21- A large cube is formed from the material obtained by melting three smaller cubes of 3, 4 and 5 cm side. What is the ratio of the total surface areas of the smaller cubes and the large cube?

- **A.**2 : 1
- **B.**3 : 2
- **C.**25 : 18
- **D.**27 : 20
- **E.**None of these

Answer & Explanation

Answer - **C** (25 : 18)

Explanation -   Volume of the large cube = $(3^3 + 4^3 + 5^3)$ = 216 cm^3.

Let the edge of the large cube be *a*.

So, a^3 = 216   *a* = 6 cm.

$$\text{Required ratio} = \frac{6 \times (3^2 + 4^2 + 5^2)}{6 \times 6^2} = \frac{50}{36} = 25 : 18.$$

22- How many bricks, each measuring 25 cm x 11.25 cm x 6 cm, will be needed to build a wall of 8 m x 6 m x 22.5 cm?

- **A.**5600
- **B.**6000
- **C.**6400
- **D.**7200
- **E.**None of these

Answer & Explanation

Answer - **C** (6400)

Explanation -

$$\text{Number of bricks} = \frac{\text{Volume of the wall}}{\text{Volume of 1 brick}} = \frac{800 \times 600 \times 22.5}{25 \times 11.25 \times 6} = 6400.$$