COMMON HALF YEARLY EXAMINATION - 2022

Reg.No. 8 2 2 2

Standard - VIII

MATHS

Time: 2.30 hrs. *Marks: 100*

PART - I

5×1=5

I. Choose the correct answer:

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. The square of 43 ends with the digit _____.

   a) 9 b) 6 c) 4 d) 3

3. $a^3 + b^3 = (a+b)^3$ _____.

   a) 3a (a+b) b) 3ab (a-b) c) -3ab (a+b) d) 3ab (a+b)

4. A fruit vendor sells fruits for ₹ 200 garming ₹ 40. His gain percentage is

   a) 20% b) 22% c) 25% d) $16\frac{2}{3}$%

5. How many outcomes can you get when you toss three coins once?

   a) 6 b) 8 c) 3 d) 2

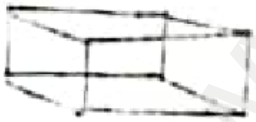
5×1=5

II. Say True or False:

6. All rational numbers have an additive inverse.
7. A cube has 3 faces.
8. $8x^3y \div 4x^2 = 2xy$
9. Depreciation value is calculated by the formula $P(1 - r/100)^n$
10. 8, 15, 17 is a pythagorean triplet.

4×1=4

III. Match the followings:

11.  - πr^2
12.  - $(\pi+2)r$
13. Area of a circle - Cuboid
14. Circumference of a semicircle - Cylinder

PART - II

10×2=20

IV. Answer any ten of the followings:

15. Find atleast two rational numbers between $\frac{-3}{4}$ and $\frac{-2}{5}$.

16. Evaluate : $\frac{7}{27} \div \frac{24}{35}$

17. Simplify : $\frac{9^2 \times 7^3 \times 2^5}{84^3}$

18. Find the area of the sectors whose length of the arc = 48m, r = 10m.

19. A circle of radius 120m is divided into 6 equal sectors. Find the length of the arc of each of the sectors.

20. Expand $-2p(5p^2 - 3p + 7)$

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

22. Divide : $(3xy)^2$ by $9xy$

23. Expand : $(x+4)^3$

24. Factorize : $x^2 + 8x + 15$

25. If x% of 600 is 450, then find the value of x.

26. If selling an article for ₹820 causes 10% loss on the selling price, then find its cost price.

27. Find the value of x and y in the following figure.

28. Check whether given sides are the sides of right - angled triangles, using pythagoras theorem.

PART - III

V. Answer any 10 of the followings : **10×5=50**

29. Arrange the following rational numbers in ascending and descending order.

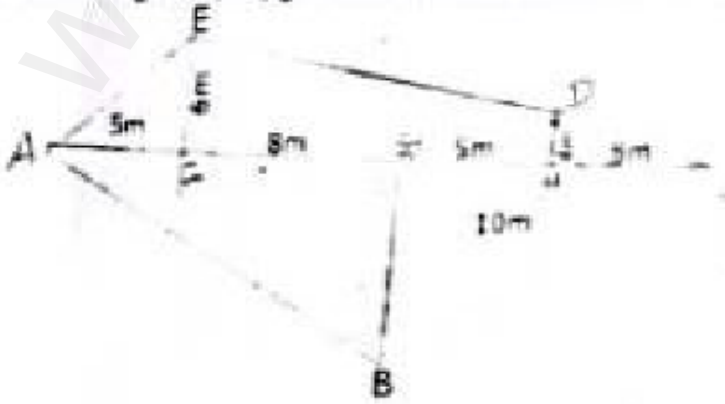
$$\frac{-5}{12}, \frac{-11}{8}, \frac{-15}{24}, \frac{-7}{-9}, \frac{12}{36}$$

30. Simplify : $\left(\frac{4}{3} - \left(-\frac{3}{2}\right)\right) \div \left(\frac{-5}{3} \times \frac{30}{12}\right) \div \left(\frac{-12}{9} \times \frac{-27}{16}\right)$

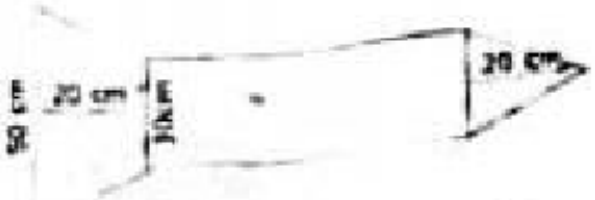
31. Find the square root by long division method : 11025

32. Evaluate : $\sqrt[3]{\frac{1728}{729}}$

33. Find the area of an irregular polygon field whose measures are given.



34. A rocket drawing has the measures as given. Find its area



35. Divide : $81(p^4q^2r^3 + 2p^3q^3r^4 - 5p^2q^4r^5)$ by $(3pqr)^2$

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

37. Factorize : $8p^3 - 12p^2q + 6pq^2 - q^3$

38. A number consists of two digits whose sum is 9. If 27 is subtracted from the original number, its digits are interchanged. Find the original number.

39. A cement factory makes 7000 cement bags in 12 days with the help of 36 machines. How many bags can be made in 18 days using 24 machines?

40. A and B together can do a piece of work in 16 days and A alone can do it in 48days. How long will B take to complete the work?

41. A 20 feet ladder leans against a wall at height of 16 feet from the ground. How far is the base of the ladder from the wall?

42. Using repeated division method, find the HCF of the following 184, 230 and 276

PART - IV

VI. Answer the following questions: 6×2=16

43. a) Construct a quadrilateral NICE with NI = 4.5cm, IC = 4.3cm, NE = 3.5cm NC = 5.5cm and IE = 5cm. Also find its area

(OR)

b) Construct the following parallelograms with the given measurements and find their area. CAMP, CA = 6cm, AP = 8cm and CP = 5.5cm

44. a) Draw the graph of $y = 6$

(OR)

b) Draw the graph of $y = x+3$
