VNR8M

Virudhunagar District
Common Annual Examination - 2024

Standard 8
MATHS

Time: 2.30 Hours   Marks: 100

I. Choose the correct answer: 5x1=5

1) Which of the following pairs is equivalent?
   a) $\dfrac{-20}{12}, \dfrac{5}{3}$ b) $\dfrac{16}{-30}, \dfrac{-8}{15}$ c) $\dfrac{-18}{36}, \dfrac{-20}{44}$ d) $\dfrac{7}{-5}, \dfrac{-5}{7}$

2) If the area of a square is $36x^4y^2$ then, its side is ....
   a) $6x^4y^2$ b) $8x^2y^2$ c) $6x^2y$ d) $-6x^2y$

3) 15% of 25% of 10000 = ...
   a) 375   b) 400   c) 425   d) 475

4) The hypotenuse of a right angled triangle of sides 12cm and 16cm is ....
   a) 28cm   b) 20 cm   c) 24 cm   d) 21 cm

5) Inclusive series is a .... series.
   a) continuous   b) discontinuous
   c) both   d) None the these

II. Fill in the blanks: 5x1=5

6) The longest Chord of a circle is ....
7) The value of x in the equation $x + 5 = 12$ is ....
8) The range of the data 200, 15, 20, 103, 3, 196 is ....
9) The centroid of a triangle divides each medians in the ratio ....
10) $(-1)^{\text{even integer}}$ is ....

III. Say True or False: 4x1=4

11) Linear equation in one variable has only one variable with power 2 ....
12) Depreciation value is calculated by the formula, $P\left(1 - \dfrac{r}{100}\right)^n$ ....
13) The centroid, Orthocentre, and incentre of a triangle are Collinear ....
14) Media and business people use pie charts ....

IV. Match the following: 5x1=5

15) $(2x + 3)(2x - 3)$ -   1
16) $-2xy(5x^2 - 3)$ -   Third Quadrant
17) $5^o \times 3^o$ - $4x^2 - 9$
18) $(-3, -2)$ - $\frac{1}{2} \times d \times (h_1 + h_2)$
19) Area of Quadrilateral   - $10x^3y + 6xy$

V. Answer the following (any 10):   2x10=20

20) The product of two rational numbers is $\dfrac{-2}{3}$. If one number is $\dfrac{3}{7}$, then find the other.
21) A circle of radius 70cm is divided into 5 equal sectors. Find the area of each of the sectors.
22) Divide $(5y^3 - 25y^2 + 8y)$ by $5y$
23) Factorise $x^2 + 8x + 15$
24) Find the compound interest on Rs.3200 at 2.5% p.a, for 2 years, compounded annually.

25) *Find the unknown side in the following triangle*
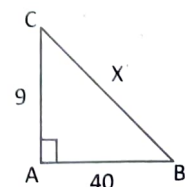
26) Represent the following data in ungrouped frequency table which gives the number of children in 25 families.
    1, 3, 0, 2, 5, 2, 3, 4, 1, 0, 5, 4, 3, 1, 3, 2, 5, 2, 1, 1, 2, 6, 2, 1, 4
27) If you have 2 school bags and 3 water bottles then, in how many different ways can you choose each one of them, while going to school?
28) Frame Additive cipher table (key = 4)

29) Find x so that $(-7)^{x+2} \times (-7)^5 = (-7)^{10}$.

30) Verify Euler's formula for vertices = 6, Faces = 20, Edges = 12.

31) The price of a rain coat was slashed from Rs.1060 to Rs.901 by a shopkeeper in the rainy season to boost the sales. Find the rate of discount given by him.

32) Using repeated division method, find H.C.F of 6765 and 610

33) Find the value of 998^2 by using $(a-b)^2$ identity.

VI. Answer the following: 9x5=45

34) Find the square root by long division method. 418609

35) *A rocket drawing has the measures as given in the figure. Find its area.*
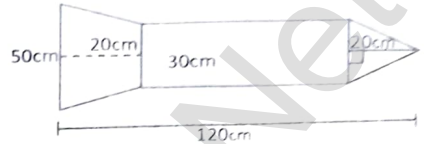
36) If a train runs at 60km/hr it reaches its destination late by 15 minutes. But if it runs at 85kmph it is late by only 4 minutes. Find the distance covered by the train.

37) If 6 container lorries can transport 135 tonnes of goods in 5 days, how many more lorries are required to transport 180 tonnes of goods in 4 days?

38) Draw a suitable pie chart for cast of construction of a house.

Particulars	Bricks	steal	cement	Timber	Labour	other
Expenses	10%	15%	25%	10%	20%	20%

39) **Draw a frequency polygon for the following data using histogram.**

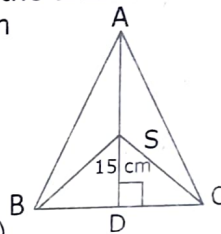| Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of.students	5	8	10	18	25	22	20

40) Using repeated subtraction method, find the H.C.F. of 184, 230, and 276

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

42) From the measures given below, find the area of the sectors, length of arc = 48 m, r = 10 m

43) *In △ABC,*
S is the circumcentre,
BC = 72 cm
DS = 15 cm.
Find the radius of its circumcircle.

44) Find the product of (i) $(2x +3)(2x - 4)$
(ii) $3(x^2 - 5) \times 2(x^2 - 1)$

45) Verify commutative property for addition and multiplication for the rational numbers $\left[\dfrac{-10}{11}\right]$ and $\left[\dfrac{-8}{33}\right]$

VII. Answer the following: 2x8=16

46) a) Construct a quadrilateral ABCD with given measurements and also find their area.
ABCD, AB = 5cm, BC = 4.5 cm, CD = 3.8 cm, DA = 4.4 cm and AC = 6.2 cm.
(OR)
b) Construct a rhombus using given measurements and also find their area.
FACE, FA = 6cm and FC = 8 cm.

47) a) Draw the graph of y = 5x
(OR)
b) **Plot the following points in a graph sheet**
A(5,2), B(-7,-3), C(-2,4), D(-1,-1), E(0,-5), F(2,0), G(7,-4), H(-4,0), I(2,3), J(8,-4), K(0,7)