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COMMON HALF YEARLY EXAMINATION - 2023

Std - VIII

Time : 2.30 Hours

MATHS

Marks: 100

14 x 1 = 14

I. Answer all 14 questions. Choose the best answer:

1. $\frac{-19}{5}$ lies between the integer and
 a) 2 and 3 b) 3 and 4 c) -4 and -3 d) -2 and -3
2. 0.0000000002020 in scientific form is
 a) 2.02×10^9 b) 2.02×10^{-9} c) 2.02×10^{-8} d) 2.02×10^{-10}
3. The longest chord of a circle is
 a) radius b) diameter c) circumference d) arc
4. The cross section of a solid cylinder is
 a) circle b) cone c) straight line d) frustum
5. The product of $7p^3$ and $(2p^2)^2$ is
 a) $14p^{12}$ b) $28p^7$ c) $9p^7$ d) $11p^{12}$
6. Divide x^3y^2 by x^2y
 a) x^2y b) xy c) xy^2 d) x^2y^2
7. Sum of a number and its half is 30 then the number is
 a) 15 b) 20 c) 25 d) 40
8. If 48% of 48 = 64% of x, then x =
 a) 64 b) 56 c) 42 d) 36
9. The time taken for Rs.4400 to become Rs.4851 at 10% compounded half yearly is
 a) 6 months b) 1 year c) 1 1/2 years d) 2 years
10. If 5 persons can do 5 jobs in a 5 days, then 50 persons can do 50 jobs in days.
 a) 3 b) 7 c) 5 d) 6
11. The symbol is used to represent triangles.
 a) similar b) equal c) congruent d) unequal
12. The area of a rectangle of length 21 cm and diagonal 29cm is
 a) 609cm^2 b) 580cm^2 c) 420cm^2 d) 210cm^2
13. Two similar triangles will always have angles.
 a) acute b) obtuse c) right d) matching
14. The centroid of a triangle divides each medians in the ratio
 a) 1:2 b) 2:1 c) 1:3 d) 3:1

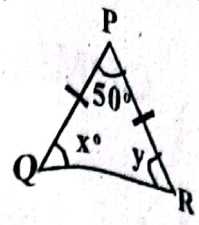
II. Answer any 10 questions. (Q.No. 28 compulsory)

10 x 2 = 20

15. Add: $\frac{-6}{11}, \frac{8}{11}, \frac{-12}{11}$
16. Is 400 a perfect cube?
17. For the sectors with given measures find the length of a arc central angle 45° , $r = 16$ cm.
18. Verify Euler's formula: Face 12, vertices = 20, Edges = 30.
19. If the length and breadth of a rectangular painting are $4x^3y$ and $3x^2y$. Find its area.
20. Expand $(5p-1)^2$
21. Factorise $x^2 + yz + xy + xz$
22. 48 is 32% of which number?

Ans
Steps

23. Write the formula to calculate discount.
24. Find the compound interest on Rs.3200 at 2.5% p.a. for 2 years, compounded annually.
25. Find the value of x, y in the following figure.



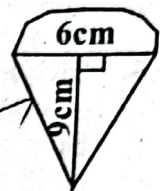
26. Check whether given sides are the sides of right angled triangles. Using pythagoras theorem 30, 40, 50.
27. If you have 2 school bags and 3 water bottles than, how many different ways can you choose each one of them, while going to school. Using repeated subtraction method, find the HCF of 36 and 80.
28. Solve: $2x + 5 = 9$

III. Answer any 10 questions. (Q.No. 42 compulsory)

$10 \times 5 = 50$

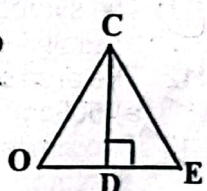
29. Find six rational numbers between $-\frac{3}{4}$ and $-\frac{2}{5}$
30. Find x so that $(-7)^{x+2} \times (-7)^5 = (-7)^{10}$
31. A circle of radius 70 cm is divided into 5 equal sectors. Find the area of each of the sectors.

32. Find the area of the combined figure given, formed by joining a semicircle of diameter 6cm with a triangles of base 6cm and height 9cm ($\pi=3.14$)

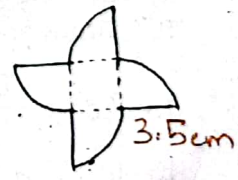


33. Find the volume of the cuboid whose dimensions are $(x+2)$, $(x-1)$ and $(x-3)$
34. Factorise : $49x^2 - 84xy + 36y^2$
35. Find x : $-3(4x+9) = 21$
36. If selling on article for Rs.820 causes 10% loss on the selling price, then find its cost price.

37. A and B together can do a piece of work in 16 days and A alone can do it in 48 days. How long will B take to complete the work.
38. 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?



39. In the given figure, D is the midpoint of OE and $\angle CDE = 90^\circ$. Prove that $\triangle ODC = \triangle EDC$.
40. 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?
41. Using repeated division method, find the HCF of 184, 230 and 276.
42. Find the perimeter and area of the given figure ($\pi=22/7$)



(OR)

Find the difference between C.I and S.I. on Rs.5000 for 1 year at 2% p.a. If the interest is compounded halfyearly.

43. Construct a trapezium BOAT in which \overline{BO} is parallel to \overline{TA} . $BO = 7\text{cm}$, $OA = 6\text{cm}$, $BA = 10\text{cm}$ and $TA = 6\text{cm}$. Also find its area.

$2 \times 8 = 16$

(OR)

Construct the following parallelogram with the given measurements and find its area CAMP. $CA = 6\text{cm}$, $AP = 8\text{cm}$ and $CP = 5.5\text{cm}$

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)

(OR)

Draw the graph of $Y=5x$.

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