

10. If the digit in one's place of a number is 2, then the last digit of its cube will be: [1]
a) 2 b) 6
c) 4 d) 8
11. How many cubes of side 3 cm can be cut from a cube of side 9 cm? [1]
a) 15 b) 7
c) 27 d) 14
12. The cube root of $\frac{-343}{1331}$ is [1]
a) $\frac{11}{7}$ b) $\frac{7}{11}$
c) $\frac{-11}{7}$ d) $\frac{-7}{11}$
13. $0.04 \times 0.04 \times 0.04 = ?$ [1]
a) 0.000064 b) 0.0064
c) 0.00064 d) 0.064
14. Find the smallest number which when multiplied with 5184 will make the product a perfect cube. [1]
a) 6 b) 9
c) 3 d) 2
15. Find the value of $\sqrt[3]{2\frac{10}{27}} \div (2^2 - 3^2)$. [1]
a) $\frac{-4}{15}$ b) $\frac{-15}{4}$
c) $\frac{15}{4}$ d) $\left(\frac{1}{15}\right)^{-1}$
16. What is the cube of the triple of m? [1]
a) $27m^3$ b) $9m^3$
c) m^3 d) $3m^3$
17. Which of the following perfect cube is the cube of an odd number? [1]
a) 1000 b) 512
c) 729 d) 1728
18. What is the smallest number by which 13,500 is to be multiplied to make the product a perfect cube? [1]
a) 5 b) 2
c) 4 d) 3
19. The cube root of 0.000001 is [1]
a) 0.1 b) 0.031
c) 0.01 d) 0.316
20. A room is in the form of a cube whose volume is 1728000 m^3 . Find the length of side of the room. [1]
a) 120 m b) 140 m

- c) 110 m d) 190 m
21. If $\sqrt[3]{0.000125} = x$, then $x =$ [1]
 a) 0.5 b) 0.0005
 c) 0.05 d) 0.005
22. Which one of the following will have cube root ending with 3? [1]
 a) 46656 b) 35937
 c) 50653 d) 39304
23. By which smallest natural number should 135 be divided so that the quotient is a perfect cube? [1]
 a) 9 b) 2
 c) 3 d) 5
24. The unit's digit of the cube of a number is 9. The unit's digit of its cube root is _____. [1]
 a) 9 b) 3
 c) 1 d) 7
25. By prime factorisation, the value of the cube root of 5832, is [1]
 a) 18 b) 19
 c) 16 d) 17
26. In the five digit number 1b6a3, a is the greatest single digit perfect cube and twice of it exceeds b [1]
 by 7. Then the sum of the number and its cube root is _____.
 a) 18700 b) 11862
 c) 25320 d) 19710
27. The value of $\frac{(73)^3 + (53)^3}{73 \times 73 - 73 \times 53 + 53 \times 53}$ is [1]
 a) -126 b) 216
 c) 126 d) 162
28. Find the prime factorisation of 175616. [1]
 a) $2^3 \times 2^3 \times 3^3 \times 7^3$ b) $2^9 \times 7^3$
 c) $2^3 \times 3^3 \times 3^3 \times 7^3$ d) $2^3 \times 3^3 \times 5^3 \times 7^3$
29. State whether the statements are true (T) or false (F). [1]
 i. Cube of an odd number is even.
 ii. Cube of an even number is even.
 iii. Cube of an odd number is odd.
 a) FTT b) TTT
 c) TTF d) TFT
30. Find the cubes of 3x, 5x and 7x. [1]
 a) $4x^3, 9x^3, 16x^3$ b) $8x^2, 27x^2, 64x^2$
 c) $27x^3, 125x^3, 343x^3$ d) $4x^2, 9x^2, 16x^2$

31. **Assertion (A):** The cube of number 6 is 216 and it is written as $(6)^3 = 216$. [1]
Reason (R): A perfect cube is a number, which is obtained by multiplying a natural number thrice.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.
32. **Assertion (A):** The unit digit of the cube root of 24389 is 1. [1]
Reason (R): We can find the cube root of given number by prime factorisation or estimation method.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.
33. **Assertion (A):** Cube root of $\frac{4096}{225}$ is $\frac{16}{5}$. [1]
Reason (R): Cube Root of number m, is the number which is multiplied thrice to get m.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.
34. **Assertion (A):** Write the cube of 8 as the sum of consecutive odd numbers. It can be written as $8^3 = 57 + 59 + 61 + 63 + 65 + 67 + 69 + 71$. [1]
Reason (R): Cubes of a numbers ending with the digit 3 end with digit 8 and vice versa.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.
35. **Assertion (A):** The cube of rational number 3.1 is 28.791. [1]
Reason (R): The cube of an even number is always even.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false. d) A is false but R is true.

Section B

36. Is 216 a perfect cube? [2]
37. Is 100 a perfect cube? [2]
38. Using prime factorisation, find the cube root of 5832. [2]
39. Using prime factorisation, find the cube root of 512. [2]
40. Is 392 a perfect cube? If not, find the smallest natural number by which 392 must be multiplied so that the product is a perfect cube. [2]
41. Using prime factorisation, find that 128 is a perfect cube. [2]
42. Find the smallest number by which of 100 must be multiplied to obtain a perfect cube. [2]
43. Is 68600 a perfect cube? If not, find the smallest number by which 68600 must be multiplied to get a perfect cube? [2]

44. Find out if 6859 is a perfect cube? **[2]**
45. Using prime factorisation, find the cube root of 2197. **[2]**

Section C

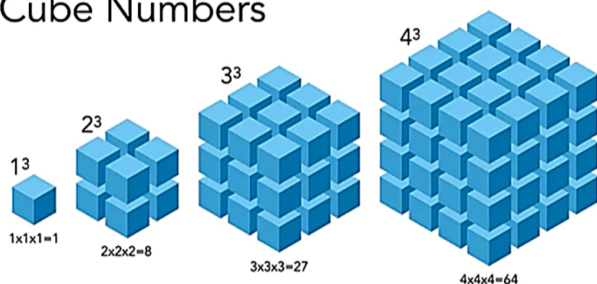
46. Find the cube root of 110592 by prime factorisation method. [3]
47. Find the cube root of 10648 by prime factorisation method. [3]
48. Find the smallest number by which 675 must be multiplied to obtain a perfect cube. [3]
49. Find the cube root of 15625 by prime factorisation method. [3]
50. Find the cube root of 91125 by prime factorisation method. [3]
51. Find the smallest number by which 81 must be divided to obtain a perfect cube. [3]
52. Find the cube root of 46656 by prime factorisation method. [3]
53. Find the smallest number by which 135 must be divided to obtain a perfect cube. [3]
54. Find the smallest number by which 192 must be divided to obtain a perfect cube. [3]
55. Find the smallest number by which 72 must be multiplied to obtain a perfect cube. [3]

Section D

Question No. 56 to 60 are based on the given text. Read the text carefully and answer the questions: [5]

Biju was a student of DPS, Dwarika, Delhi. He was in class VIII. He has a classmate friend Arjun. Arjun was a studious boy, He was fond of studying the number patterns.

Cube Numbers



Once He found some patterns like:

1. $1 = 1^3$ (The very first odd number $= 1^3$)
2. $3 + 5 = 8 = 2^3$ (Sum of next 2 odd numbers $= 2^3$)
3. $7 + 9 + 11 = 27 = 3^3$ (Sum of next 3 odd numbers $= 3^3$)
4. $13 + 15 + 17 + 19 = 64 = 4^3$ (Sum of next 4 odd numbers $= 4^3$)
5. $21 + 23 + 25 + 27 + 29 = 125 = 5^3$ (Sum of next 5 odd numbers $= 5^3$)

56. How many consecutive odd numbers will be needed to obtain the sum as 10^3 ?

- a) 7
- b) 8
- c) 10
- d) 9

57. Which one of the following will not be a perfect cube?

- a) $13 + 14 + 15$
c) $13 + 15 + 17 + 19$
- b) $7 + 9 + 11$
d) $3 + 5$

58. Which one of the following will be a perfect cube?

- a) $13 + 15 + 17 + 19$
c) $3 + 4 + 5 + 6$

59. How many consecutive odd numbers will be needed to obtain the sum as 12^3 _____.

60. $31 + 33 + 35 + 37 + 39 + 41 = 216 = 6^3$.

a) True

b) False

Question No. 61 to 65 are based on the given text. Read the text carefully and answer the questions:

[5]

Cube and cube root is one of the most interesting concepts in Mathematics. Cube root is the factor of a number that is multiplied by itself three times to get the resultant number.

When a given number is a perfect cube, we find its cube root as follows:

Step 1: Resolve the given number into prime factors.

For example $216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$

Step 2: Make groups in triplets of similar factors.

$216 = (2 \times 2 \times 2) \times (3 \times 3 \times 3)$

Step 3: Take the product of prime factors, choose one out of every triplet, and gives the cube root of the given number.

Thus Cube root of $216 = 2 \times 3 = 6$.

61. The prime factors of 125 are:

a) $6 \times 6 \times 6$

b) $7 \times 7 \times 7$

c) 5×5

d) $5 \times 5 \times 5$

62. The cube root of 64 is?

a) 6

b) 3

c) 5

d) 4

63. The cube root of 729 is?

a) 9

b) 3

c) 4

d) 5

64. The cube root of 512 is _____.

65. The prime factors of 343 are $7 \times 7 \times 7$.

a) True

b) False

66. Subtract a number x from 6 times that number and then take the cube of the difference. If the result of the difference is 625, then find the value of x . [5]

67. Three numbers are in the ratio 1:2:3 and the sum of their cubes is 4500. Find the numbers. [5]

68. Is 9720 a perfect cube? If not, find the smallest number by which it should be divided to get a perfect cube. Also find the cube root of the quotient. [5]

69. Three numbers are in the ratio 2 : 3 : 4. The sum of their cubes is 0.334125. Find the numbers. [5]

70. Prove that if a number is tripled, then its cube is 27 times the cube of the given number. [5]