ST. XAVIER'S SENIOR SECONDARY SCHOOL, DELHI – 110 054

Class 8 Time: 2½ hrs.

16-9-2023 MID TERM EXAMINATION - **MATHEMATICS** Max. Marks : 60

General Instructions:

i) All questions are compulsory.
ii) Section A comprises of 10 MCQ questions and 5 fill in the blanks questions carrying one mark each.
iii) Section B comprises of 6 questions carrying two marks each.
iv) Section C comprises of 7 questions carrying three marks each.
v) Section D comprises of 3 questions carrying four marks each.

SECTION – A (1 x 15 = 15 marks)

1. Regular polygons are
   a) Equiangular b) Equilateral
   c) Isosceles d) Equilateral and equiangular

2. The property a + b = b + a is called
   a) commutative b) associative
   c) distributive d) none of the above

3. The value of x in the equation 4x + 4 = 20 is
   a) 4 b) 5 c) 2 d) 6

4. A graph that shows the relationship between a whole and its parts is a
   a) Bar Graph b) Circle Graph
   c) Histogram d) None of these

5. Cube of 3y is
   a) $3y^3$ b) $6y^2$ c) $9y^3$ d) $27y^3$

6. Which of the following is a perfect cube?
   a) 1331 b) 625 c) 121 d) 100

7. Smallest number by which 100 must be multiplied to get a perfect cube
   a) 4 b) 16 c) 10 d) 9

8. The value of $3^0 + 4^0 + 5^0$ =
   a) 9 b) 12 c) 3 d) 0

9. The total angle at the centre of a circle in a pie chart is
   a) 99° b) 180° c) 360° d) 270°

10. Rational numbers are not closed under
    a) Addition b) Subtraction c) Multiplication d) Division

FILL IN THE BLANKS:

11. The additive identity of rational numbers is _____.

12. Double bar graph shows _____ sets of data simultaneously.

13. Quadrilaterals whose diagonals are equal are _____ and _____.

14. _____ non perfect square numbers exist in between 45^2 and 46^2.

15. _____ is the cube of 19.

SECTION – B (2 × 6 = 12 marks)

16. Find the square root of 3136 by prime factorisation method.

17. Find the number of sides of a regular polygon whose exterior angle is 24^o.

18. Solve for x : 2x – 5 = 3(x + 5).

19. Find the value of $(\frac{1}{2})^{-2} + (\frac{1}{3})^{-2} + (\frac{1}{4})^{-2}$

20. Find the cube root of 3375.

21. Find the sum of $\frac{3}{7}$ and the multiplicative inverse of $\frac{-14}{3}$.

SECTION – C (3 × 7 = 21 marks)

22. Simplify : $\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$

23. Find the smallest number by which 10584 must be multiplied to get a perfect cube. Also find the cube root of the perfect cube number.

24. A gardener has 5400 plants. He wants to plant these in such a way that the number of rows and columns remain the same. Find the minimum number of plants he needs for this. Also find the number of rows and columns.

25. Numbers 1 to 10 are written on separate slips and mixed properly. One slip is picked up at random. Find the probability of
    a) Getting a prime number
    b) Getting a multiple of 4
    c) Getting an odd number

26. The measure of 2 adjacent angles of a parallelogram are in the ratio 3 : 2. Find the measure of each angle.

27. Solve for x : $\frac{2x}{3} + 1 = \frac{7x}{15} + 3$

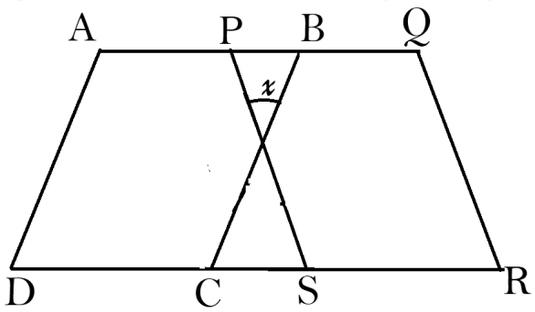
28. Use appropriate property and solve
    $\frac{2}{5} \times \left(\frac{-3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5}$ (OR) $\frac{2}{5} \times \frac{-3}{7} - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$

SECTION – D (4 x 3 = 12 marks)

29. Draw a pie chart for the following data:

FAVORITE FOOD	NO. OF PEOPLE
North Indian	30
South Indian	40
Chinese	15
Others	35

30. In the figure, ABCD and PQRS are two parallelograms.



If $\angle A = 100°, \angle R = 65°$, find the value of x.

31. Mention the property used in the following:
    a) $\frac{7}{5} \times \left(\frac{2}{3} + \frac{3}{5}\right) = \left(\frac{7}{5} \times \frac{2}{3}\right) + \left(\frac{7}{5} \times \frac{3}{5}\right)$
    b) $\frac{2}{5} + \left(3 + \frac{7}{5}\right) = (\frac{2}{5} + 3) + \frac{7}{5}$
    c) $\frac{8}{7} \times \frac{7}{8} = 1$
    d) $\frac{5}{8} \times \frac{7}{2} = \frac{7}{2} \times \frac{5}{8}$

-x-x-x-x-x-x-x-