

I. Choose the correct answer.

(15 × 1 = 15)

1. The number of perfect square numbers between 300 and 500 is _____.

- a) 5 b) 6 c) 3 d) 2

2. A Square number will not end with numbers _____.

- a) 2,4,7,3 b) 2,3,7,8 c) 1,5,6,4 d) 0,1,2,3

3. 4 squared is _____.

- a) 4 b) 24 c) 6 d) 16

4. The sum of the first n consecutive odd natural number is _____.

- a) n b) n^2 c) 2n d) -n

5. A number ends with 1 or 9, its square ends with _____.

- a) 0 b) 2 c) 9 d) 1

6. Squaring also has an inverse operation namely finding the _____.

- a) Square b) Cube c) Cube root d) Square root

7. The cube root of 0.000004913 is _____.

- a) 0.017 b) 0.016 c) 17 d) 0.17

8. The smallest number to be added to 3333 to make it a perfect cube is _____.

- a) 41 b) 42 c) 43 d) 40

9. The cube of every even number is _____.

- a) Odd b) Positive c) Negative d) Even

10. _____ does not end with two zeros.

- a) Perfect cube b) Perfect square c) Square root d) Cube root

11. Ramanujan number is _____.

- a) 1729 b) 1279 c) 1972 d) 7129

12. Area of the rhombus = _____ sq.units.

- a) $\frac{1}{2}bh$ b) $\frac{1}{2} \times d_1 \times d_2$ c) $\frac{1}{2} \times d_1 + d_2$ d) d_1d_2

13. _____ is a parallelogram in which all its sides are congruent.

- a) Rhombus b) Rectangle c) Square d) Quadrilateral

14. In a rhombus, all sides are _____.

- a) Equal b) Not equal c) Not bisect d) Not parallel

15. Diagonals of a rhombus bisect each other at _____.

- a) 60° b) 30° c) 65° d) 90°

II. Answer any nine question. Question no : **27** is compulsory either 'a' or 'b'. (9 × 3 = 27)

16. What will be the ones digit in the squares of the following numbers?
i) 36 ii) 252

17. Write i) 10^2 and ii) 11^2 as the sum of consecutive odd natural numbers .

18. Find the sum without actually adding the following odd numbers, the first 99 odd natural numbers.

19. Fill in the blanks.

i) The ones digit in the square of 77 is _____.

ii) The number of non - square numbers between 24^2 and 25^2 is _____.

iii) The ones digits in the cube of 73 is _____.

20. Find the square root by prime factorization method. i) 1156

21. Examine if each of the following is a perfect square. i) 190 ii) 841

22. Show that 1944 is not a perfect cube.

23. Find the smallest number by which 10985 should be divided so that the quotient is a perfect cube .

24. Find two smallest perfect square numbers which when multiplied together gives a perfect cube number.

25. Say True or False.

i) The cube of 0.0012 is 0.000001728.

ii) The cube root of 250047 is 63.

iii) 79570 is not a perfect cube.

26. Is 400 a perfect cube.

27. Find the sum without actually adding the following.

a) Odd number : $1 + 3 + 5 + 7 + \dots + 35$ (or)

b) Is 108 a perfect square number?

III. Answer any five question. Question No. **36** is compulsory either 'a' or 'b' (5 × 5 = 25)

28. Find the cube root of $24 \times 36 \times 80 \times 25$

29. What is the square root of cube root of 46656?

30. Find the cube root of 729 and 6859 by prime factorization.

31. Find a Pythagorean triplet whose largest member is 65.

32. Find the square root of the following by repeated subtraction method. i) 144

33. Find the least number by which 1800 should be multiplied so that it becomes a perfect square.

Also, find the square root of perfect square thus obtained.

34. Find the smallest number by which 10985 should be divided so that that the quotient is a perfect square.

35. Find the smallest number by which 200 should be multiplied to make it a perfect cube.

36. a) Match the following.

- | | |
|------------------------------|------------------------|
| i) Number ends with 2 or 8 | - 1, 8, 27, 64..... |
| ii) Perfect cube numbers | - 1, 4, 9, 16..... |
| iii) Number ends with 3 or 7 | - Pythagorean triplets |
| iv) Perfect square number | - Square ends with 4 |
| v) $a^2 + b^2 = c^2$ | - Square ends with 9 |

(or)

b) Find the cube root of 27000

IV. Practical Geometry: (Any 1) (1 × 8 = 8)

37. a) Construct a rhombus with FACE, FA = 6 cm and FC = 8 cm (or)

b) Construct a rhombus with PARK, PR = 9 cm and $\angle P = 70^\circ$

