TVL8M

Tirunelveli District
Common Half Yearly Examination - 2024

Standard 8
MATHS
Part - I

Time: 2.30 Hours

Marks: 100

5×1=5

A) Choose the correct answer:

1) If $\frac{10^x}{10^{-3}} = 10^9$, then x is ....
   a) 4   b) 5   c) 6   d) 7

2) $(a-b)=3$ and $ab = 5$ then $a^3 - b^3 = $ ....
   a) 15   b) 18   c) 62   d) 72

3) Sum of a number and its half is $30°$ then the number is ....
   a) 15   b) 20   c) 25   d) $40°$

4) The area of a rectangle of length 21cm and diagonal 29cm is ....
   a) 609cm²   b) 58cm²   c) 420 cm²   d) 210 cm

5) What is the Eleventh Fibanacci number?
   a) 55   b) 77   c) 89   d) 144

5×1=5

B) Fill in the blanks:

6) The ones digit in the square of 77 is ....
7) A cube has .... faces
8) The linear equation in one variable has .... solution
9) Loss or Gain % is always calculated on the ....
10) The centroid of a triangle divides each medians in the ratio ....

5×1=5

C) True or False:

11) All rational numbers have an additive inverse
12) The square root of 225 is 15
13) Linear equation in one variable has only one variable with power 2
14) $5(3x+2) = 3(5x-7)$ is a linear equation in one variable
15) The incentre is equidistant from all the vertices of a triangle

5×1=5

D) Match the following:

16) Circumference of a circle   - $x = 1$
17) Area of a quadrant of a circle - $2\pi r$
18) $5x(4xy - 4)$ - $x=4$
19) $20 = 6x - 4$ - $20x^2y - 20x$
20) $\frac{4}{11} - x = \frac{-7}{11}$ - $\frac{1}{4}\pi r^2$

Part - II

Answer any 12 questions of the following:

12×2=24

21) Draw a number line and represent $\frac{9}{4}$ on it.

22) Subtract : $\frac{-8}{44}$ from $\frac{-17}{11}$

23) Find the square root of 256 by long division method.

24) Evaluate $(3^{-1} + 4^{-2} + 5^{-3})^0$

25) A circular shaped gymnsium ring of radius 35cm is divided into 5 equal arcs shaded with different colurs. Find the length of each of the arcs

26) Verify Euler's formula If face = 10 vertex = 6 and Edge = 12

27) If $l = 4pq^2$, $b=-3p^2q$, $h=2p^3q^3$ then find the value of $l \times b \times h$

28) Find the value of $(3a + 4c)^2$ by using $(a+b)^2$ identity

29) Factorise: $(ax + ay) + (bx + by)$

30) Find x if $\frac{2x}{3} - 4 = \frac{10}{3}$

31) If x% of 600 is 450 then find the value of x

32) Find the compound interest on ₹3200 at 2.5% p.a for 2 years compounded annualy

33) Find the unknown side in the following triangle
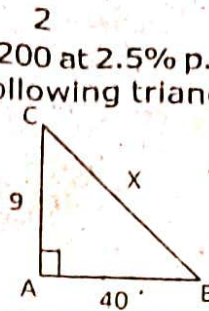
34) Can a right triangle have sides that measure 5cm, 12cm and 13 cm?

35) 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?

36) Using repeated substraction method find the H.C.F of 42 and 70

Part - III

Answer any 8 questions 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 $(a+b) \div (a-b)$ if $a = \frac{1}{2}$, $b = \frac{2}{3}$

39) (i) Find the value of $\sqrt{42.25}$

(ii) Is 108, a perfect square number

40) The radius of a sector is 21cm and its central angle is 120°. Find (i) The length of the arc (ii) area of the sector (iii) perimeter of sector

41) Find the area of the irregular polygon shaped field given below.
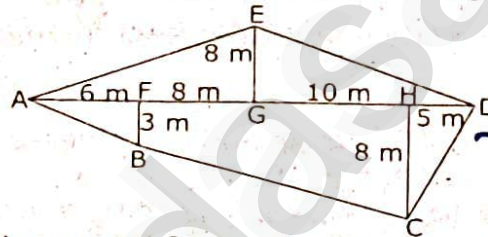
42) Expand $x^2(x+y+z)+y^2(x+y+z)+z^2(x-y-z)$

43) Find the volume of the cuboid whose dimensions are $(x+2)$ $(x-1)$ and $(x-3)$

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

45) Find the single discount in percentage which is equivalent to two successive discounts of 25% and 20% given on an article

46) A works 3 times as fast as B and is able to complete a work in 24 days less than the days taken by B. Find the time in which they can complete the work together.

47) If $\triangle PQR \sim \triangle XYZ$ find a and b
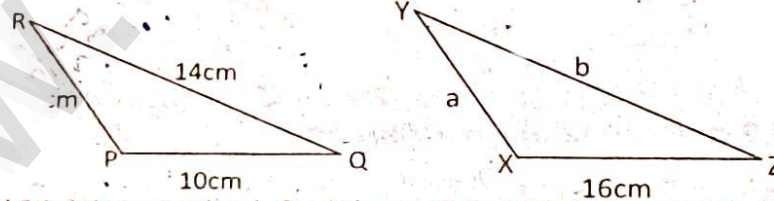
48) Using repeated Division method, find the H.C.F of (i) 455 and 26 (ii) 392 and 256

Part - IV

Answer all the questions: 2×8=16

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

(OR)

b) Construct a rhombus FARM with FR = 7cm and $\angle F = 80°$. Also find its area

50) a) Draw the graph of x = 5

(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)

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