obtained by adding a consecutive odd number to the previous number. Starting from 8, the next number would be 8 + 4 = 12, then 12 + 6 = 18, and so on. So, following this pattern, the missing number is obtained by adding 8 to 26, resulting in 34.

Short Method: The pattern here is that each number in the series is obtained by adding a consecutive odd number to the previous number. Hence, the missing number is obtained by adding 8 to 26, resulting in 34.

Q21: Which figure completes the sequence?
Long Method: To determine the figure that completes the sequence, we need to analyze the pattern. Upon observation, we can see that each figure consists of two triangles and a circle. The position of the circle alternates in each figure, moving from the top to the bottom and then back to the top. Additionally, the orientation of the triangles alternates, with one pointing up and the other pointing down. So, following this pattern, the missing figure should have a circle at the bottom with two triangles, one pointing up and the other pointing down. Therefore, the correct figure is option A.

Short Method: The pattern involves alternating positions of a circle and triangles, with the orientation

of the triangles also alternating. Hence, the figure completing the sequence should have a circle at the bottom with two triangles, one pointing up and the other pointing down, matching option A.

Q22: If 16 + 5 = 22, 9 + 4 = 13, and 25 + 6 = 39, then 36 + 7 = ?
Long Method: To solve this analogy, we need to decipher the pattern in the given equations. It appears that the result of each equation is obtained by multiplying the first number by the second number and then adding the square of the second number. In the first equation, (16 × 5) + (5^2) equals 22. Similarly, in the second equation, (9 × 4) + (4^2) equals 13. Applying this pattern to the third equation, (25 × 6) + (6^2) equals 39. Therefore, for 36 + 7, the result would be (36 × 7) + (7^2) equals 295.

Short Method: The pattern observed is that the result is obtained by multiplying the first number by the second number and adding the square of the second number. Hence, for 36 + 7, the result would be (36 × 7) + (7^2), resulting in 295.

Q23: Choose the pair that best completes the analogy: Pen: Ink :: Car: _____
Long Method: In this analogy, we need to determine the relationship between "Pen" and "Ink" and find a similar relationship in the given options. A pen requires ink to write, so the relationship is that ink is the essential component used by a pen. Similarly, a car requires fuel to operate. Therefore, the correct pair is Car: Fuel.

Short Method: The analogy here is that a pen requires ink to write, just as a car requires fuel to operate. Hence, the answer is Car: Fuel.

Q24: Find the missing number in the series:
6, 15, 35, 77, __, 287
Long Method: To find the missing number in this series, we need to identify the pattern. Upon careful observation, we can see that each number in the series is obtained by doubling the previous number and adding the next odd number. Starting from 6, the next number would be (6 × 2) + 3 = 15, then (15 × 2) + 5 = 35, and so on. So, following this pattern, the missing number is obtained by (77 × 2) + 9 = 163.

Short Method: The pattern here is that each number in the series is obtained by doubling the previous number and adding the next odd number. Hence, the missing number is obtained by (77 × 2) + 9 = 163.

Q25: Which figure completes the sequence?
Long Method: To determine the figure that completes the sequence, we need to analyze the pattern. Upon observation, we can see that each figure consists of a circle and two squares. The position of the squares alternates in each figure, moving from the top to the bottom and then back to the top. Additionally, the size of the circle increases in each figure. So, following this pattern, the missing figure

should have a larger circle with two squares, one above the circle and one below it. Therefore, the correct figure is option C.

Short Method: The pattern involves alternating positions of squares in relation to a growing circle. Hence, the figure completing the sequence should have a larger circle with two squares, one above and one below, matching option C.

Q26: If 3 + 8 = 11, 4 + 9 = 20, and 6 + 7 = 30, then 5 + 10 = ?
Long Method: To solve this analogy, we need to decipher the pattern in the given equations. It appears that the result of each equation is obtained by multiplying the first number by the second number and then adding the sum of the two numbers. In the first equation, (3 × 8) + (3 + 8) equals 11. Similarly, in the second equation, (4 × 9) + (4 + 9) equals 20. Applying this pattern to the third equation, (6 × 7) + (6 + 7) equals 30. Therefore, for 5 + 10, the result would be (5 × 10) + (5 + 10) equals 65.

Short Method: The pattern observed is that the result is obtained by multiplying the first number by the second number and adding the sum of the two numbers. Hence, for 5 + 10, the result would be (5 × 10) + (5 + 10), resulting in 65.

Q27: Choose the pair that best completes the analogy: Tree: Leaves :: Flower: _____
Long Method: In this analogy, we need to determine the relationship between "Tree" and "Leaves" and find a similar relationship in the given options. Leaves are part of a tree and are often associated with it, so the relationship is that leaves are components of a tree. Similarly, petals are part of a flower and are integral to its structure. Therefore, the correct pair is Flower: Petals.

Short Method: The analogy here is that leaves are part of a tree, just as petals are part of a flower. Hence, the answer is Flower: Petals.

Q28: Find the missing number in the series:
10, 15, 23, 36, __, 77
Long Method: To find the missing number in this series, we need to identify the pattern. Upon careful observation, we can see that each number in the series is obtained by adding the previous number with the position of that number in the series. Starting from 10, the next number would be 15 + 2 = 17, then 17 + 3 = 20, and so on. So, following this pattern, the missing number is obtained by 36 + 5 = 41.

Short Method: The pattern here is that each number in the series is obtained by adding the previous number with the position of that number in the series. Hence, the missing number is obtained by 36 + 5 = 41.

Q29: Which figure completes the sequence?

Long Method: To determine the figure that completes the sequence, we need to analyze the pattern. Upon observation, we can see that each figure consists of a square and four triangles. The position of the triangles alternates in each figure, moving from the top-left corner to the bottom-right corner and then back to the top-left corner. Additionally, the size of the square increases in each figure. So, following this pattern, the missing figure should have a larger square with four triangles, one in each corner. Therefore, the correct figure is option C.

Short Method: The pattern involves alternating positions oftriangles in relation to a growing square. Hence, the figure completing the sequence should have a larger square with four triangles, one in each corner, matching option C.

Q30: If 2 + 4 = 6, 3 + 6 = 9, and 4 + 8 = 12, then 5 + 10 = ?

Long Method: To solve this analogy, we need to decipher the pattern in the given equations. It appears that the result of each equation is obtained by doubling the second number and adding it to the first number. In the first equation, 2 + (2 × 4) equals 6. Similarly, in the second equation, 3 + (2 × 6) equals 9. Applying this pattern to the third equation, 4 + (2 × 8) equals 12. Therefore, for 5 + 10, the result would be 5 + (2 × 10) equals 25.

Short Method: The pattern observed is that the result is obtained by doubling the second number and adding it to the first number. Hence, for 5 + 10, the result would be 5 + (2 × 10), resulting in 25.

Q31: Choose the pair that best completes the analogy: Bird: Nest :: Spider: _____

Long Method: In this analogy, we need to determine the relationship between "Bird" and "Nest" and find a similar relationship in the given options. Birds build nests to lay eggs and raise their young, so the relationship is that nests are constructed by birds. Similarly, spiders create webs for shelter and catching prey. Therefore, the correct pair is Spider: Web.

Short Method: The analogy here is that nests are constructed by birds, just as webs are created by spiders. Hence, the answer is Spider: Web.

Q32: Find the missing number in the series:

3, 8, 18, 38, __, 98

Long Method: To find the missing number in this series, we need to identify the pattern. Upon careful observation, we can see that each number in the series is obtained by doubling the previous number and adding 2. Starting from 3, the next number would be (3 × 2) + 2 = 8, then (8 × 2) + 2 = 18, and so on. So, following this pattern, the missing number is obtained by (38 × 2) + 2 = 78.

Short Method: The pattern here is that each number in the series is obtained by doubling the previous number and adding 2. Hence, the missing number is obtained by (38 × 2) + 2 = 78.

Q33: Which figure completes the sequence?
Long Method: To determine the figure that completes the sequence, we need to analyze the pattern. Upon observation, we can see that each figure consists of a circle and three squares. The position of the squares alternates in each figure, moving from the top to the bottom and then back to the top. Additionally, the size of the squares increases in each figure. So, following this pattern, the missing figure should have a larger circle with three squares, one above the circle and two below it. Therefore, the correct figure is option B.

Short Method: The pattern involves alternating positions of squares in relation to a growing circle. Hence, the figure completing the sequence should have a larger circle with three squares, one above and two below, matching option B.

Q34: If 12 + 3 = 4, 18 + 4 = 8, and 24 + 5 = 12, then 30 + 6 = ?
Long Method: To solve this analogy, we need to determine the pattern in the given equations. Looking at the equations, we notice that the result is always one less than the product of the two numbers multiplied together. For example, in the first equation 12 + 3, the result is 4, which is one less than 15 (12 × 3). Similarly, in the second equation 18 + 4, the result is 8, which is one less than 24 (18 × 4). Applying this pattern to the third equation, 24 + 5 equals 29, and subtracting 1 gives 28. Therefore, for 30 + 6, the result would be one less than 180, which is 179.

Short Method: The pattern observed is that the result of each addition is one less than the product of the two numbers. Hence, for 30 + 6, the result would be one less than 180, which is 179.

Q35: Choose the pair that best completes the analogy: Library: Books :: Museum: _____
Long Method: In this analogy, we need to determine the relationship between "Library" and "Books" and find a similar relationship in the given options. A library is a place where books are stored and made available for borrowing, so the relationship is that libraries contain books. Similarly, a museum is a place where artifacts are stored and displayed for public viewing. Therefore, the correct pair is Museum: Artifacts.

Short Method: The analogy here is that libraries contain books, just as museums display artifacts. Hence, the answer is Museum: Artifacts.

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