Question Bank

1. Fill in the blanks.

a. The cube of an even natural number is _____ (even/odd).

b. The cube of an odd natural number is _____ (even/odd).

c. The cube of a positive integer is _____ (positive/negative).

d. The cube of a negative integer is _____ (positive/negative).

e. $\left(\frac{a}{b}\right)^3 =$ _____ .

2. Choose the correct answer.

a. By observation, say which of the following is not a perfect cube:

i. 1000 ii. 10,00,000

iii. 100 iv. 1,00,00,00,000

b. Say which of the following is the cube of an odd number:

i. 512 ii. 64 iii. 1331 iv. 1728

c. Say which of the following is the cube of an even number:

i. 27 ii. 729 iii. 4096 iv. 4913

d. By what number will you multiply $(2 \times 2 \times 2 \times 7 \times 7)$ to get a perfect cube?

i. 1 ii. 2 iii. 3 iv. 7

e By what number will you divide $(3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5)$ to get a perfect cube?

i. 1 ii. 2 iii. 3 iv. 5

3. Answer the following.

a. Find the cubes of the following:

i. 7 ii. 17 iii. 108 iv. $-\frac{1}{8}$

b. Find the least number by which the following need to be multiplied to make them perfect cubes:

i. 200 ii. 256 iii. 1323

c. Find the least number by which the following need to be divided to make them perfect cubes:

i. 128 ii. 3993 iii. 13500

d. Find the cube roots of the following:

i. 2197 ii. –3375

iii. $3^3 \times 5^3 \times 7^3$ iv. $2^6 \times 7^3 \times 9^6$

v. $(-4)^3 \times (-7)^3 \times (-9)^6$

vi. $\frac{-64}{125}$ vii. $\frac{-2744}{5832}$

viii. 0.729 ix. 4.096

x. 19.683

e. Using the cube root table, find the cube root of the following:

i. 58 ii. 990 iii. 6800

f. Using the cube root table, find the cube root of the following correct to 2 decimal places:

i. 120 ii. 3265 iii. 34.5

g. Using the cube root table, find the cube root of the following correct to 2 decimal places:

i. $\frac{77}{64}$ ii. $\frac{450}{343}$ iii. $\frac{5600}{216}$

h. Find the cube roots of the following by factorisation and by using the table:

i. 464 ii. 2700

i. Using cube root table, find the approximate length of the side of a cube of volume 650 cm^3

j. A metal block has the dimensions of $4\text{ cm} \times 5\text{ cm} \times 8\text{ cm}$. It is to be melted and some more metal is to be added to make a bigger block. What is the minimum volume of metal that should be added if the dimensions of the block are to be integer values? What is the minimum volume of metal that should be removed to make a smaller block with integer dimensions?