

Instructions :

1. All the questions are compulsory.
2. Section A contains 10 questions of 2 marks each.
3. Section B contains 10 questions of 3 marks each.
4. Section C contains 2 questions of 5 marks each.

SECTION-A

1. Verify the given expression.

$$A \times (B + C) = A \times B + A \times C$$

$$\text{If } A = \frac{-5}{7} \quad B = \frac{7}{9} \quad \text{and } C = \frac{2}{3}$$

2. Simplify

$$\left[\left(\frac{3}{5} \right)^3 \right]^2 \div \left(\frac{3}{5} \right)^{-2} \times \left(\frac{3}{5} \right)^3$$

3. If one of the Pythagorean triplet is 12 find the remaining two.

4. Find cube of given numbers

$$(i) \quad 1\frac{2}{3} \quad \text{and} \quad -0.5$$

5. Multiply and find the value of expression at $a = 2, b = -3, c = 1$.

$$\left(\frac{-1}{6} a^2 b^2 c \right) \times (9 a^2 b^3 c^3)$$

6. Using identity find the value of

$$(97)^2$$

7. Factorise the given $pa^2 + qb^2 + pb^2 + qa^2$

8. Factorise $25a^2 - 36b^2$

9. Find the value of each interior angle of a regular polygon of side 7.

10. Calculate circumference and area of a circle of radius 14 cm.

SECTION-B

11. Write eight rational numbers between

$$x \text{ and } |x| \text{ if } x = \frac{-5}{7}. \text{ Also represent } \frac{-5}{7} \text{ on number line}$$

12. The product of two numbers is $\left(\frac{2}{5}\right)^{-3}$. If one of them is $\left(\frac{5}{4}\right)^{-2}$. Find the other.

13. find the smallest number which should be added to 3645 to make it a perfect square.

14. Find the smallest natural number by which 16875 must be divided to obtain a perfect cube.
15. Multiply :
- (1) $(3x - 2)(2x + 7)$
 - (2) $(a + 1)(a - 1)(a^2 + 1)$
16. Factorise :
- (1) $x^2 - 5x - 24$
 - (2) $9x^2 - 6x + 1$
17. If $x - \frac{1}{x} = 3$
- Find $x^2 + \frac{1}{x^2}$ and then $x^4 + \frac{1}{x^4}$
18. Find quotient and remainder when $2x^3 + 3x^2 + 7x + 5$ is divided by $(x^2 + 4)$.
19. If angles of parallelogram $ABCD$ are such that $\angle A : \angle B = 2 : 7$ find all the angles.
20. Find the distance between two parallel sides of trapezium if its area is 440 cm^2 and the parallel sides are 30 cm and 14 cm.

SECTION-C

21. If Diagonal of rhombus are 8 cm and 6 cm. Calculate side of rhombus its area and perimeter.
22. Find the area of given field. If the dimension are in meters.

