INDIAN SCHOOL SOHAR

TERM I EXAMINATION (2023-24)

MATHEMATICS (041)

CLASS: VIII   **MAX. MARKS: 80**

DATE: 19/09/2023   **TIME: 3 HOURS**

General Instructions:

1. This Question Paper contains 5 Sections **A, B, C, D and E**. Each section is compulsory. However, there are internal choices in some questions.

2. Section **A** has 18 **MCQs and 02** Assertion-Reason based questions of 1 mark each.

3. Section **B** has 5 **Very Short Answer (VSA)-type** questions of 2 marks each.

4. Section **C** has 6 **short answer (SA)-type** questions of 3 marks each.

5. Section **D** has 4 **long answer (LA)- type** question of 5 marks each.

6. Section **E** has 3 **source based/case based/passage based/ integrated units of** assessment of 4 marks each with sub-parts.

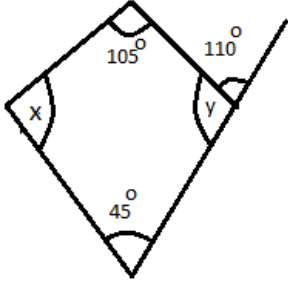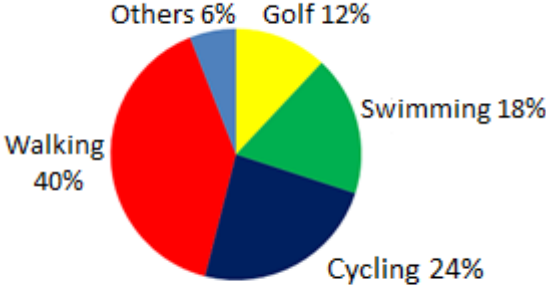|	SECTION -A	
	(Multiple choice questions)	
	Each question carries 1 mark.	
Q. No.	Question	Marks
1.	If a, b, c are rational numbers, then associativity of rational numbers under addition can be given by A) a + b = b + a B) a + (b + c) = (a + b) + c C) a × (b × c) = (a × b) × c D) a + (b − c) = (a + b) − c	1
2.	Which of the following is not a rational number? A) 9 + 0 B) 9 - 0 C) 9 × 0 D) $\frac{9}{0}$	1
3.	For rational numbers multiplicative identity is A) −1 B) 0 C) 1 D) 2	1
4.	The solution of the equation $2x + 3 = 3(x - 4)$ is A) 15 B) 14 C) 10 D) 13	1
5.	The solution of $2x - 3 = 9$ is A) 6 B) (-6) C) 5 D) 4	1
6.	The sum of the exterior angles of a convex polygon with 8 sides is A) 720º B) 360º C) 900º D) 1080º	1
7.	What is the name of a regular polygon with 4 sides? A) Rhombus B) Square C) Rectangle D) Trapezium	1

8.	When a die is thrown, what is the probability of getting an odd prime number? A) $\frac{1}{6}$ B) $\frac{1}{4}$ C) $\frac{1}{3}$ D) $\frac{1}{2}$	1
9.	The measure of each exterior angle of a regular polygon of 9 sides is A) 30º B) 40º C) 60º D) 45º	1
10.	One angle of a parallelogram is a right angle. The parallelogram is a A) Rhombus B) Square C) Rectangle D) Kite	1
11.	What is the probability of randomly choosing a vowel from the alphabets? A) $\frac{21}{26}$ B) $\frac{5}{26}$ C) $\frac{1}{26}$ D) $\frac{3}{26}$	1
12.	The probability of getting a number 7, when a dice is thrown is A) $\frac{1}{2}$ B) $\frac{1}{6}$ C) 1 D) 0	1
13.	A bag contains 3 red balls, 5 black balls and 4 blue balls. The probability of getting a red ball, when a ball is drawn randomly from the bag is A) $\frac{1}{4}$ B) $\frac{5}{12}$ C) $\frac{1}{3}$ D) $\frac{3}{11}$	1
14.	The perfect square number between 50 and 80 is A) 56 B) 75 C) 54 D) 64	1
15.	Which of the following is not a Pythagorean triplet? A) 3, 4, 5 B) 6, 8, 10 C) 5, 12, 13 D) 2, 3, 4	1
16.	How many whole numbers lie between 36^2 and 37^2? A) 36 B) 37 C) 74 D) 72	1
17.	What could be the possible one's digit of the cube of 573? A) 9 B) 3 C) 7 D) 6	1
18.	Which of the following is a perfect square number? A) 2222 B) 32543 C) 10000 D) 888	1
	ASSERTION-REASON BASED QUESTIONS **In the following questions, a statement of Assertion (A) is followed by a statement of Reason (A).** **Choose the correct answer out of the following choices.** (a) **Both (A) and (R) are true and (R) is the correct explanation of (A).** (b) **Both (A) and (R) are true and (R) is not the correct explanation of (A).** (c) **(A) is true and (R) is false.** (d) **(A) is false and (R) is true.**	1
19.	**Assertion (A) – 0 is not a rational number** **Reason (R) – A rational number is a type of number, which is in the form of p/q, where p and q are integers and q is not equal to zero.**	1

	a) Both A and R are true and R is the correct explanation of A	
	b) Both A and R are true but R is not the correct explanation of A	
	c) A is true but R is false	
	d) A is false but R is true	
20.	**Assertion (A) – The sum of the measures of all the three angles of a triangle is 180°.** **Reason (R) – A triangle is a polygon with three edges and three vertices. It is one of the basic shapes in geometry** a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true but R is false d) A is false but R is true	1

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SECTION B
(This section comprises of very short answer type questions (VSA) of 2 marks each)

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21.	Name the property used in the following. i) $\frac{5}{12} \times \left(-\frac{1}{7}\right) = \left(-\frac{1}{7}\right) \times \frac{5}{12}$ ii) $\frac{2}{5} \times \left(-\frac{1}{2}\right) = -\frac{1}{5}$, which is a rational number.	2
22.	Find the value of x in the following figure. 	2
23.	Following Pie-chart shows the favourite activities of the members of a club. Observe the Pie-chart and answer the question given below. If 384 members like Cycling, what is the total number of members in the club?	2

24.	Find the sum of the following without adding. 1+3+5+7+9+11+13+15+17+19+21+23 **(OR)** Find a Pythagorean triplet in which one number is 16.	2
25.	Verify by prime factorisation, whether 8192 is a cube number. **(OR)** Find the cube root of 15625 by prime factorisation.	2

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SECTION C

(This section comprises of short answer type questions (SA) of 3 marks each)

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26.	Using appropriate properties find the value of $\frac{2}{3} \times \frac{5}{7} + \frac{2}{3} \times \frac{5}{9}$.	3
27.	Solve the following equation $7x - 2 = 5(x + 2) - 4$ **(OR)** Solve the ollowing equation $3(x - 1) = 23 - 5(x + 2)$	3
28.	The measures of two adjacent angles of a parallelogram are in the ratio 7:11. Find the measures of each angle of the parallelogram. **(OR)** In a parallelogram ABCD, if $\angle D = 75^\circ$, find the measures of the other three angles.	3

29.	Given pie chart shows the games liked by class VIII students. Read answer the questions given below. There are 180 students in class VIII.
	
	    i) How many students like Basketball?
	    ii) How many students like Cricket?
	
		3

30.	Find the smallest whole number by which 1008 should be multiplied so as to get a perfect square number. Also find the square number and its square root.	3
31.	Find the cube root of 13824 by prime factorisation.	3

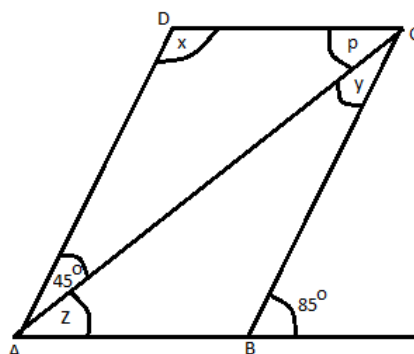|	**SECTION D**	
	(This section comprises of long answer type questions (LA) of 5 marks each)	
32.	Solve the equation: $\dfrac{6x+1}{3} + 1 = \dfrac{x-3}{6}$ **(OR)** Solve the equation: $\dfrac{5x-14}{7} - \dfrac{1}{2} = \dfrac{3x-1}{14}$	5
33.	Draw a pie-chart showing the following inormation. The table shows the colours preferred by a group of students. 	Colours	Number of students	 |---|---| 	Blue	18	 	Green	9	 	Red	6	 	Yellow	3	 	Total	36		5
34.	Find the least number that should be subtracted from 3250 so as to get a perect square number. Find the square number and also its square root. **(OR)** Find the least number that should be added to 1825 so as to get a perect square number. Find the square number and also its square root.	5
35.	Find the smallest number by which 21296 should be divided so as to get a perfect cube number. Find the cube number and also its cube root.	5
	SECTION E	
	(This section comprises of 3 case -study/passage based questions of 4 marks each with sub parts. The first two case study questions have three sub parts (i), (ii), (iii) of marks 1,1,2 respectively. The third case study question two sub parts of two marks each.)	
36.	Observe the given parallelgram and answer the questions given below. (i) Find the measure of angle z (ii) Find the measure of angle y (iii) Find the measure of angle x **(OR)** (iii) Find the measure of angle $\angle BCD$	4

37.	Observe the following paragraph and answer the questions given below.
	
	A gardener has 1500 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. He needs to buy some more plants for this.
	
	   (i) Find the minimum number of plants he needs more for this.
	   (ii) Find the total number of plants he will be planting.
	   (iii) Find the number of rows in this arrangement.
	            (OR)
	   (iii) Later if the gardner adds one more row and column to the above arrangement, find the total number of plants in the new arrangement.
		4

38.	Observe the following equation and answer the questions given below.
	
	$$\frac{5x-4}{8} - \frac{x-3}{5} = \frac{x+6}{4}$$
	
	   (i) Reduce the equation to its simpler form. (Using the LCM of the denominators).
	   (ii) Find the solution of the equation
		4