Sivagangai District

S

COMMON HALF YEARLY EXAMINATION - 2024

Standard - VIII

Reg.No. | | | | | | |

Time: 2.30 hrs. **MATHEMATICS** *Marks:100*

PART - I

Choose the correct option: **14×1=14**

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 value of $\left(\frac{-15}{23}\right) \div \left(\frac{30}{-46}\right)$ is _____.

   a) -1 b) 1 c) 2 d) -2

3. The ones digit in the square of 77 is _____.

   a) 4 b) 9 c) 1 d) 8

4. If $\frac{10^x}{10^{-3}} = 10^9$ then x is _____.

   a) 4 b) 5 c) 6 d) 7

5. For $a \neq 0$, a^0 is _____.

   a) 0 b) -1 c) 1 d) a

6. A cube has _____ faces.

   a) 4 b) 2 c) 6 d) 8

7. The longest chord of a circle is _____.

   a) radius b) diameter c) circumference d) segment

8. If the area of a square is $36x^4y^2$ then its side is _____.

   a) $6x^4y^2$ b) $8x^2y^2$ c) $6x^2y$ d) $-6x^2y$

9. $a^3 + b^3 = (a + b)^3 -$ _____.

   a) 3a (a + b) b) 3ab (a - b) c) -3ab (a + b) d) 3ab (a + b)

10. Factors of $9x^2 + 6xy$ are

    a) 3y, (x + 2) b) 3x, (3x + 3y) c) 6x, (3x + 2y) d) 3x, (3x + 2y)

11. The largest number of three consecutive numbers is x + 1, then the smallest number is

    a) x b) x+1 c) x+2 d) x - 1

12. When 60 is subtracted from 60% of a number to give 60, then number is

    a) 60 b) 100 c) 150 d) 200

13. If $\Delta ABC \sim \Delta PQR$ in which $\angle A = 53^\circ$ and $\angle Q = 77^\circ$ the $\angle R$ is

    a) 50° b) 60° c) 70° d) 80°

14. Two similar triangles will always have _____ angles.

    a) acute b) obtuse c) right d) matching

PART - II

Answer any 10 questions: **10×2=20**

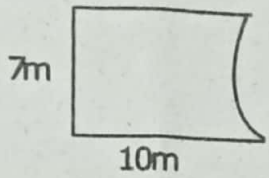
15. Compare the pairs of rational numbers : $\frac{2}{3}, \frac{4}{5}$
16. Find the sum : $\frac{7}{5}+\frac{3}{5}$
17. Evaluate : $\left(\frac{1}{2}\right)^3$
18. Write the number in Scientific notation : 467800000000
19. Expand using exponents : 6054.321
20. For the sector with given measures, find the length of the arc ($\pi = 3.14$) Central angle 45º, r = 16cm.
21. Verify Euler's formula for the given below : Faces = 4, Vertices = 4, Edges = 6
22. Multiply $3x^2y$ and $(2x^3y^3 - 5x^2y + 9xy)$
23. Divide : $12x^3y^2$ by x^2y
24. Expand $(3m + 5)^2$
25. Factorise : $4x^2y + 8xy$
26. Find x : $\frac{2x}{3} - 4 = \frac{10}{3}$
27. If x% of 600 is 450, then find the value.
28. Check whether given sides are the sides of the right angled triangle using Pythagoras theorem 8, 15, 17

PART - III

Answer any 10 questions: **10×5=50**

29. Arrange the following rational numbers in ascending and descending order.
$\frac{-5}{12}, \frac{-11}{8}, \frac{-15}{24}, \frac{-7}{-9}, \frac{12}{36}$
30. Subtract : $\frac{-8}{44}$ from $\frac{-17}{11}$
31. Simplify : $\left[\frac{4}{3} \div \left(\frac{8}{-7}\right)\right] - \left[\frac{3}{4} \times \frac{4}{3}\right] + \left[\frac{4}{3} \times \left(\frac{-1}{4}\right)\right]$
32. Find the square root of 324 by Prime factorisation.
33. Simplify : $\frac{9^2 \times 7^3 \times 2^5}{84^3}$
34. A circle of radius 70cm is divided into 5 equal sectors. Find the area of each of the sectors.

35. Find the perimeter and area of the following figure ($\pi = 22/7$)]



36. Simplify: $\frac{3m^2}{m} + \frac{2m^4}{m^3}$

37. Find the volume of the cube whose side is (x+1)cm.

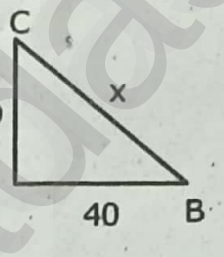
38. Factorise : $x^2 + 8x + 15$

39. Factorise the following expression using $(a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$ identify $64x^3 + 144x^2 + 108x + 27$

40. Find the difference in C.I and S.I for
    i) P = ₹5,000, r = 4% p.a. n = 2 years
    ii) P = ₹8,000, r = 5% p.a. n = 3 years

41. 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?

42. Find the unknown side in the triangle.



PART - IV

Answer all the questions: **2×8=16**

43. Construct the quadrilateral with the given measurement and also find area. ABCD, AB = 5cm, BC = 4.5cm, CD = 3.8cm, DA = 4.4cm and AC = 6.2cm.

(OR)

Construct a rhombus ROSE with RO = 5cm, and RS = 8cm. Also find its area.

44. Plot the follwoing points in a graph sheet A(5, 2), B(-7, -3), C(-2, 4), D (-1, -1), E(0, -5), F(2, 0), G(7, -4), H (-4, 0)

(OR)

Plot the following points in a graph sheet.
A(0,0), B(0, 8), C(3, 0), D(-5, 5), E(5, -5), F(-3, 8), G(8, -3), H(1, 1)
