

General Instructions:-

- (i) The question paper is divided into four sections A, B, C and D.
- (ii) Section A contains 6 questions carrying 1 mark each.
- (iii) Section B contains 6 questions carrying 2 marks each.
- (iv) Section C contains 10 questions carrying 3 marks each.
- (v) Section D contains 8 questions carrying 4 marks each.

Section A : (01 mark each)

1. Write the additive inverse of $\frac{2}{-9}$.
2. Solve the equation $x + 3 = 10$.
3. How many sides a decagon have.
4. What is the probability of a impossible event?
5. What will be the unit digits of the squares of the number 313 ?
6. What is the class size of class interval 100-125.

Section B : (02 marks each)

7. Write rational numbers that are equal to their reciprocals.
8. Solve $\frac{8x-3}{3x} = 2$
9. Find the sum of interior angles regular polygon having
 - (i) 3 sides
 - (ii) 4 sides
10. When a die is thrown, list the outcomes of an event of getting composite number .
11. Find the square root of the number 6400 .
12. Find the cube root of 1728 by prime factorization.

Section C : (03 marks each)

13. Represent $\frac{-2}{11}, \frac{-5}{11}, \frac{-9}{11}$ on the number line .
14. Sum of two numbers is 110 . If one exceeds the other by 18 , find the numbers .
15. Construct a square having side 5 cm.
16. Construct a Rhombus BEND , BN = 5.6 cm and DE = 6.5 cm .
17. A gardener has 1000 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.
18. Find the square root of 144 by method of repeated subtraction .
19. Find the cube root of 3375.
20. Convert the ratios 1:5 to percentage .
21. 40% of 25 students are good in mathematics. How many are not good in mathematics ?
- 22 . The cost of an article was ₹ 15500, ₹ 450 were spent on its repairs. If it is sold for a profit o 15%, find the selling price of the article.

Section D : (04 marks each)

23. Multiply $\frac{6}{13}$ by reciprocal of $\frac{-7}{16}$
24. Solve the equation $7y + \frac{5}{3} = \frac{26}{3} - 2y$.
25. How many sides does a regular polygon have if the measure of exterior angle is 18° ?
26. Draw rectangle READ with RE=6 cm and RD=3 cm.
- 27 .Draw a pie chart showing the following information. The table shows the colours preferred by a group of people.

Colour	Blue	Green	Yellow	Red	Orange	Total
No. of People	40	12	9	7	4	72

28. A die is thrown once. Find the probability of getting
 - (i) A prime number
 - (ii) odd number
 - (iii) A number greater than 3
 - (iv) A number 8
29. Find the smallest number by which 1800 is multiplied to obtain a perfect cube .
30. The population of a place increased to 54000 in 2003 at the rate of 5%per annum. Find the population in 2001.

S.No	Answer	Marks
GROUP - A		
1	Additive inverse of $2/(-9) = 2/9$	1
2	$X = 7$	1
3	10 Sides .	1
4	"Probability of impossible event" = 0	1
5	9	1
6	Class- Size = $125 - 100 = 25$	1
GROUP - B		
7	Write rational numbers that are equal to their reciprocals.	2
8	$8x - 3 = 6x$, $8x - 6x = 3$, $2x = 3$, $x = 3/2$	2
9	the sum of the angles of $(n - 2)$ triangles = $180 \times (n - 2)$ (i) 3 sides = 180^* (ii) 4 sides = 360^*	2
10	the outcomes of an event of getting composite number are 4 & 6	2
11	square root of the number $6400 = \sqrt{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5} = 2 \times 2 \times 2 \times 2 \times 5 = 80$.	2
12	the cube root of $1728 = \sqrt[3]{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3} = 2 \times 2 \times 3$	2
GROUP - C		
13	Check your self.	3
14	Let the number be x. So, the other number is $(x + 18)$. $(x + 18) + x = 110$, $2x + 18 = 110$, $2x = 110 - 18$ $2x = 92$, $x = 46$ So, the numbers are 46 and 64.	3
15	Check your self.	3
16	Check your self.	3
17	If the number of rows and number of columns are to be equal, then the total number of trees will be in the form of x^2 , which is nothing but a perfect square. As 1000 is not a perfect square, we have to check for a perfect square above and nearest to 1000. It's 1024, which is square of 32. So he needs to add 24 more trees to get 1024. Check Method	3
18	$144 - 1 = 143$, $143 - 3 = 140$, $140 - 5 = 135$, $135 - 7 = 128$, $128 - 9 = 119$ $119 - 11 = 108$, $108 - 13 = 95$, $95 - 15 = 80$, $80 - 17 = 63$, $63 - 19 = 44$ $44 - 21 = 23$, $23 - 23 = 0$ $\sqrt{144} = 12$	3
19	$\sqrt[3]{3375} = \sqrt[3]{3 \times 3 \times 3 \times 5 \times 5 \times 5} = 15$	3
20	$1 : 5 = 1/5 = (1/5 \times 100) \% = 20 \%$	3
21	Good in Maths = 40% Of 25 = $40 \times 25 / 100 = 10$ Not Good in Maths = $25 - 10 = 15$	3
22.	Total Cost = $15500 + 450 = 19,950$. Profit in rupees = 15% of $19,950 = \text{Rs.} 2992.50$ Selling Price = $19,950 + 2992.50 = \text{Rs.} 22942.50$	3
GROUP - D		
23	Reciprocal of $\frac{-7}{16} = \frac{16}{-7}$. Now, $6/13 \times 16/-7 = -96/91$	4
24	$7y + \frac{5}{3} = \frac{26}{3}$ $-2y = 7y + 2y = \frac{26}{3} - \frac{5}{3}$, $9y = 21/3$, $9y = 7$ then, $Y = 7/9$	4
25	the sum of the exterior angles of a regular polygon is $=360^*$ so the No. of sides $=360 / \text{exterior angle} = 360/18=20$ Sides	4
26.	Check your self.	4
27.	Check your self.	4

28.	(i) the probability of getting a prime number = $\frac{3}{6} = 0.5$ (ii) the probability of getting odd number = $\frac{3}{6} = 0.5$ (iii) the probability of getting a number greater than 3 = $\frac{3}{6} = 0.5$ (iv) the probability of getting a number 8 = 0	4
29.	Check your self.	4
30.	Given , Population in 2003 = 54,000 , R = 5% , n = 2 years. Let, Population in 2001 = x $54,000 = x (1 + 5/100)^2$ $54,000 = x (21/20)^2$ $x = \frac{54,000 \times 20 \times 20}{21 \times 21}$, x = 48,979.59 , X = 48,980.	4