ASSIGNMENT 1

BT21BTECH11005 - MANIKANTA

PROBLEM:-Sachin invests ₹8500 in 10%, ₹100 shares at ₹170. He sells the shares when the price of each share rises by ₹30. He invests the proceeds in 12%, ₹100 shares at ₹125.
Find:
(i) the sale proceeds.
(ii) the number of ₹125 shares he buys.
(iii) the change in his annual income.

SOLUTION:-
given

investment = ₹8500
face value = ₹100
shareprice of 1st company = ₹170
shareprice of 2nd company = ₹125
profit = ₹30
percentage of 1st company = 10%
percentage of 2nd company = 12%

(i) sales proceeds = shares × (share price + profit)

$$\text{no of shares} = \frac{\text{investment}}{\text{share price}} \tag{1}$$
$$= \frac{8500}{170} \tag{2}$$
$$= 50 \tag{3}$$
$$\text{sale proceeds} = 50 \times (170 + 30) \tag{4}$$
$$= 10,000 \tag{5}$$

(ii) new number of shares

$$= \frac{\text{sale proceeds}}{\text{share price}} \tag{6}$$
$$= \frac{10,000}{125} \tag{7}$$
$$\text{new shares} = 80 \tag{8}$$

(iii) change in income= new dividend - old dividend

$$\text{dividend} = \frac{\text{shares} \times \text{face value} \times \text{percentage}}{100} \tag{9}$$
$$\text{old dividend} = \frac{50 \times 100 \times 10}{100} = 500 \tag{10}$$
$$\text{new dividend} = \frac{80 \times 100 \times 12}{100} = 960 \tag{11}$$
$$\text{change in income} = 960 - 500 \tag{12}$$
$$= 460. \tag{13}$$

$\therefore$ from $(5), (8), (13)$

(i) sale proceeds = ₹$10,000$
(ii) the number of ₹125 shares he buys = 80
(iii) change in his annual income = ₹460.

parameter	company 1	company 2
investment	₹8500	₹10000
face value	₹100	₹100
percentage	10%	12%
shareprice	₹170	₹125
no of shares bought	50	80
dividend	500	960
sale proceeds	₹10000	-

FORMULAE:-

$$\text{sale proceeds} = \text{shares} \times (\text{share price + profit})$$

$$\text{no of shares} = \frac{\text{investment}}{\text{share price}}$$

$$\text{dividend} = \frac{\text{shares} \times \text{face value} \times \text{percentage}}{100}$$