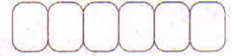**Tsi8M**

Tenkasi District
Common Half Yearly Examination - December 2025

Standard 8

MATHEMATICS

Time: 2.30 Hrs.   Marks: 100

I. Choose the correct answer: 9×1=9

1) The sum of the digits of the denominator in the simplest form of $\frac{112}{528}$ is _____.
   a) 4   b) 5   c) 6   d) 7

2) The square of 43 ends with the digit _____.
   a) 9   b) 6   c) 4   d) 3

3) The product of $7p^3$ and $(2p^2)^2$ is
   a) $14p^{12}$ b) $28p^7$ c) $9p^7$ d) $11p^{12}$

4) Factors of $9x^2+6xy$ are
   a) $3y, (x+2)$ b) $3x, (3x+3y)$ c) $6x, (3x+2y)$ d) $3x, (3x+2y)$

5) 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

6) 12% of 250 litre is the same as _____ of 150 litre.
   a) 10%   b) 15%   c) 20%   d) 30%

7) A fruit vendor sells fruits for ₹ 200 gaining ₹ 40. His gain percentage is
   a) 20%   b) 22%   c) 25%   d) $16\frac{2}{3}\%$

8) The area of a rectangle of length 21 cm and diagonal 29 cm is _____.
   a) 609 cm^2 b) 580 cm^2 c) 420 cm^2 d) 210 cm^2

9) Every 3rd number of the Fibonacci sequence is a multiple of _____.
   a) 2   b) 3   c) 5   d) 8

II. Fill in the blanks: 5×1=5

10) For a ≠ 0, a^0 is _____.

11) The radius of a circle of diameter 24 cm is _____.

12) The value of p in the equation $\frac{2p}{3} = 10$ is _____.

13) 2 minutes is _____% to an hour.

14) The symbol ~ is used to represent _____ triangles.

III. Say True or False: 5×1=5

15) There are an unlimited number of rational numbers between 10 and 11.

16) The square of 75 is 4925.

17) The Co-ordinates of the origin are (1, 1).

18) In a right angled triangle, the hypotenuse is the greatest side.

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

IV. Match the following: 5×1=5

20) $\frac{a^m}{a^n}$ - $4x^2-9$

21) Circumference of semicircle   -   x = 20

22) $(2x+3)(2x-3)$ -   Marked price – Selling price

23) $\frac{x}{2} = 10$ - a^{m-n}

24) Discount   - $(\pi+2)r$

V. Answer any 10 of the following: 10×2=20

25) Find the sum: $\frac{7}{5} + \frac{5}{7}$

26) Simplify: $\sqrt{1\frac{9}{16}}$

27) Find x so that $(-7)^{x+2} \times (-7)^5 = (-7)^{10}$.
28) The radius of a sector is 21 cm and its central angle is 120°. Find the length of the arc.
29) Expand: 5x(2y−3)
30) Find the value of $(3a+4c)^2$ by using $(a+b)^2$ identity.
31) If x% of 600 is 450, then find the value of x.
32) The value of a motor cycle 2 years ago was ₹ 70,000. It depreciates at the rate of 4% p.a. Find its present value.
33) Can a right triangle have sides that measures 8 cm, 15 cm and 17 cm?
34) Using repeated subtraction method, find the HCF of 36 and 80.
35) Find the square root of 324 by prime factorisation.
36) Factorise: $y^2-10y+25$

VI. Answer any 8 of the following: 8×5=40

37) Write the following rational numbers in ascending and descending order:
$$\frac{-3}{5}, \frac{7}{-10}, \frac{-15}{20}, \frac{14}{-30}, \frac{-8}{15}$$

38) Find the square root by long division method: 11025
39) Find the area of an irregular polygon field whose measures are as given in the figure.
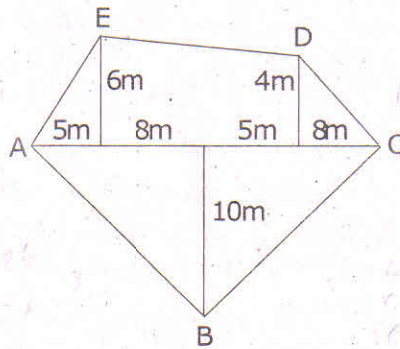
40) Find the area of the combined figure given, formed by joining a semicircle of diameter 6 cm with a triangle of base 6 cm and height 9 cm. (π = 3.14)
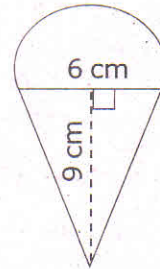
41) Find the value of $(103)^3$.
42) Multiply $3x^2y$ and $(2x^3y^3-5x^2y+9xy)$.
43) By selling a bicycle for ₹ 4,275, a shopkeeper loses 5%, for how much should be sell it to have a profit of 5%?
44) The population of a town is increasing at the rate of 6% p.a. It was 238765 in the year 2018. Find the population in the year 2016 and 2020.

45) △ABC is equilateral and CD of the right triangle BCD is 8 cm. Find the side of the, equilateral △ABC and also BD.
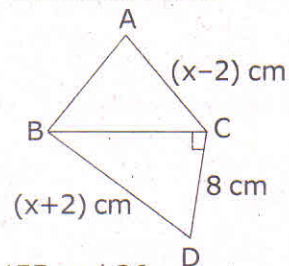
46) Using repeated division method, find the HCF of 455 and 26.

VII. Answer the following: 2×8=16

47) Construct a quadrilateral ABCD with AB = 7 cm, AD = 5 cm, CD = 5 cm, ∠BAC = 50° and ∠ABC = 60°. Also find its area. **(OR)**
Construct a parallelogram BEAR with BE = 7 cm, BA = 7.5 cm and ∠BEA = 80°. Also find its area.
48) Plotting the given points on a graph
(4, 3), (−4, 5), (−3, −6), (5, −2), (6, 0), (0, −5) **(OR)**
Draw a straight line by joining the points A(−2, 6) and B(4, −3).