Reader's Sign _____ Date _____

ORANGE GLOBAL OLYMPIAD

School Level Examination
SLE 2024

SET: I

GRADE 6

MATHEMATICS

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**. Each question carries one mark. Use the information provided to choose the **BEST** answer among the four possible options. On your **ANSWER SHEET** fill in the circle that matches your answer.
- Marks are **NOT** deducted for incorrect answers.
- 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 6

This question paper contains a total of 40 questions divided into three sections – A, B and C.

Section A (Logical Reasoning)

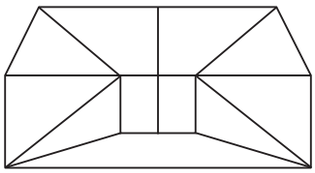
1. Find the next term in the series given below.

   2E, 3J, 5O, ___

   (A) 7S (B) 7T

   (C) 11R (D) 11U

2. What is the minimum number of straight lines required to draw the given figure?



   (A) 14 (B) 15

   (C) 17 (D) 19

3. If 'OVER' is coded as 'QYIW' and 'UP' as 'WS', then 'STAR' is coded as _____ .

   (A) UVBS (B) VBUS

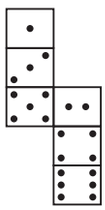
   (C) UWEW (D) UWEV

4. If the first and second letters in the word DEPRESSION were interchanged, also the third and fourth letters, the fifth and sixth letters and so on, then which of the following would be the eighth letter from the left end?

   (A) O (B) R

   (C) S (D) I

5. When the given figure is folded to form a cube, how many dots are on the face that is opposite the face with six dots?



   (A) 2 (B) 3

   (C) 1 (D) 4

6. A is B's brother. C is D's father. E is B's mother. A and D are brothers. How is E related to C?

   (A) Sister (B) Sister-in-law

   (C) Niece (D) Wife

7. If P denotes '×', T denotes, '–', Y denotes '+' and Z denotes '÷', then the value of 28 Z 7 P 8 T 6 Y 4 is _____ .

   (A) 18 (B) 34

   (C) 32 (D) 30

8. In a group of 50 people, 15 like basketball, 20 like volleyball, and 5 like both. How many people in the group neither like basketball nor volleyball?

(A) 15 (B) 10

(C) 20 (D) 30

Section B (Subject Specific)

9. If N = 1 × 2 × 3 × … × 13, then which digit is in the tens place of the number N?

(A) 2 (B) 4

(C) 6 (D) 0

10. The successor of 1 million is _____.

(A) 10,001 (B) 10,00,001

(C) 100,001 (D) 1,00,00,001

11. How many even numbers between 1 and 100 are multiples of 3?

(A) 17 (B) 16

(C) 15 (D) 13

12. P is a natural number that is divisible by 7. If the predecessor of P is a multiple of 5, and 25 < P < 85, then which of the following is true for P?

(A) Successor of P is a prime number. (B) Predecessor of P is less than 50.

(C) Successor of P is greater than 50. (D) All of these.

13. Which of the following digits makes the given number sentence true?

902081$\underline{?}$ is divisible by 11.

(A) 1 (B) 3

(C) 4 (D) 9

14. If the sum of two numbers is 72 and the H.C.F. and L.C.M. of these numbers are 9 and 135 respectively, then what is the sum of the reciprocals of these numbers?

(A) $\frac{8}{135}$ (B) $\frac{9}{13}$

(C) $\frac{72}{135}$ (D) $\frac{27}{56}$

15. Which one of the following is not an integer?

(A) 0 (B) –1

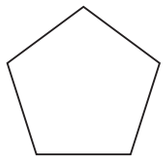
(C) –1.5 (D) 1

16. The region of a curve is its _____.

(A) interior (B) exterior

(C) interior together with its boundary. (D) exterior together with its boundary.

17. There are two statements for the given shape, marked as Assertion(A) and Reason (R). Choose the correct option.



Assertion(A): The given figure has 5 diagonals.

Reason(R): A diagonal is a line segment that connects the non-adjacent vertices of the polygon.

(A) A is true but R is false.

(B) A is false but R is true.

(C) Both A and R are true and R is not the correct explanation of A.

(D) Both A and R are true and R is the correct explanation of A.

18. The product of the largest two-digit number with different digits and smallest three-digit number with different digits is _____.

(A) 9,996 (B) 9,990

(C) 9,986 (D) 9,978

19. If Meena's present age is y years, what will be her age 6 years from now?

(A) $6y$ (B) $y - 6$

(C) $6 - y$ (D) $y + 6$

20. 0.8499 lies between

(A) 0.8 and 0.84 (B) 0.85 and 0.89

(C) 0.849 and 0.85 (D) 0.84992 and 0.85

21. The variables in the algebraic term "$-5pqr$" are _____.

(A) $-5p$ and $-5qr$ (B) $-q$, $-p$ and $-r$

(C) p, q, r (D) None of these

22. There is a pool of dimensions 10 m by 6 m. There is a pavement of width 5 m around the pool. The area of the pavement is _____.

(A) 260 m^2 (B) 240 m^2

(C) 230 m^2 (D) 210 m^2

23. At 6:20, the angle formed between the hour hand and minute hand of a clock is a/an _____ angle.

(A) obtuse (B) right

(C) acute (D) reflex

24. In a class, there are x boys and 7 more girls than boys. What is the ratio of the total number of students to the number of girls in the class?

(A) $(2x + 7) : (x + 7)$ (B) $(x + 7) : x$

(C) $(7x + 2) : (x + 7)$ (D) $(x + 7) : (2x + 7)$

25. 18 of $[53 - \{7 \times 5 + (16 - 3 \text{ of } 5)\}] - \{5 \text{ of } 13 + 13 \text{ of } 5\}$ is _____.

(A) 153 (B) 186

(C) –186 (D) 176

26. A mixture contains milk and water in the ratio 7 : 2. If 18 litres of water is added to the mixture, the ratio of milk to water becomes 7 : 5. What was the initial amount of milk in the mixture?

(A) 42 L (B) 56 L

(C) 49 L (D) 53 L

27. What is the largest possible area of a triangle that can be placed inside a rectangle with length x cm and width y cm?

(A) xy cm^2 (B) $\frac{1}{2}$ xy cm^2

(C) $(x + y)$ cm^2 (D) $(xy)^2$ cm^2

28. Mihir recorded the number of chocolates sold on various days of a week, and represented the data on a pictograph, as shown below.

Days	Number of Chocolates Sold
Sunday	■ ■ ■ ■ ■
Saturday	■ ■ ■
Friday	■
Thursday	■ ■ ■ ■ ■
Wednesday	■ ■
Tuesday	■ ■ ■
Monday	■ ■ ■ ■

Key: ■ = 2 chocolates

The number of chocolates sold on two days preceding Thursday is _____ than the number of chocolates sold on two successive days after Wednesday.

(A) 1 more (B) 2 more

(C) 2 less (D) 3 less

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. Which of the following words is made of letters having only a horizontal line of symmetry?

(A) BED (B) MOM

(C) WAR (D) DEED

30. Which of the following are NOT true?

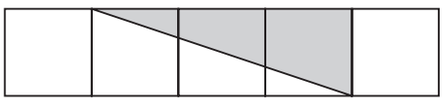
(A) Any one radius of a circle makes up a diameter.

(B) A circle is symmetric about each of its diameters.

(C) Diameter is the longest chord of a circle.

(D) Every chord of a circle is of equal length.

31. A rectangle is formed by connecting 5 identical squares. What portion of this larger rectangle is shaded? What is the ratio of the shaded portion to the unshaded portion?



(A) 3 : 7 (B) $\frac{3}{10}$

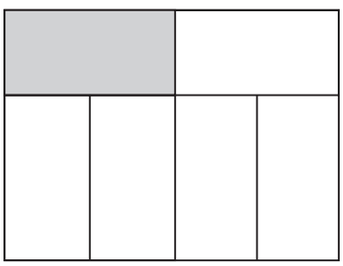
(C) $\frac{7}{10}$ (D) 5 : 7

32. If P is the largest negative integer, then

(A) $P > -2$ (B) $P < -2$

(C) $P > 2$ (D) $P < 2$

33. The rectangle shown is composed of 6 identical smaller rectangles. Given that the area of the shaded region is 162 cm^2, determine the perimeter and area of the entire shape.



(A) Perimeter = 324 cm

(B) Perimeter = 126 cm

(C) Area = 972 cm^2

(D) Area = 736 cm^2

Section C (Competency Enhancement)

34. Three bells ring at intervals of 9, 12 and 15 minutes respectively. At what time will they next ring together if last they rang together at 10:00 am?

(A) 1:00 pm (B) 2:15 pm

(C) 12:30 pm (D) 10:00 pm

35. Vikram has some ₹10 coins and Rahul has some ₹5 coins. Rahul has 15 coins more than Vikram. If both have the same amount of money, how much money does Vikram have?

(A) ₹150 (B) ₹75

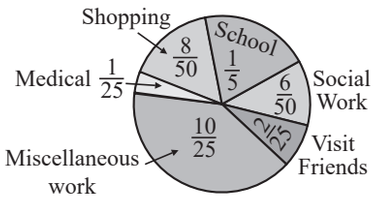
(C) ₹15 (D) ₹125

36. The number of distinct prime factors of the largest 6-digit number is___.

(A) 5 (B) 7

(C) 4 (D) 3

Mrs Khanna drove 1250 km in the month of March by her car. She drove for various works as shown in the fractional diagram. Using this information, answer the questions 37 and 38.



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

(A) 20 km (B) 25 km

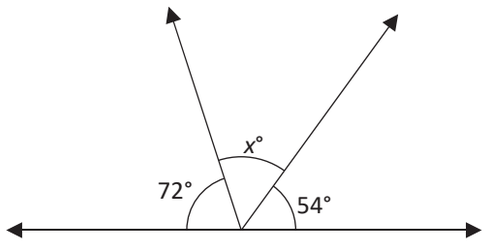
(C) 30 km (D) 50 km

38. Assuming that Mrs. Khanna goes to her school for 25 days, find out the distance travelled by her for miscellaneous work?

(A) 10 km (B) 12 km

(C) 15 km (D) 16 km

39. In the following figure, the value of *x* is_____.



(A) 54° (B) 45°

(C) 35° (D) 65°

40. A man walked 3 km towards East and then 4 km towards North. His final position at the end compared to his initial position is _____.

(A) 7 km towards North-East (B) 4 km towards North-East

(C) 5 km towards North (D) 5 km towards North-East

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