COMMON HALF YEARLY EXAMINATION - 2024

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Standard VIII   Reg No.

MATHEMATICS

Time : 2.30 hrs   Part - A   Marks : 100

I. **Choose the correct answer:** $10 \times 1 = 10$

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. $\left(\frac{3}{4} - \frac{5}{8}\right) + \frac{1}{2} = $ _____.

   a) $\frac{15}{64}$ b) 1   c) $\frac{5}{8}$ d) $\frac{1}{16}$

3. _____ is added to 24^2 to get 25^2

   a) 4^2 b) 5^2 c) 6^2 d) 7^2

4. The missing terms in the product $-3m^3n \times 9(\_\_\_\_) = \_\_\_\_ m^4n^3$ are

   a) $mn^2, 27$ b) $m^2n, 27$ c) $m^2n^2, -27$ d) $mn^2, -27$

5. The factors of $1 - m^3$

   a) $(1 + m), (1 + m + m^2)$ b) $(1 - m), (1 - m - m^2)$

   c) $(1 - m), (1 + m + m^2)$ d) $(1 + m), (1 - m + m^2)$

6. Sum of a number and its half is 30, then the number is _____.

   a) 15   b) 20   c) 25   d) 40

7. 15% of 25% of 10000 = _____.

   a) 375   b) 400   c) 425   d) 475

8. The sum which amounts to ₹2662 at 10% p.a. in 3 years compounded yearly is _____.

   a) ₹2000   b) ₹1800   c) ₹1500   d) ₹2500

9. In $\triangle ABC \sim \triangle PQR$ in which $\angle A = 53^\circ$ and $\angle Q = 77^\circ$, then $\angle R$ is

   a) 50° b) 60° c) 70° d) 80°

10. What is the eleventh Fibonacci number?

    a) 55   b) 77   c) 89   d) 144

II. **Fill in the blanks.** $4 \times 1 = 4$

11. The rational number _____ does not have a reciprocal.

12. The three dimensions of a cuboid are _____ and _____.

13. The value of m in the equation 8m = 56 is _____.

14. The symbol $\equiv$ is used to represent _____ triangles.

III. Say True or False.   5 x 1 = 5

15. 0 is the smallest rational number.

16. The standard form of 2×10^{-4} is 0.0002

17. $7ab^3 \div 14ab = 2b^2$

18. Depreciation value is calculated by the formula $P = \left(1 - \dfrac{r}{100}\right)^n$

19. 8, 15, 17 is a Pythagorean triplet.

IV. Match the following.   5 x 1 = 5

20. Area of the sector of a circle   - πr^2

21. Area of a parallelogram   - $\dfrac{1}{2} \times d \times (h_1 + h_2)$

22. Area of a circle   - $\dfrac{1}{2} \times d_1 \times d_2$

23. Area of a rhombus   - bh

24. Area of a quadrilateral   - $\dfrac{\theta}{360^\circ} \times \pi r^2$

Part - B

V. Answer any 10 questions. (Q.No.38 is compulsory)   10 x 2 = 20

25. Subtract : $\dfrac{-8}{44}$ from $\dfrac{-17}{11}$

26. Find the square root by Prime factorisation method : 256

27. Evaluate : $\left(\dfrac{1}{2}\right)^3$

28. Find the area of the sectors whose length of the arc is 48 m and radius is 10 m.

29. If the length and breadth of a rectangular painting are $4xy^3$ and $3x^2y$. Find its area.

30. Expand : $y^2 - 16$

31. Factorise : $C^2 - 4C - 12$

32. If x% of 600 is 450, then find the value of x.

33. Find the difference in C.I and S.I on ₹5000 for 2 years at 4% p.a.

34. A family went to a hotel and spent ₹350 for food and paid extra 5% as GST. Calculate the CGST and SGST.

35. Can a right triangle have sides that measure 5 cm, 12 cm and 13 cm ?

36. Shanthi has 5 chudithar sets and 4 frocks. In how many possible ways, can she wear either a chudithar or a frock?

37. Using repeated subtraction method, find the HCF of 42 and 70

38. a) Find the area of a rhombus whose diagonals are d_1 = 6 cm and d_2 = 8 cm

   (OR)

   b) Solve : $2x + 5 = 9$

   Part - C

VI. **Answer any 8 questions. (Q.No.50 is compulsory)**   **8 x 5 = 40**
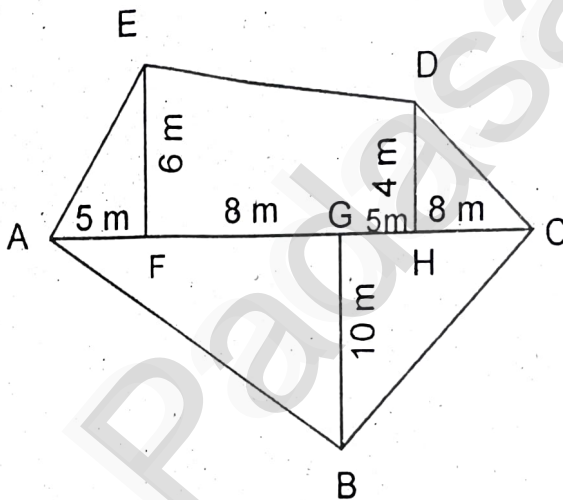
39. Arrange the following rational numbers in ascending and descending order.

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

40. Simplify : $\dfrac{9^2 \times 7^3 \times 2^5}{84^3}$

41. Find the central angle of the sector whose area is 462 cm² and radius is 21 cm

42. Find the area of an irregular polygon field whose measures are as given in figure.

43. Find the volume of the cuboid whose dimensions are (x + 2), (x − 1) and (x − 3)

44. Factorise $27p^3 + 54p^2q + 36pq^2 + 8q^3$ using $(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$ identity.

45. The length of a rectangular field exceeds its breadth by 9 metres. If the perimeter of the field is 154 m, find the length and breadth of the field.

46. By selling a bicycle for ₹4275, a shopkeeper loses 5%. For how much should he sell it to have a profit of 5%?

47. 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?

4   VIII **Maths**

48. Find LM, MN, LN and also the area of △LON
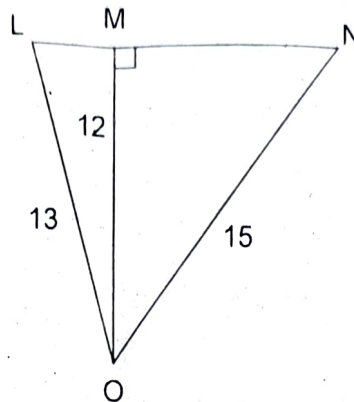
49. Using repeated division method, find the HCF of 184, 230 and 276

50. a) If a car is sold for ₹200000 from its original price of ₹300000, then find the percentage of decrease in the value of the car.

(OR)

b) Find the value of $(103)^3$

Part - D

VII. **Answer the following.**

                                                         2 x 8 = 16

51. a) Construct a quadrilateral MATH with MA = 4 cm, AT = 3.6 cm, TH = 4.5 cm, MH = 5 cm and $\angle A = 85°$. Also find its area.

(OR)

b) Construct a rhombus PARK, PR = 9 cm and $\angle P = 70°$. Find its area.

52. a) Plot the following in a graph sheet.

A(5, 2), B(−7, −3), C(−2, 4), D(0, −5), E(4, 0)

(OR)

b) Draw the graph of y = −3x

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