Q. No.	Questions	Marks
1.	Which of the following properties of rational numbers is shown below? $\left(\frac{3}{4}\times\frac{7}{3}\right)\times\left(-\frac{4}{5}\right)=\frac{3}{4}\times\left(\frac{7}{3}\times-\frac{4}{5}\right)$ a) Closure property b) Distributive property c) Associative property d) Commutative property	1
2.	The property represented by	1

	$a\times(b+c)=a\times b+a\times c$ is: a) Commutativity b) Distributive property c) Associativity d) Closure property	
3.	If $-4=\frac{5x}{3}$ then the numerical value of $2x-7$ is: a) 0 b) 2 c) -1 d) 1	1
4.	Solve: $5t-3=3t-5$	1

	a) 0 b) 2 c) 1 d) -1	
5.	For which of the following figures are the diagonals perpendicular to each other?	1

	a) Heptagon b) Octagon c) Nonagon d) Kite	
6.	State the name of a regular polygon with 9 sides. a) Hexagon b) Octagon c) Nonagon d) Decagon	1
7.	The length and breadth of a rectangle are in the ratio4:3. If the diagonal measures 25 cm, then the perimeter of the rectangle is: a) 70 cm b) 60 cm	1

	a) 70 cm b) 60 cm c) 80 cm d) 56 cm	
8.	7396students are sitting in an auditorium in such a manner that there are as many students in a row as there are rows. How many rows are there? a) 4	1

	b) 6 c) 5 d) 3	
9.	The smallest number by which 3087 must be multiplied to make it a perfect cube is: a) $4x^3, 9x^3, 16x^3$ b) $x^3, 64x^3, 125x^3$ c) $8x^2, 27x^2, 64x^2$ d) $4x^2, 9x^2, 16x^2$	1
10.	Find the cubes of x, 4x, 5x . a) Rs 12,000 b) Rs 13,000 c) Rs 11,000	1

	d) Rs 10,000	
11.	Find the compound interest on Rs 25,000 for 2 years at 20% per annum, compounded annually. a) $(r+7)(r+3)$ b) $(r-7)(r-3)$	1

	c) $(r-7)(r+3)$ d) $(r-1)(r-4)$	
12.	Factorized form of $r^2-10r+21$ is: a) Sphere b) Cone c) Hemisphere d) Cylinder	1
13.	The three-dimensional figure formed by rotating a circle is: a) Convex polyhedron b) Cylinder c) Concave polyhedron d) Polygon	1

14.	A room is 15 meters long, 4 meters broad, and 3 meters high. Find the cost of whitewashing its four walls at 50 P per m^2. a) $144cm^2$ b) $912cm^2$ c) $864cm^2$ d) $288cm^2$	1

15.	If the volume of a cube is $1728cm^3$, then its surface area is: a) $144cm^2$ b) $912cm^2$ c) $864cm^2$ d) $288cm^2$	1
16.	The value of $\left(\frac{2}{5}\right)^{-2}$ is: a) $\frac{4}{25}$ b) $\frac{5}{2}$ c) $\frac{4}{5}$ d) $\frac{25}{4}$	1

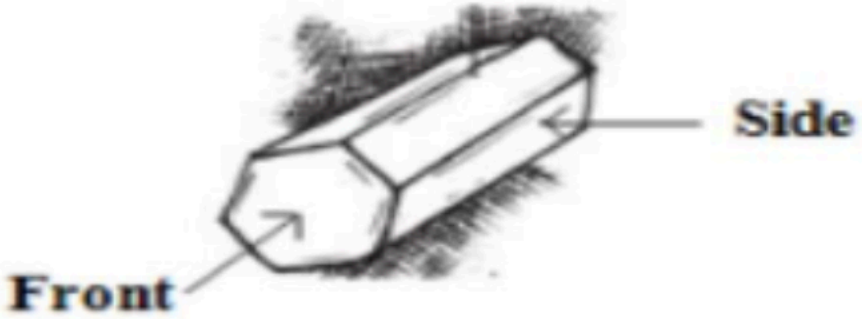
17.	If $3^{x+8} = 27^{2x+1}$, then the value of x is: a) 4 b) 27 c) 25 d) 8	1

18.	Simplify: $(-3)^2 \times \left(\frac{5}{3}\right)^2$ a) $(3m+2n)^2$ b) $(3m-2n)^2$ c) $(3m-2n)$ d) $(3m+2n)$	1
19.	$9m^2+12mn+4n^2$ is the same as: a) $(3m+2n)^2$ b) $(3m-2n)^2$ c) $(3m-2n)$ d) $(3m+2n)$	1

20.	Find the sum: $-5+\frac{7}{10}+\frac{3}{7}+(-3)+\frac{5}{14}+\left(-\frac{4}{5}\right)$ a) $\frac{-256}{35}$ b) 12 c) 1 d) 0	1

21	Using suitable rearrangement, find the sum: $-5+\frac{7}{10}+\frac{3}{7}+(-3)+\frac{5}{14}+\left(-\frac{4}{5}\right)$	2
22	Solve the equation and verify your result: $5x+9=5+3x$	2
23	A bag has 4 red balls and 2 yellow balls. A ball is drawn randomly from the bag. (i) What is the probability of drawing a red ball? (ii) Is this probability greater or smaller than drawing a yellow ball? OR A survey was conducted to find the favorite beverage preferred by a group of young people. The following pie chart represents the data. (i) Which type of beverage is liked by the maximum number of people?	2

	(ii) If 45 people like tea, how many people were surveyed?	
24	The dimensions of a rectangular field are 80 m and 18 m. Find the length of its diagonal.	2
25	For the given solid, draw the side view and front view.	2

		
26	Find the value of x , so that $(-2)^3 \times (-2)^{-6} = (-2)^{2x-1}$ OR Simplify and write in exponential form: $(-2)^{-3} \times (-2)^{-4}$	2
27	Solve: $5x + \frac{7}{2} = x - 14$	3

28	In the following figure of a ship, ABDH and CEFG are two parallelograms. Find the value of x .OR ABCD is a parallelogram. The bisector of angle A intersects CD at X and the bisector of angle C intersects AB at Y . Is AXCY a parallelogram? Justify your answer.	3

29	2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.	3
30	Is 1188 a perfect cube? If not, by which smallest natural number should 1188 be divided so that the quotient is a perfect cube?	3
31	The price of a TV is ₹13,000. The sales tax charged on it is at the rate of 12%. Find the total amount that Vinod will have to pay if he buys it. OR The marked price of a DVD is ₹4500. A shopkeeper allows two successive discounts of 10% and 5%. Find the selling price of the DVD after applying both discounts.	3
32	Add: p^3-1, p^3+p+2, p^2-2p+1	3

33	Rukhsar painted the outside of a cabinet with dimensions 1 m × 2 m × 1.5 m. How much surface area did she cover if she painted all surfaces except the bottom of the cabinet?	3
34.	Factorize: $(l+m)^2-(l-m)^2$	5

35	A sum of money becomes ₹17,640 in 2 years and ₹18,522 in 3 years at the same rate of interest compounded annually. Find the rate of interest.	5
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37.	Find the product of: $\left(p^{\frac{1}{2}}q\right)\times\left(p^{3}q^{6}\right)\times\left(p^{-2/3}p^{4}q^{2}\right)$	4
38.	Find the area of the following fields (diagram provided). OR The dimensions of a cuboid are in the ratio 2:3:4, and its total surface area is 208 m^2. Find its length, breadth, and height.	4

39.	Factorize: $6x^2 - 13x + 6$ OR Factorize the expression and divide: $\frac{(5p^2 - 25p + 20)}{(p-1)}$	4
40.	Consider the relation between the area (A) and side (x) of a square given by $A = x^2$. (a) Draw a graph to show this relation.	

	(b) From the graph, find A when $x = 4$. (c) Is this graph a linear graph?	