HALF YEARLY EXAMINATION -2025

8 Std **MATHEMATICS** Reg No. 18

Time : 2.30 HR MARKS: 100

Instructions:

- Write clearly and legibly without mistakes and overwriting utilising the maximum time allotted for the exam
- Answers should be in your own style without changing the main core concept.
- Use only black or blue ink pen to write the exam.
- Draw clear diagrams wherever necessary.

PART - I

I Choose the correct answer. **5 X 1 =5**

1. Which of the following rational numbers is the greatest?

   a) $\frac{-17}{24}$ b) $\frac{-13}{16}$ c) $\frac{7}{-8}$ d) $\frac{-31}{32}$

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

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

3. 12% of 250 litre is the same as _____ of 150 litre.

   a) 10% b) 15% c) 20 % d) 30 %

4. The hypotenuse of a right angled triangle of sides 12 cm and 16cm is _____

   a) 28 cm b) 20 cm c) 24 cm d) 21 cm

5. How many 2 digit numbers contain the number 7 ?

   a) 10 b) 18 c) 19 d) 20

II Fill in the blanks with correct answer: **5x1=5**

6. The next rational number in the sequence $\frac{-15}{24}, \frac{20}{-32}, \frac{-25}{40}$ is _____
7. The longest chord of a circle is _____.
8. The value of x in the equation x+5=12 is _____
9. Loss or gain percentage is always calculated on the _____
10. The centroid of a triangle divides each medians in the ratio _____

III Say True / False of the following: **5x1=5**

11. The average of two rational numbers lies between them.
12. A cube has 8 faces.
13. Linear equation in one variable has only one variable with power 2.
14. Depreciation value is calculated by the formula, $P(1 - r/100)^n$.
15. Two numbers are said to be co-prime numbers if their HCF is 1.

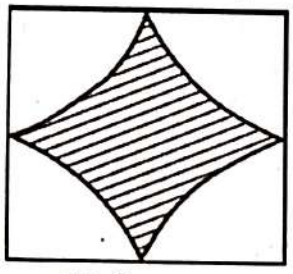
IV Match the following: **5x1=5**

16. $a^m \times a^n$	-	$\frac{\theta^0}{360^0} \times \pi r^2$
17. Area of the sector	-	$(x+4)(x-5)$
18. $x^2 - x - 20$	-	a^{m+n}
19. The eleventh fibonacci number	-	Hypotenuse
20. The greatest side of a right angled triangle	-	89

PART - II

V Answer any ten questions. **10x2=20**

21. Find a rational number between. $\frac{1}{3}$ *and* $\frac{5}{9}$
22. Find the square root of 324 by prime factorisation
23. Find the value of : (i) 4^{-3} ii) $\frac{1}{2^{-3}}$
24. Find the cube root of 27000.
25. The radius of a sector is 21 cm and its central angle is 120^0. Find the length of the arc.
26. Find the area of the shaded part in the following figure ($\pi = 3.14$).



27. If l = 4 Pq2, b= $-3P^2q$, h=$2P^3q^3$ then, find the value of lxbxh
28. Expand $(3m+5)^2$
29. Solve 2x+5=9

30. Akila scored 80 % of marks in an examination. If her score was 576 marks, then find the maximum marks of the examination.

31. If the selling price of 10 rulers is the same as the cost price of 15 rulers, then find the profit percentage.

32. If 48 men working 7 hours a day can do a work in 24 days, then in how many days will 28 men working 8 hours a day can complete the same work?

33. Can a right triangles have sides that measure 5 cm, 12 cm and 13 cm?

34. Using repeated subtraction method, find the HCF of the following : 42 and 70

PART - III

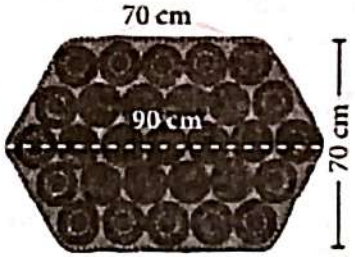
VI Answer any eight of the following questions. **8x5=40**

35. Simplify $\left[\frac{11}{8} X \left(\frac{-6}{33}\right)\right] + \left[\frac{1}{3} + \left(\frac{3}{5} \div \frac{9}{20}\right)\right] - \left[\frac{4}{7} X \frac{-7}{5}\right]$

36. Find the Square root of 459684 by long division method.

37. Kamalesh has a dining table, circular in shape of radius 70 cm whereas Tharun has a circular quadrant dining table of radius 140 cm. Whose dining table has a greater area? $(\pi = \frac{22}{7})$

38. The door mat which is hexagonal in shape has the following measures as given in the figure



Find its area

39. A Car moves at a uniform speed of (x+30) km/hr.Find the distance covered by the car in (y+2) hours. (Hint : distance = speed x time)

40. Expand (x+3) (x+2) (x+5)

41. The sum of two numbers is 36 and one number exceeds another by 8. Find the numbers.

42. By selling a speaker for ₹ 768, a man loses 20 % In order to gain 20 %, how much should he sell the speaker?

43. Find the C.I for the data given below : Principal = ₹ 4000, r=5% P.a, n=2 years, interest compounded annually.

44. A cement factory makes 7000 cement bags in 12 days with the help of 36 machines. How many bags can be made in 18 days using 24 machines?

45. In Δ ABC, S is the circumcentre, BC=72 cm. Find the radius of its circumcircle.

46. Using repeated division method, find the HCF of the following : 455 and 26

PART - IV

VII Answer all the Questions. **2x10=20**

47. Construct a quadrilateral DEAR with DE = 6cm, EA=5cm, AR=5.5 cm, RD=5.2 cm and DA=10cm. Also find its area.

[OR]

Construct a Parallelogram ARTS with AR = 6 cm, RT = 5 cm and ∠ART =700. Also find its area

48. Plotting the following points on a graph sheet.

(3, -4) , (5, 7), (2, 0), (-3, -5), (4, -3), (-7, 2), (-8, 0), (0, 10), (5, 2), (-1, -1)

[OR]

Draw the straight line by joining the points.

A (-2, 6) and B(-5, -2)