



INDIAN SCHOOL AL WADI AL KABIR

Mid-Term Examination (2023-24)

Class: VIII

Sub: MATHEMATICS

Max Marks: 80

Date: 01/10/23

Set - 2

Time: 2 ½ hours

Instructions:

Section A: Multiple Choice Question (Q.1 to Q.15) & Source-based Question (Q.16)

Section B: Short Answer Questions of 2 marks each (Q.17 to Q.21)

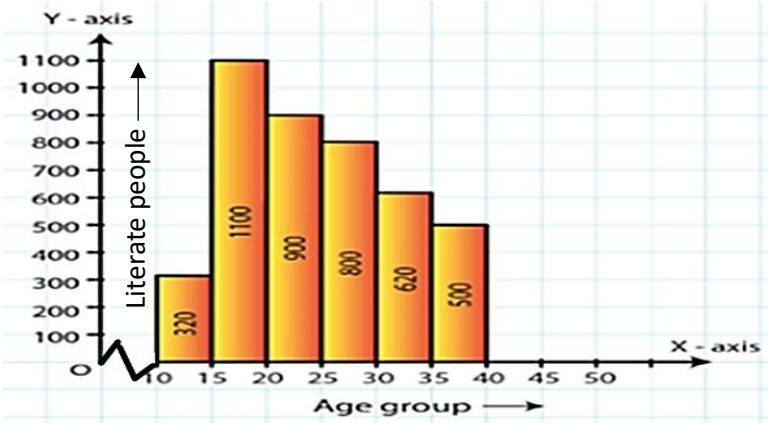
Section C: Long Answer Questions (Type – 1) of 3 marks each (Q.22 to Q.26)

Section D: Long Answer Questions (Type – 2) of 4 marks each (Q.27 to Q.31)

& Case study Question (Q.32 to Q.34) of 5 marks each.

Section A: Multiple Choice Question (Q.1 to Q.15) of 1 mark each								
1.	Express the thickness of the soap bubble 0.00001275m in the standard form.							
	A	$1.275 \times 10^{-5}m$	B	$1.275 \times 10^{-7}m$	C	$12.75 \times 10^{-5}m$	D	1.275×10^5m
2.	What is the multiplicative inverse of $(19)^{-5}$?							
	A	$\left(\frac{-1}{19}\right)^5$	B	$\frac{1}{19}$	C	$(-19)^{-5}$	D	$(19)^5$
3.	In the class interval (35 – 45), 45 is called as the_____.							
	A	Upper limit	B	Lower limit	C	Range	D	Frequency
4.	Simplify: $(-2)^7 \div (-2)^3$ and express the result in power notation with a positive exponent.							
	A	$(-2)^3$	B	$(-2)^4$	C	$(2)^3$	D	$(-2)^{-10}$
5.	What is the measure of the sum of all interior angles of a convex polygon with seven sides?							
	A	180°	B	540°	C	630°	D	900°

6.	Which of the following rational numbers lies between $-\frac{1}{2}$ and $\frac{1}{3}$?							
A	$\frac{2}{6}$	B	$-\frac{1}{6}$	C	$\frac{3}{6}$	D	$-\frac{5}{3}$	
7.	Prime factorization of a perfect square number, N is given below. Which set of numbers should be in the place of A and B respectively? $N = 2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 7 \times 11 \times 11 \times 13 \times A \times B$							
A	7 and 13	B	7 and 2	C	3 and 11	D	10 and 12	
8.	Name the property of the rational numbers illustrated by the mathematical expression $\frac{5}{11} \times \left(\frac{2}{7} + \frac{-3}{7} \right) = \left(\frac{5}{11} \times \frac{-3}{7} \right) + \left(\frac{5}{11} \times \frac{2}{7} \right)$							
A	Commutativity	B	Associativity	C	Identity	D	Distributivity	
9.	The number of pencils in Kitty's box is 6 more than twice the number of rulers in it. If the number of pencils in her box is P and the number of rulers is R, which of the following is true?							
A	$6R = P$	B	$P + 6 = 2R$	C	$2R + 6 = P$	D	$6P = R$	
10.	Choose the Rational number equivalent to $-\frac{2}{5}$.							
A	$\frac{2}{10}$	B	$\frac{2}{5}$	C	$-\frac{20}{50}$	D	$-\frac{12}{15}$	
11.	What will be the unit digit of the square root of the 4489?							
A	1,9	B	3,7	C	3,9	D	1,7	
12.	Find the measure of an exterior angle of a regular polygon of 6 sides.							
A	90°	B	60°	C	50°	D	75°	

13.	Simplify: $\sqrt{24 + \sqrt{144}}$							
A	$\sqrt{30}$	B	6	C	$\sqrt{306}$	D	$\sqrt{168}$	
14.	How many consecutive odd numbers starting from 1, have to be added to get 64?							
A	8	B	5	C	2	D	10	
15.	Which of these describes a trapezium?							
A	The diagonals are equal.	B	The diagonals bisect each other	C	The diagonals are perpendicular	D	A pair of opposite sides is parallel	
Q16.	Source-based Question -5 Marks							
	The following histogram shows the literate population in a particular town of the age group of 10 to 40 years:							
I	Write the age group in which the number of literate people is the highest.							
A	15 - 20	B	20 - 25	C	25 - 30	D	30 - 35	
II	What is the class width of each group?							
A	10	B	5	C	15	D	25	
III	What is the frequency in the age group 30 - 35?							
A	1100	B	800	C	620	D	320	
IV	In which age group the literate people are the least?							
A	15 - 20	B	10 - 15	C	25 - 30	D	30 - 35	
V	Find the total literate population above the age of 20 years?							
A	1980	B	1820	C	2820	D	4440	

Section B: Short Answer Questions (Type – 1) of **2** marks each (Q.17 to Q.21)

17.	Find the value of $\left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{5}\right)^{-2} + \left(\frac{1}{4}\right)^{-2}$
18.	Calculate the missing value of "x" in the following expression: $\left(\frac{1}{9}\right)^2 \times \left(\frac{1}{9}\right)^{3x} = \left(\frac{1}{9}\right)^{17}$
19.	Find a Pythagorean triplet whose smallest member is 10.
20.	The sum of two-fifths of a number and 46 is 110. Find the number.
21.	By using appropriate property, Find the value of: $\frac{3}{8} \times \frac{-4}{5} + \frac{3}{8} \times \frac{9}{5}$.

Section C: Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.26)

22.	Simplify: $\frac{4^{-3} \times a^{-5} \times b^{-4}}{4^{-5} \times a^{-8} \times b^3}$ ($a, b \neq 0$)
23.	Solve the linear equation and find the value of variable x : $8x + 4 = 3(x - 1) + 17$
24.	Find the square root of 1369 by the Division method.
25.	Represent $\frac{-3}{4}$, 0 , $\frac{1}{4}$, and $\frac{1}{2}$ on the same number line.
26.	In a quadrilateral, the angles A, B, C and D are in the ratio 1 : 2 : 3 : 4. Find the measure of each angle of the quadrilateral.

Section D: Long Answer Questions (Type – 2) (Q.27 to Q.31) of **4** marks each
& Case study (Q.32 to Q.34) of **5** marks each

27.	Insert 4 rational numbers between $\frac{-1}{4}$ and $\frac{1}{5}$.
28.	The present ages of Anu and Raj are in the ratio 4:5. After 5 years their ages will add to 64 years. Find their present ages.
29.	Find the smallest whole number by which 1575 should be multiplied to get a perfect square number, also find the square number so obtained.

30.	A school has formed 4 clubs to conduct various co-curricular activities. Students were told they could join the club of their choice. Draw a pie chart for the given information.	Club name	Number of students
		Math Club	60
		Eco Club	45
		Drama Club	45
		Readers Club	30
Total		180	

31. In a parallelogram ABCD, sides BC extended to point G. Find values of w , x , y , and z from the given figure.

32. **Case Study-1**

Sally and her friends created a banner in the shape of a parallelogram for an inter-school competition on the topic "SAVE WATER". The banner looks like the figure given below:

Based on the given information answer the following questions:

- If $\angle A = (4x + 30^\circ)$ and $\angle B = 70^\circ + x$. Find the measure of 'x'.
- If $AB = 2y - 3$ and $CD = 5\text{cm}$, then what is the value of 'y'?
- Name the special parallelogram with equal four sides and equal angles.

33.

Case Study-2

For the Children's Day special assembly, Class VII and Class VIII, together consisting of 912 students, had to be seated in the multipurpose hall in such a way that there were equal numbers of students in each row as there were rows in the hall. However, some children were left without a seat in the MP hall. Based on the given information, answer the following questions:

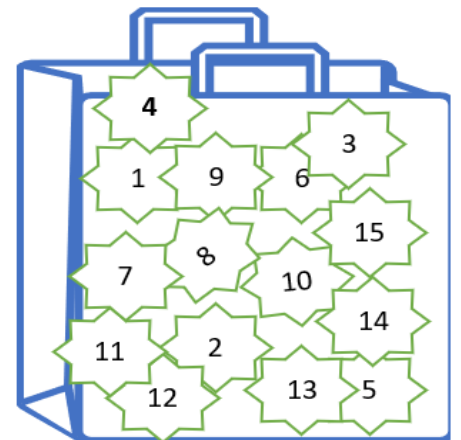


1. How many students did not get a seat in the MP hall?
2. The Students were holding right-angled triangle shaped flags with sides of 6 cm and 8 cm. Find length of the longest side of the flag.
3. How many natural numbers lie between $(18)^2$ and $(19)^2$?

34.

Case Study-3

Students of Class VIII tried to understand the concept of probability, they made 15 cards in which numbers from 1 to 15 are written and put them into a bag. A card is taken out from the bag at random. Based on the given information, answer the following questions:



1. List numbers on selected cards that are divisible by 3. Find probability of the event.
2. List the outcomes and find the probability of getting a prime number smaller than 10.
3. The letters that make up the word MATH are placed in a bowl. What is the probability of selecting the letter "A"?

***** The End*****