GRADE: VIII Date: 03/10/2023	TERM 1 (2023-24) MATHEMATICS	Marks: 40 Time: 2 Hours

Q.No.	Questions	Mark
	MULTIPLE CHOICE QUESTIONS **(Choose the correct answer)**	
1	In a rational number $\frac{a}{b}$ which of the following is correct? a. b = 0 b. a ≠ 0 c. b ≠ 0 d. a≠ b	**1**
2	The absolute value of $\frac{-11}{-17}$ is a. $\frac{-17}{-11}$ b. $\frac{-11}{17}$ c. $\frac{17}{11}$ d. $\frac{11}{17}$	**1**
3	Which of the following is the solution of $3x - 12 = 0$ a. $x = 3$ b. $x = 4$ c. $x = 9$ d. $x = 15$	**1**
4	Linear equations are of which degree? a. Degree 0 b. Degree 1 c. Degree 2 d. Any degree	**1**
5	Rhombus with equal diagonals become a a. Parallelogram b. Rectangle c. Square d. Kite	**1**
6	Which quadrilateral gives two isosceles triangles when cut along the shorter diagonal?	**1**

Perimeter o a rectangle = 2 × (length + breadth)
= 2 × (x + (x+2))
= 2 × (2x + 2)
= 4x + 4.

	a. Parallelogram b. Rhombus c. Trapezium (d.) Kite	
7	What is the minimum number of measurements required to draw a rectangle? a. 1 (b.) 2 c. 3 d. 4	1
8	Which of the following quadrilateral have four equal sides? a. Trapezium b. Parallelogram c. Rectangle (d. Rhombus)	1
9	The frequency of 5 in the data 1,2,5,7,8,5,7,2,8,5,1,2 is a. 1 b. 2 (c.) 3 d. 4	1
10	The sum of the observations divided by the number of observations gives the (a. Mean) b. Range c. Frequency d. Class mark	1
	FILL IN THE BLANKS	
11	Fill in the blank with <, > or = $\dfrac{3}{7}$ --<-- $\dfrac{4}{9}$	1
12	The solution of the equation $2x - 5 = 3$ is ----*x = 4*----	1
13	The four angles of a quadrilateral add up to ----*360°*----	1
14	To draw a unique quadrilateral we need ---*5*--- measurements.	1
15	The class size of the continuous intervals 25-30, 30-35 and son on is ---*5*-----	1
	TRUE OR FALSE	

16	The standard form of the rational number $\frac{9}{-12}$ is $\frac{-3}{4}$. *(T)*	1
17	The solution of an equation is the highest power of the terms in the equation. *F*	1
18	Rhombus is a kind of parallelogram. *T*	1
19	A quadrilateral can have one of its angles equal to 180^0. *F*	1
20	The mean of first 5 natural numbers is 3. *T*	1
	VERY SHORT ANSWER TYPE QUESTIONS	
21	All integers are rational numbers. Is the converse true? Justify your answer. Converse is not true. $\frac{1}{2}$ is a rational number but not an integer.	2
22	Three consecutive even numbers add up to 24. Find them. Let the numbers be $x, x+2$ and $x+4$ Then, $x+(x+2)+(x+4)=24$ $3x+6=24$ $3x=18, x=6$ ∴ The even numbers are 6, 8 and 10.	2
23	The angles of a quadrilateral are in the ratio 1:2:2:4. Find all the angles. Let the angles be $x, 2x, 2x$ and $4x$. Sum of all interior angles of a quadrilateral $= 360°$ $x+2x+2x+4x=360°$ $9x=360°, x=\frac{360°}{9}=40°$ ∴ The angles are $40°, 80°, 80°$ and $160°$.	2

24	Write any four features of a parallelogram.	2

(i) Opposite sides are equal

(ii) Opposite sides are parallel

(iii) Opposite angles are equal

(iv) Adjacent angles are supplementary.

25	Observe the following frequency distribution table and answer the questions.	2

Intervals	Tally Marks	Frequency
0 - 5	||	2
5 - 10	||	2
10 - 15	||||	5
15 - 20	||||	5
20 - 25	|||	3
25 - 30	|||	3

(i) What is the class size of the intervals?

(ii) What is the class mark of the interval 20-25?

(i) 5

(ii) $\dfrac{20+25}{2} = 22.5$

	SHORT ANSWER TYPE QUESTIONS	

26	The length of a rectangle is 2cm more than its breadth. If the perimeter of this rectangle is 28cm, find the length and breadth.	3

Let the breadth $= x$

Then length $= x+2$

Perimeter $= 2 \times (\text{length} + \text{breadth})$

$= 2 \times (x+2+x) = 2(2x+2)$

$= 4x+4$.

$\therefore 4x+4 = 28$

$4x = 24, \ x = 6$

$\therefore$ Breadth $= 6cm$ and Length $= 8cm$

27	The weight of 20 students in a class is given as follows. Draw a frequency distribution table and answer the following questions. 45, 46, 50, 45, 47, 51, 46, 56, 65, 60, 45, 42, 47, 50, 50, 60, 65, 51, 47, 56.	3

(i) Find the range.

(ii) Find the arithmetic mean.

Weight(x)	Tally marks	Frequency(f)	xf
42	|	1	42
45	|||	3	135
46	||	2	92
47	|||	3	141
50	|||	3	150
51	||	2	102
56	||	2	112
60	||	2	120
65	||	2	130
Total		**20**	**1024**

(i) Range $= 65 - 42 = \underline{23}$

(ii) Mean $= \dfrac{1024}{20}$

$= \underline{51.2}$

	LONG ANSWER TYPE QUESTIONS	
28	Construct a square of diagonal 6cm.	4

Construction

1) Draw a line segment AC=6cm
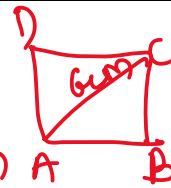
2) Draw the perpendicular bisector xy of AC. and let O be the point of intersection of xy and AC.

3) On ray OX, draw an arc of radius 3cm as O as centre.

4) On ray OY, draw an arc of radius 3cm as O as centre.

5) Let the points be B and D.

6) Join AB, BC, CD and AD.