DELHI PUBLIC SCHOOL JAMMU
SESSION (2024-25)
HALF YEARLY EXAMINATION
SAMPLE PAPER

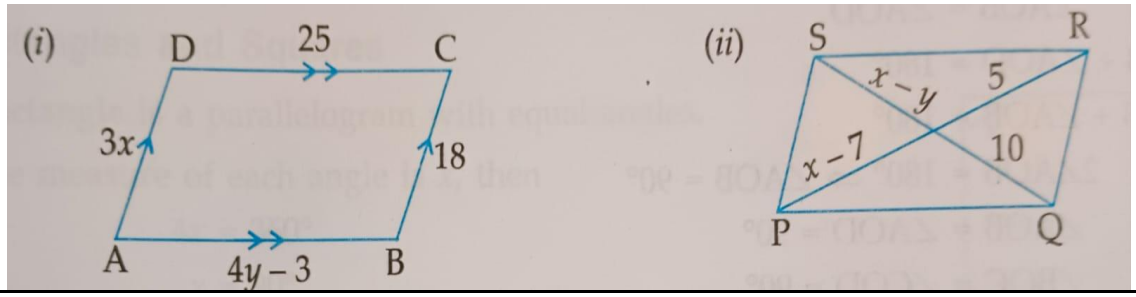
Class: VIII **Time: 3 hours**
Subject: MATHS **Max. Marks: 80**
General Instructions:

- All the questions are compulsory.
- The question paper has 5 sections A, B, C, D and E.
- Section A has 20 Multiple Choice Questions (MCQs) carrying 1 mark each.
- Section B has 5 Short Answer-I (SA-I) type questions carrying 2 marks each.
- Section C has 6 Short Answer-I (SA-II) type questions carrying 3 marks each.
- Section D has 4 Long Answer (LA) type questions carrying 5 marks each.
- Section E has 3 Case-Study based questions (4 marks each) with subparts of the values 1.
- All questions are compulsory. However, an internal choice in 2Qs of 2 marks, 2Qs of 3 marks and 2Qs of 5 marks has been provided. An internal choice has been provided in the 2 marks questions of section E
- Draw neat figures wherever required.

	Section – A **Multiple Choice Questions**	
SN		**Marks**
1	Which of the following type of numbers are not closed under subtraction? a) Rational Numbers b) Integers c) Whole Numbers d) All of the mentioned	1
2	What is the sum of the additive inverse and multiplicative inverse of 2? (a) $\frac{3}{2}$ (b) $\frac{-3}{2}$ (c) $\frac{1}{2}$ (d) $\frac{-1}{2}$	1
3	Which of the following is neither positive nor negative rational number ? (a) 1 (b) 2 (c) 0 (d) none of these	1
4	A number which can be written in the form, p/q where p and q are integers and _____ is called a rational number. (a) $q = 0$ (b) $q \neq 0$ (c) $q = 1$ (d) none of these	1
5	The value of 2^{-2} is: (a). 4 (b) $\frac{1}{4}$ (c) $\frac{-1}{4}$ (d) none of these	1
6	$\mathbf{2^2 \times 2^3 \times 2^4}$ is equal to**:** (a) 2^{24} (b) 2^{-5} (c) 2^9 (d) 2^{-9}	1
7	The multiplicative inverse of $\frac{1}{9}$ is: (a) 3^{-2} (b) 3^2 (c)3 (d) none of these	1
8	Which of the following is the number of zeros in the square of 900? (a) 3 (b) 4 (c) 5 (d) 2	1

9	Which of the following is the number non-perfect square numbers' between the square of the numbers 'n' and n + 1? (a) n + 1 (b) n (c) 2n (d) 2n + 1	1
10	If a number has 1 or 9 in the unit's place, then it's square ends in _____. (a) 3 (b) 9 (c) 1 (d) 4	1
11	What is the cube root of 216? (a) 4 (b) 5 (c) 6 (d) 7	1
12	Which of the following is the cube root of $\frac{-64}{343}$? (a) $\frac{7}{4}$ (b) $\frac{-7}{4}$ (c) $\frac{7}{2}$ (d) none of these	1
13	Which of the following is correct? (a)Cube of a negative number is always positive. (b)Cube of a negative number is always negative (c) Cube of a negative number may be positive or negative. (d). All of the above	1
14	If 7x+15 = 50, then which of the following is the root of the equation? (a) -5 (b) 65/7 (c) 5 (d) 1/5	1
15	How old will I be after 10 years, if my age before 10 years was 'x' years? (a) X + 20 (b) X - 20 (c) X + 10 (d) X - 10	1
16	If 2x/5 = 4, the value of x is- (a) 10 (b) -10 (c)-8/5 (d) 8/5	1
17	Which of the following quadrilaterals has two pairs of adjacent sides equal and diagonals intersecting at right angles? (a) square (b) rhombus (c) kite (d) rectangle.	1
18	The sides of a pentagon are produced in order. Which of the following is the sum of its exterior angles? (a) 540° (b) 180° (c) 720° (d) 360°	1
	(Q19-Q20) <u>Assertion and Reason Based Questions</u> This type of reasoning questions consists of two statements; an assertion (statement of fact) and a reason (explanation for the assertion). You have to determine whether each statement is correct. If both the statements are correct, you have to determine whether the reason supports the assertion. There will be four answer choices for the possible outcomes and you have to select the correct one.	
19	**Assertion (A) – There are 30 natural numbers lying between the squares of 15 and 16** **Reason (R) – Number of natural numbers lying between a^2 and b^2 is a + b - 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	1
20	**Assertion (A) –A kite is always a rhombus.** **Reason (R) – A kite has two pairs of adjacent sides of equal length.** 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
	Section-B	
21	Find two rational numbers between $\frac{-2}{5}$ and $\frac{1}{2}$	1

22	If the product of any rational numbers is 2 and one of them is 15, find the other. Or The sum of two numbers is $\frac{-5}{3}$. If one of the number is -4, what is the other number?	
23	Express 8^{-4} as a power with the base 2 Or Write the following in standard form (i) 0.0035 (ii) 365.05	2
24	Find the cubes of the following: (a) $5\frac{2}{3}$ (b) 0.8	2
25	Find the number of sides of a regular polygon whose each exterior angle has a measure of 45^0.	2
	Section-C	
26	Verify associativity of addition of rational numbers when, x =12, y =13, z = -1	3
27	Find the value of k if $(-2)^{k+1} \times (-2)^3 = (-2)^1$ or Mass of the Earth is 5.97×10^{24} kg and that of Moon is 7.35×10^{22} kg .Find the total mass of the Earth and the Moon.	3
28	Write a Pythagorean triplet whose smallest member is 10.	3
29	Solve:- $\frac{(2x-3)-(2x+3)}{6x+11} = \frac{8}{3}$	3
30	Prove that the interior angle of a regular Pentagon is three times the exterior angle of a regular decagon.	3
31	The opposite angles of a parallelogram are $(3x + 5)°$ and $(61 – x)°$. Find the measure of four angles. Or Four angles of a quadrilateral are in the ratio 1:2:3:4 what is the measure of each angle?	3
	Section-D	
32	Find The least number which must be added to 8400 to obtain a perfect square. Find the square root of this perfect square number also.	5
33	Find the greatest 4 digit number that is a perfect cube. Or a) Find the cube root of 54872 by Prime factorization method. b) The volume of cubical box is 0.027 m^3.Find the length of the edge of box.	5
34	Solve and verify your answer: $\frac{17(2-x)}{1-7x} + \frac{5(x+12)}{7x-1} = 8$	5
35	The shorter side of a parallelogram is 3.6cm and the longer side is half as much again as shorter side. Find the perimeter of the Parallelogram. **Or**	5

	Find the value of 'x' & 'y' from the parallelograms given below:  	
	Section-E **Case Study based Questions**	
36	A teacher shows 4 articles of different length in a class room of VIII Standard. The difficulty is that the lengths are in exponential form. The lengths of the articles are following: a) $3 \times (16)^{3/4}$ ii) $2 \times (27)^{2/3}$ iii) $4^0 \times (16)^{3/4}$ iv) $2 \times (9)^{3/2} \times 3^{-1}$ Based on this information ,answer the following questions: 1) What is the length of Ist article? a) 6 cm b) 12 cm c) 24 cm d) none of these 2) What is the sum of the lengths of all articles? a) 48 cm b) 58 cm c) 68 cm d) none of these 3) What is the product of the lengths of Ist and 3rd article? a) 192cm b) 144cm c) 324cm d) 432cm 4) What is the ratio of the lengths of Ist and the 4th article? a) 3 :4 b) 4:3 c) 1:2 d) 4:9	4
37	Mahesh has a square shaped field of area $5184m^2$ and Ramesh has a rectangular shaped field whose length is twice its breadth. Perimeters of both the fields are same . Now based on this information answer the following questions: Q1 What is the length of each side of Square shaped field od Mahesh? a) 72m b) 27m c) 28m d) 84m Q2 What is the length of the rectangular field of Ramesh? a) 69m b) 96m c) 48m d) 23m Q3 What is the breadth of the rectangular field of Ramesh? a) 23m b) 28m c) 48m d) 58m Q4 What is the Area of the rectangular filed of Ramesh? a) $4608m^2$ b) $2865m^2$ c) $2398m^2$ d) none of these	4
38	A school decided to award prizes to the students for three values- discipline, cleanliness and regularity in attendance. The number of students getting prizes in the three categories are in the ratio 2:3:4 and the product the ratios is 192. Based on this information answer the following questions: 1) The number of students getting prize for discipline is a) 16 b) 3 c) 9 d) 4 2) The number of students getting prize for regularity in attendance is a) 4 b) 5 c) 32 d) 7 3) The ratio of the number of students getting prize for cleanliness to the regularity is a) 2:3 b) 3:4 c) 4:3 d) none of these 4) If the value of each prize is Rs 200, then find the total amount of prizes? a) Rs 14400 b) Rs 4800 c) Rs 2300 d) Rs 2000	4

Reflection Box						
1. How confident do you feel about your understanding of the topics covered in this assessment?	A) Very Confident		B) Somewhat Confident		C) Not Confident	
2. How well do you think you prepared for this assessment?	A) Very Well		B) Somewhat Well		C) Not Well	
3. What do you think you could have done differently to improve your performance on this assessment?	A) Studied thoroughly		B) Practiced more		C) Asked for help from the teachers or peers.	