

US-MC

8M-HEC

**Half Yearly Examination - 2023**

Standard VIII

**MATHEMATICS**

Time 2 30 hrs

Maximum Marks 100

**PART - A****I. Choose the correct answer:**

5x1=5

1.  $\sqrt{48}$  is appropriately equal to .....
  - a) 5
  - b) 6
  - c) 7
  - d) 8
2. The part of circumference of a circle is called as .....
  - a) sector
  - b) circular arc
  - c) diameter
  - d) chord
3.  $(x + 4)$  and  $(x - 5)$  are the factors of .....
  - a)  $x^2 - x + 20$
  - b)  $x^2 - 9x - 20$
  - c)  $x^2 + x - 20$
  - d)  $x^2 - x - 20$
4. 2 minutes is .....% to an hour.
  - a) 4%
  - b)  $1\frac{1}{5}\%$
  - c)  $3\frac{1}{3}\%$
  - d)  $8\frac{2}{7}\%$
5. Two similar triangles will always have ..... angles.
  - a) acute
  - b) obtuse
  - c) right
  - d) matching

**II. Fill in the blanks:**

5x1=5

6. The sum of three angles of a triangle is .....
7. Loss or gain percentage is always calculated on the .....
8.  $6xy \times \dots = -12x^3y$
9. A cube has ..... faces.
10.  $4^{-3} \times 5^{-3} = \dots$

**III. Write True or False:**

5x1=5

11. Using the power rule,  $(3^7)^{-2} = 3^5$ .
12. The longest chord of a circle is diameter.
13.  $7p^3 \times 2p^2 = 14p^6$
14. When the S.P is less than the C.P., then there is a profit.
15. The centroid of a triangle divides each medians in the ratio 2 : 1.



Shot on Y12  
Vivo AI camera

2023.12.18 19:25

Kindly send me your answer keys to us - padasalai.net@gmail.com

## US-MC

2

## 8M-HEC

5x1=5

IV. Match the following:

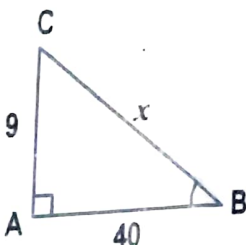
16.  $(+20) = 6x - 4$  -  $\frac{11}{17}$
17.  $7x - 4 - 8x = 20$  -  $-12x^3$
18. Additive inverse  $-\frac{11}{17}$  - 2
19.  $\frac{7}{5} + \frac{3}{5}$  -  $x = -24$
20.  $(4x^2) \times (-3x)$  -  $x = 4$

## PART - B

12x2=24

V. Answer any twelve of the following questions:

21. Is 108 a perfect square number?
22. Evaluate:  $\left(\frac{1}{2}\right)^{-5}$
23. A circular shaped gymnasium ring of radius 35 cm is divided into 5 equal arcs shaded with different colours. Find the length of the each of the arcs.
24. Expand:  $5x(2y-3)$
25. Simplify:  $\frac{3m^2}{m} + \frac{2m^4}{m^3}$
26. If x% of 600 is 450, then find the value of x.
27. 48 is 32% of which number?
28. Find the unknown side in the following triangle.



## US-MC

## 8M-HEC

Q9 Find the unknown in the following figure



Q10 Check whether the given sides 12, 13, 15 are the sides of right-angled triangles, using pythagoras theorem

Q11 Solve  $x - 7 = 6$

Q12 Expand:  $(4x)^2$

Q13 Find the square root of 784 by prime factorisation method.

Q14 Verify the commutative property for addition and multiplication for the rational numbers

$$\frac{10}{11} \text{ and } \frac{-8}{33}$$

Q15 Factorise:  $x^2 + 14x + 49$

Q16 If selling an article for ₹820 causes 10% loss on the selling price, then find its cost price.

## PART - C

VI. Answer any eight of the following questions:

8x5=40

Q17 Arrange the following rational numbers in ascending and descending order.

$$-\frac{5}{12}, -\frac{11}{8}, -\frac{15}{24}, -\frac{7}{9}, \frac{12}{36}$$

Q18 Find the length of a room whose area is  $\frac{153}{10}$  sq.m. and whose breadth is  $2\frac{11}{20}$  m.

Q19 The radius of the sector is 16 cm and its central angle is  $45^\circ$ . Find the length of the arc, area and perimeter ( $\pi = 3.14$ )

Q20 Find the area of the house drawing given in the figure.



US-MC

8M-HEC

4

41. The sum of three consecutive odd numbers is 75. Which is the largest among them?
42. If a mattress is marked for ₹7500 and is available at two successive discounts of 10% and 20%. Find the amount to be paid by the customer.
43. If 32 men working 12 hours a day can do a work in 15 days, then how many men working 10 hours a day can do double that work in 24 days?
44.  $I$  is the incentre of  $\triangle XYZ$ ,  $\angle YZ = 30^\circ$  and  $\angle IZY = 40^\circ$ , find  $\angle YXZ$ .



45. The diagonals of the rhombus is 12 cm and 16 cm. Find its perimeter.  
(Hint: the diagonals of rhombus bisect each other at right angles)
46. Find the difference between C.I and S.I on ₹5,000 for 1 year at 2% p.a, if the interest is compounded half yearly.
47. The length of a rectangle is  $\frac{1}{3}$  of its breadth. If its perimeter is 64 m, then find the length and breadth of the rectangle.
48. a) Multiply:  $(4x^2 + 9)$  and  $(3x - 2)$   
b) Divide:  $(32y^2 - 8yz)$  by  $2y$ .

## PART - D

VII. Answer the following questions:

2x8=16

49. a) Construct a parallelogram of GAIN with  $GA = 7.5$  cm, and  $GI = 9$  cm and  $\angle GAI = 100^\circ$ .  
(OR)  
b) Construct the rhombus PARK with  $PR = 9$  cm and  $\angle P = 70^\circ$
50. a) Plot the following points in a graph sheet.  
 $A(5, 2)$ ,  $B(-7, 3)$ ,  $C(-2, 4)$ ,  $D(2, 0)$ ,  $E(2, 3)$ ,  $F(0, 7)$   
(OR)  
b) Plot the following points in a graph sheet.  
 $L(4, 3)$ ,  $M(-4, 5)$ ,  $N(-3, -6)$ ,  $O(5, -2)$ ,  $P(6, 0)$ ,  $Q(0, -5)$