

V8M

Virudhunagar District Common Examinations  
Common Half Yearly Examination - December 2022

## Standard 8

## MATHS

Time: 2.30 Hrs.

Marks: 100

## I. Choose the correct answer:

9×1=9

1)  $\frac{3}{4} \times \left( \frac{5}{8} \div \frac{1}{2} \right) =$

a)  $\frac{5}{8}$

b)  $\frac{2}{3}$

c)  $\frac{15}{32}$

d)  $\frac{15}{16}$

2) If  $\frac{10^x}{10^{-3}} = 10^9$  then the value of x is \_\_\_\_\_.

a) 4

b) 5

c) 6

d) 7

3) The radius of a circle of diameter 24 cm is \_\_\_\_\_.

a) 6 cm

b) 12 cm

c) 48 cm

d) 8 cm

4) If the area of a rectangle is  $48m^2n^3$  and whose length is  $8mn^2$  then, its breadth is \_\_\_\_\_.

a)  $6mn$

b)  $8m^2n$

c)  $7m^2n^2$

d)  $6m^2n^2$

5) The factors of  $x^2 - 5x + 6$  are  $(x-2)(x-p)$  then the value of p is \_\_\_\_\_.

a) -3

b) 3

c) 2

d) -2

6) When 60 is subtracted from 60% of a number to give 60 the number is

a) 60

b) 100

c) 150

d) 200

7) 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

8) The hypotenuse of a right angled triangle of sides 12 cm and 16 cm is \_\_\_\_\_.

a) 28 cm

b) 20 cm

c) 24 cm

d) 21 cm

9) What is the eleventh Fibonacci number?

a) 55

b) 77

c) 89

d) 144

## II. Fill in the blanks:

5×1=5

10) The decimal form of the rational number  $\frac{15}{-4}$  is \_\_\_\_\_.

11) The meeting point of more than two edges in a polyhedron is called as \_\_\_\_\_.

12) The value of x in the equation  $x+5 = 12$  is \_\_\_\_\_.

13) A fruit vendor sells fruits for ₹ 200 gaining ₹ 40. His gain percentage is \_\_\_\_\_.

14) The number of outcomes can you get when toss three coins once is \_\_\_\_\_.

## III. Say True or False:

5×1=5

15)  $a^0 = 1$  is valid for all values of a.

16) A line segment which joins any two points on a circle is a diameter.

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

18) Distance and Time follow Direct Proportion.

19) Every 3rd number of the Fibonacci sequence is a multiple of 2.

## IV. Answer any 10 of the following:

10×2=20

20) Find the sum of  $\frac{7}{5} + \frac{5}{7}$ .

21) Is 108 a perfect square number?

22) Evaluate:  $\left( \frac{-5}{6} \right)^{-3}$

23) The radius of a sector is 16 cm and its central angle is  $45^\circ$ . Find the length of the arc.

24) Find the product of  $(2x+3)(2x-4)$ .

25) Expand:  $(y-5)^3$

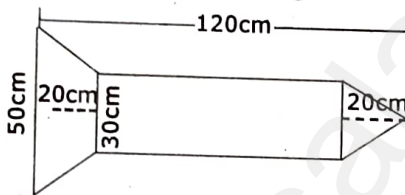
26) Find the value of x if  $\frac{2x}{3} - 4 = \frac{10}{3}$ .

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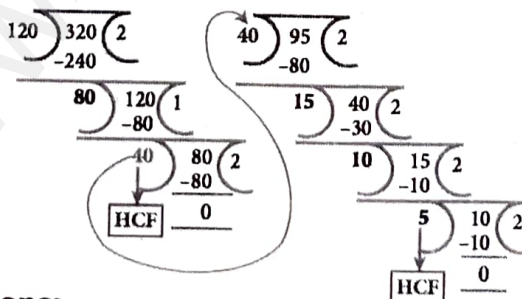
- 27) When a number is decreased by 25% it becomes 120. Find the number.
- 28) If selling an article for ₹ 820 causes 10% loss on the selling price, then find its cost price.
- 29) The value of a motor cycle 2 years ago was ₹ 70,000. If depreciate at the rate of 4% p.a. Find its present value.
- 30) An examination paper has 3 sections, each with five questions and students are instructed to answer one question from each section. In how many different ways of can the questions be answered?
- 31) Using repeated subtraction method find the HCF of 36 and 80.

**V. Answer any 9 of the following:****9×5=45**

- 32) Arrange in descending order:  $\frac{-5}{12}$ ,  $\frac{-11}{8}$ ,  $\frac{-15}{24}$ ,  $\frac{-7}{-9}$ ,  $\frac{12}{36}$
- 33) Simplify:  $\left(\frac{4}{3} - \left(\frac{-3}{2}\right)\right) + \left(\frac{-5}{3} + \frac{30}{12}\right) + \left(\frac{-12}{9} \times \frac{-27}{16}\right)$
- 34) Verify the distributive property  $a \times (b+c) = (a \times b) + (a \times c)$  for the rational number  $a = \frac{-1}{2}$ ,  $b = \frac{2}{3}$  and  $c = \frac{-5}{6}$ .
- 35) A rocket drawing has the measures as given in the figure. Find its area.



- 36) (i) Expand :  $(x+4)^3$  (ii) Find the value of  $(103)^3$
- 37) Factorize  $3x^3 - 45x^2y + 225xy^2 - 375y^3$ .
- 38) 210 men working 12 hours a day can finish a job in 18 days. How many men are required to finish the job in 20 days working 14 hours a day?
- 39) A principal becomes ₹ 2,028 in 2 years at 4% p.a. compound interest. Find the principal.
- 40) The ratio of boys and girls in a class is 5:3 if 16% of boys and 8% of girls failed in an examination then find the percentage of passed students.
- 41) Roll numbers are created with a letter followed by 3 digits in it, from the letters A, B, C, D and E and any 3 digits from 0 to 9. In how many possible ways can the roll numbers be generated? (except Aooo, Booo, Cooo, Dooo and Eooo)
- 42) Do the given problems by repeated subtraction method and verify the result. 320, 120 and 95

**VI. Answer any 2 questions:****2×8=16**

- 43) Construct a quadrilateral ABCD with AB = 5 cm, BC = 4.5 cm, CD = 3.8 cm, DA = 4.4 cm and AC = 6.2 cm. Also find its area.

**(OR)**

Construct a parallelogram BIRD with BI = 6.5 cm, IR = 5 cm and  $\angle BIR = 70^\circ$ . Also find its area.

- 44) 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).

**(OR)**

Graph the equation  $y = 2x + 5$ .

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