

Tsi8M

**Tenkasi District**  
**Common Half Yearly Examination - December 2023**

**Standard 8****MATHEMATICS**

Time: 2.30 Hrs.

Marks: 100

**PART - A****I. Choose the correct answer:****5×1=5**

- 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) Factors of  $4-m^2$  are \_\_\_\_\_.  
 a)  $(2+m)(2+m)$       b)  $(2-m)(2-m)$       c)  $(2+m)(2-m)$       d)  $(4+m)(4-m)$
- 3) The number of conversion periods in a year, if the interest on a principal is compounded every two months is \_\_\_\_\_.  
 a) 2      b) 4      c) 6      d) 12
- 4) If  $\triangle ABC \sim \triangle PQR$  in which  $\angle A = 53^\circ$  and  $\angle Q = 77^\circ$ , then  $\angle R$  is \_\_\_\_\_.  
 a)  $50^\circ$       b)  $60^\circ$       c)  $70^\circ$       d)  $80^\circ$
- 5) How many 2 digit numbers contain the number 7?  
 a) 10      b) 18      c) 19      d) 20

**II. Fill in the blanks:****5×1=5**

- 6) The number of perfect square numbers between 300 and 500 is \_\_\_\_\_.
- 7) The meeting point of more than two edges in a polyhedron is called as \_\_\_\_\_.
- 8) The value of y in the equation  $y-9 = (-5)+7$  is \_\_\_\_\_.
- 9) 0.5252 is \_\_\_\_\_%.
- 10) If  $l$  and  $m$  are the legs and 'n' is the hypotenuse of a right angled triangle then  $l^2 =$  \_\_\_\_\_.

**III. Say True or False:****5×1=5**

- 11) The standard form of  $2 \times 10^{-4}$  is 0.0002.
- 12)  $8x^3y \div 4x^2 = 2xy$
- 13) The time taken for ₹ 1,000 to become ₹ 1,331 at 20% p.a., compounded annually is 3 years.
- 14) In any triangle, the centroid and the incentre are located inside the triangle.
- 15) Every 3<sup>rd</sup> number of the Fibonacci sequence is a multiple of 2.

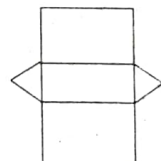
**IV. Match the following:****5×1=5**

- 16) Area of quadrilateral -  $a^2-2ab+b^2$
- 17) Area of parallelogram -  $(a+b)(a-b)$
- 18)  $(a+b)^2$  -  $b \times h$  sq.units
- 19)  $(a-b)^2$  -  $\frac{1}{2} \times d \times (h_1 + h_2)$  sq.units
- 20)  $a^2-b^2$  -  $a^2+2ab+b^2$

**PART - B****V. Answer any 12 questions:****12×2=24**

- 21) Write the decimal form of the rational number  $\frac{1}{3}$ .
- 22) Find the least number by which 250 is to be multiplied (or) divided so that the resulting number is a perfect square.
- 23) Expand using exponents 6054.321.
- 24) Length of the arc = 50 cm, and radius = 13.5 cm. Find the area of the sector.

25) Which 3-D shape do the following set represent? Draw it.



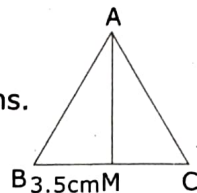
- 26) Divide:  $(32y^2-8yz) \div 2y$
- 27) Expand:  $4p^2-25q^2$
- 28) Solve:  $2x+5 = 9$
- 29) If a car is sold for ₹ 2,00,000 from its original price of ₹ 3,00,000, then find the percentage of decrease in the value of the car.

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- 30) A family went to a hotel and spent ₹ 350 for food and paid extra 5% as GST. Calculate the CGST and SGST.
- 31) Can a right triangle have sides that measure 5 cm, 12 cm and 13 cm?

- 32) In the figure, ABC is a triangle and AM is one of its medians. If  $BM = 3.5$  cm. Find the length of the side BC.



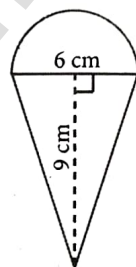
- 33) Shanthy has 5 chudithar sets and 4 frocks. In how many possible ways, can she wear either a chudithar or a frock?
- 34) Using repeated subtraction method, find the HCF of 42 and 70.

**PART - C****VI. Answer any 8 questions:****8×5=40**

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

36) Evaluate: (i)  $\sqrt[3]{\frac{9261}{8000}}$  (ii)  $\sqrt[3]{\frac{1728}{729}}$

- 37) 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. ( $\pi = 3.14$ )

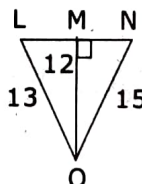


- 38) Using Euler's formula, find the unknowns.

S.No.	Faces	Vertices	Edges
1.	?	6	14
2.	8	?	10
3.	20	10	?

- 39) Factorise: (i)  $x^2 + 8x + 16$  (ii)  $49x^2 - 64y^2$
- 40) Mother is five times as old as her daughter. After 2 years, the mother will be four times as old as her daughter. What are their present ages?
- 41) If a mattress is marked for ₹ 7,500 and is available at two successive discounts of 10% and 20%, find the amount to be paid by the customer.
- 42) P and Q can do a piece of work in 12 days and 15 days respectively. P started the work alone and then after 3 days, Q joined him till the work was completed. How long did the work last?

- 43) Find LM, MN, LN and also the area of  $\triangle LON$ .



- 44) Using repeated division method, find the HCF of 184, 230 and 276.

**PART - D****VII. Answer the following:****2×8=16**

- 45) a) Construct a quadrilateral PQRS with  $PQ = QR = 3.5$  cm,  $RS = 5.2$  cm,  $SP = 5.3$  cm and  $\angle Q = 120^\circ$ . (OR)
- b) Construct a parallelogram CALF with  $CA = 7$  cm,  $CF = 6$  cm and  $AF = 10$  cm. Also find its area.
- 46) a) Draw the graph of  $x = 5$ . (OR)
- b) A line passes through (6, 0) and (0, 6) and another line passes through (-3, 0) and (0, -3). What are the points to be joined to get a trapezium?