c. Describe in short ceramics and semi-conductors.

d. Write a note on Polio.

(SECTION-B)

Q. No. 6

a. The value of a washing machine depreciates at the rate of 10-percent every year. If its present value is Rs. 8748 then what was the price of washing machine three years ago.

b. A Father is four times the age of his daughter. If after 5-years, he would be three times of daughter's age, then further after 5-years, how many times he would be of his daughter age?

c. What will be volume of a football with diameter 12cm?

Q6 a

Data

value decrease = 10% every year

Present value = Rs 8748

Price of washing machine 3 years ago?

Solution:-

According to formula:-

$$\text{final value} = \text{initial value} \times \left(1 - \frac{\text{rate}}{100}\right)^{\text{time}}$$

$$8748 = x\left(1 - \frac{10}{100}\right)^3$$

$$8748 = x\left(\frac{100-10}{100}\right)^3$$

$$8748 = x\left(\frac{90}{100}\right)^3$$

$$8748 = x\left(\frac{9}{10}\right)^3$$

$$8748 = x \times \frac{9}{10} \times \frac{9}{10} \times \frac{9}{10}$$

$$\begin{array}{r} 81 \\ \times 9 \\ \hline 729 \end{array}$$

$$8748 = x \times \frac{729}{1000}$$

$$\frac{8748}{x} = \frac{729}{1000}$$

B.C.M $\frac{8748000}{729} = x$

$= 12,000$ Ans.

Q6 b

daughter age = x

father's age = $4x$

In 5 years = $x+5$ (daughter)

$4x+5$ (father)

3 times of daughter's age = father will be

$4x+5 = 3(x+5)$

$4x+5 = 3x+15$

$x = 10$

So, Daughter = 10 years old

father = 40 years old

Now, After 5 years = $(x+5)+5$

$(10+5)+5$

$= 20$ years.

Father = $(4x+5)+5$

$(40+5)+5$

50 years old

$\therefore \frac{50}{20} = 2.5$ times

Ans: 2.5 times.