

**Class : 8**Register  
Number**HALF YEARLY EXAMINATION - 2022-23**

Time Allowed : 2.30 Hours]

**MATHEMATICS**

[Max. Marks : 100

**PART - A****I. Choose the correct Answer.**

10x1=10

1.  $-\frac{5}{4}$  is a rational number which lies between -----  
 (A) 0 and  $-\frac{5}{4}$                       (B) -1 and 0                      (C) -1 and -2                      (D) -4 and -5
2. The square of 43 ends with the digit -----  
 (A) 9                      (B) 6                      (C) 4                      (D) 3
3. Length of the arc of the sector -----  
 (A)  $\frac{\theta}{360} \times \pi r^2$                       (B)  $\frac{lr}{2}$                       (C)  $\frac{\theta}{360} \times 2\pi r$                       (D)  $l + 2r$
4. A line segment which joins any two points on a circle is a -----  
 (A) chord                      (B) diameter                      (C) circumference                      (D) radius
5. The product of  $7P^3$  and  $(2P^2)^2$  is -----  
 (A)  $14p^{12}$                       (B)  $28p^7$                       (C)  $9p^7$                       (D)  $11p^{12}$
6. The largest number of the three consecutive numbers is  $x + 1$ , then the smallest number is -----  
 (A)  $x$                       (B)  $x + 1$                       (C)  $x + 2$                       (D)  $x - 1$
7. The single discount in % which is equivalent to two successive discounts of 20% and 25% is -----  
 (A) 40%                      (B) 45%                      (C) 5%                      (D) 22.5%
8. The number of conversion periods in a year, if the interest on a principal is compounded every two month is -----  
 (A) 2                      (B) 4                      (C) 6                      (D) 12
9. The point of concurrence of the three angle bisectors of a triangle is called as its -----  
 (A) incentre                      (B) Orthocentre                      (C) Circumcentre                      (D) Centroid
10. What is the eleventh Fibonacci number -----  
 (A) 55                      (B) 77                      (C) 89                      (D) 144

**II. Fill in the Blanks.**

5x1=5

11. The multiplicative inverse of - 1 is -----
12. The cross sector of a solid cylinder is -----
13. The linear equation in one variable has ----- solution.
14. X - axis and Y - axis intersect at -----
15. Depreciation value formula -----

**III. Say true or false.**

5x1=5

16. The average of two rational numbers lies between them
17. A cube has 4 faces
18.  $6xy + 3xy = 9x^2y^2$
19. In a right angled triangle, the hypotenuse is the greatest side.
20. 6 out comes can you get when you toss three coins once.

**IV. Match the following.**

5x1=5

- |                      |   |                  |
|----------------------|---|------------------|
| 21. $a^m \div a^n$   | - | twice its radius |
| 22. diameter         | - | 2 : 1            |
| 23. $y^2 - 10y + 25$ | - | Third quadrant   |
| 24. Centroid         | - | $(y - 5)^2$      |
| 25. (-3, -5)         | - | $a^{m-n}$        |

**PART - B****V. Answer any 10 of the following. (Q.No.40 Compulsory)**

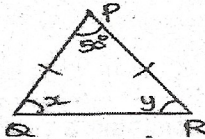
10x2=20

26. Write the decimal form of the following rational number  $\frac{13}{4}$

CH/8/Mat/1



27. Divide :  $\left(\frac{-21}{5}\right)$  by  $\left(\frac{-7}{-10}\right)$
28. Using long division method find the square root of 6889.
29. Evaluate :  $(2^{-1} + 3^{-1}) \div 6^{-2}$
30. A circle of radius 70 cm is divided into 5 equal sectors. Find the area of each of the sectors.
31. Find the product of the terms. i)  $-2 mn, (2m)^2, (-3 mn)$
32. Expand :  $4p^2 - 25q^2$
33. Factorise :  $m^2 + m - 72$
34. Solve :  $2x + 5 = 9$
35. 48 is 32% of which number?
36. Digital clock marked price ₹ 750 and selling price ₹ 615, then find the discount percentage?
37.  $p = ₹ 5000, r = 4\% \text{ p.a}, n = 2$  years then find the difference in C. I and S. I.
38. Find the unknowns in the following figure.

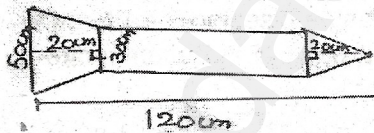


39. Can a right triangle have sides that measure 5 cm, 12 cm and 13 cm?
40. using repeated division method, find the HCF of the following 455 and 26.

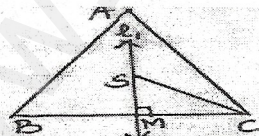
## PART - C

VI. Answer any Seven questions. (Q.No.50 Compulsory.)

41. Write the following rational numbers in ascending and descending order.  $\frac{-3}{5}, \frac{7}{-10}, \frac{-15}{20}, \frac{14}{-30}, \frac{-8}{15}$  7x5=35
42. Find the cube root of  $24 \times 36 \times 80 \times 25$
43. Find the central angle of the sectors whose measure are i) area =  $462 \text{ cm}^2, r = 21 \text{ cm}$  and  $(\pi = 22/7)$
44. A rocket drawing has the measures are given in the figure. Find its area



45. Expand :  $(2a + 5)^3$
46. 210 men working 12 hours a day can finish a job in 18 days. How many men are required to finish the job in 20 days working 14 hours a day?
47. A and B together can do a piece of work in 16 days and A alone can do it in 48 days. How long will B take to complete the work?
48. In triangle ABC, line  $l_1$  is a perpendicular bisector of BC. If  $BC = 12 \text{ cm}, SM = 8 \text{ cm}$  find CS.



49. Using repeated subtraction method, find the HCF of the following: 36 and 80
50. The sum of the three consecutive odd number is 75. Which is the largest among them?
- VII. Answer the following. 1x10=10
51. Construct a trapezium AIMS with  $\overline{AI} \parallel \overline{SM}, AI = 6 \text{ cm}, IM = 5 \text{ cm}, AM = 9 \text{ cm}$  and  $MS = 6.5 \text{ cm}$ . Also find its area

(OR)

52. Construct a Parallelogram BIRD with  $BI = 6.5 \text{ cm}, IR = 5 \text{ cm}$ , and  $\angle BIR = 70^\circ$ . Also find its area.

VIII. Answer the following.

1x10=10

53. Draw the graph of  $x = 5$

(OR)

54. Draw straight line by joining the points A (2,5) B (-5, -2) M (-5, 4) N (1, -2) also find the point of intersection.