Shares and Dividends

Question 1.
How much money will be required to buy 400, ₹ 12.50 shares at a premium of ₹ 1?

Solution:

Number of shares to be bought = 400
Rs. 12.50 shares at a premium of Re. 1 means;
nominal value of the share is Rs. 12.50 and
its market value = Rs. 12.50 + Re. 1 = Rs. 13.50
∴ Money required to buy 1 share = Rs. 13.50
⇒ Money required to buy 400 shares = 400 x Rs. 13.50 = Rs. 5400

Question 2.
How much money will be required to buy 250, ₹ 15 shares at a discount of ₹ 1.50?

Solution:

Number of shares to be bought = 250
Rs. 15 shares at a discount of Rs. 1.50 means;
nominal value of the share is Rs. 15 and
its market value = Rs. 15 – Rs. 1.50 = Rs. 13.50
∴ Money required to buy 1 share = Rs. 13.50
⇒ Money required to buy 250 shares = 250 x Rs. 13.50 = Rs. 3375

Question 3.
A person buys 120 shares at a nominal value of ₹ 40 each, which he sells at ₹ 42.50 each. Find his profit and profit percent.

Solution:
Nominal value of 120 shares = ₹ 40 × 120= ₹ 4,800
Market value of 120 shares = ₹ 42.50 × 120= ₹ 5,100
His profit = ₹ 5,100 – ₹ 4,800 = ₹ 300

profit = $\frac{300}{4800}$ × 100% = 6.25%

Question 4.
Find the cost of 85 shares of ₹ 60 each when quoted at ₹ 63.25.

Solution:
Market value of 1 share = ₹ 63.25
Market value of 85 shares = ₹ 63.25 × 85 = ₹ 5,376.25

Question 5.
A man invests ₹ 800 in buying ₹ 5 shares and when they are selling at a premium of ₹ 1.15, he sells all the shares. Find his profit and profit percent.

Solution:
Nominal value of 1 share = ₹ 5
Market value 1 share = ₹ 5 + ₹ 1.15 = ₹ 6.15
Total money invested = ₹ 800

No of shares purchased = $\frac{800}{5}$ = 160
Market value of 160 shares = 160 × 6.15= ₹ 984
His profit = ₹ 984 – ₹ 800 = ₹ 184

profit = $\frac{184}{800}$ × 100% = 23%

Question 6.
Find the annual income derived from 125, ₹ 120 shares paying 5% dividend.

Solution:
Nominal value of 1 share = ₹ 60
Nominal value 250 shares= ₹ 60 x 250= ₹ 15,000
Dividend = 5% of ₹ 15,000
= $\frac{5}{100}$ × 15,000 = ₹ 750

Question 7.
A man invests ₹ 3,072 in a company paying 5% per annum, when its ₹ 10 share can be bought for ₹ 16 each. Find :
(i) his annual income
(ii) his percentage income on his investment.

Solution:
Market value of 1 share = ₹ 16
Nominal value of 1share = ₹ 10

Money invested = ₹ 3,072

$$\therefore \text{ No. of shares purchased} = \frac{3072}{16} = 192$$

Nominal value of 192 shares= 10 x 192= Rs1,920

$$\text{Annual income} = 5\% \text{ of Rs } 1,920$$
$$= \frac{5}{100} \times 1,920$$
$$= Rs96$$

$$\text{Income\%} = \frac{96}{3,072} \times 100\% = 3.125\% = 3\frac{1}{8}\%$$

Question 8.
A man invests ₹ 7,770 in a company paying 5% dividend when a share of nominal value of ₹ 100 sells at a premium of ₹ 5. Find:
(i) the number of shares bought;
(ii) annual income;
(iii) percentage income.

Solution:
Total money invested = ₹ 7,770
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 100 + ₹ 5 = ₹ 105

$$\therefore \text{ No. of shares purchased} = \frac{7770}{105} = 74$$

Nominal value of 74 shares= 74 x 100= Rs7,400

$$\text{Annual income} = 5\% \text{ of Rs } 7,400$$
$$= \frac{5}{100} \times 7,400$$
$$= Rs370$$

$$\text{Income\%} = \frac{370}{7,770} \times 100\% = 4.76\%$$

Question 9.
A man buys ₹ 50 shares of a company, paying 12% dividend, at a premium of ₹ 10. Find:
(i) the market value of 320 shares;
(ii) his annual income;
(iii) his profit percent.

Solution:
Nominal value of 1 share = ₹ 50
Market value of 1 share = ₹ 50 + ₹ 10 = ₹ 60
Market value of 320 shares = 320 x 60 = ₹ 19,200
Nominal value of 320 shares = 320 x 5 = ₹ 16,000

$$\text{Annual income} = 12\% \text{ of Rs } 16{,}000$$
$$= \frac{12}{100} \times 16{,}000$$
$$= \text{Rs}\, 1{,}920$$

$$\text{Profit}\% = \frac{1{,}920}{19{,}200} \times 100\% = 10\%$$

Question 10.
A man buys ₹ 75 shares at a discount of ₹ 15 of a company paying 20% dividend. Find:
(i) the market value of 120 shares;
(ii) his annual income;
(iii) his profit percent.

Solution:
Nominal value of 1 share = ₹ 75
Market value of 1 share = ₹ 75 – ₹ 15 = ₹ 60
Market value of 120 shares = 120 × 60 = ₹ 7,200
Nominal value of 120 shares = 120 × 75 = ₹ 9,000

$$\text{Annual income} = 20\% \text{ of Rs } 9{,}000$$
$$= \frac{20}{100} \times 9{,}000$$
$$= \text{Rs}\, 1{,}800$$

$$\text{Profit}\% = \frac{1{,}800}{7{,}200} \times 100\% = 25\%$$

Question 11.
A man has 300, ₹ 50 shares of a company paying 20% dividend. Find his net income after paying 3% income tax.

Solution:
Nominal value of 1 share = ₹ 50
Nominal value of 300 shares = 300 × 50 = ₹ 15,000

$$\therefore \text{Dividend} = 20\% \text{ of } Rs15,000$$
$$= \frac{20}{100} \times 15,000 = Rs3,000$$
$$\therefore \text{Income tax paid} = 3\% \text{ of } Rs3,000$$
$$= \frac{3}{100} \times 3,000 = Rs90$$

His net income = ₹ 3,000 – ₹ 90 = ₹ 2,910

Question 12.
A company pays a dividend of 15% on its ten-rupee shares from which it deducts income tax at the rate of 22%. Find the annual income of a man who owns one thousand shares of this company.

Solution:
Nominal value of 1 share = ₹ 10
Nominal value of 1000 shares = 1000 × 10 = ₹ 10,000

$$\therefore \text{Dividend} = 15\% \text{ of } Rs10,000$$
$$= \frac{15}{100} \times 10,000 = Rs1,500$$
$$\therefore \text{Income tax paid} = 22\% \text{ of } Rs1,500$$
$$= \frac{22}{100} \times 1,500 = Rs330$$

His net income = ₹ 1,500 – ₹ 330 = ₹ 1,170

Question 13.
A man invests ₹ 8,800 in buying shares of a company of face value of rupees hundred each at a premium of 10%. If he earns ₹ 1,200 at the end of the year as dividend, find:
(i) the number of shares he has in the company.
(ii) the dividend percent per share.

Solution:
Total investment = ₹ 8,800
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 110

$\therefore$ No of shares purchased = $\frac{8800}{110}$ = 80
Nominal value of 80 shares = 80 × 100= ₹ 8,000
Let dividend% = y%
then y% of ₹ 8,000 = ₹ 1,200

$\Rightarrow \frac{y}{100}$ × 8,000 = 1,200
$\Rightarrow$ y = 15%

Question 14.
A man invests ₹ 1,680 in buying shares of nominal value ₹ 24 and selling at 12% premium. The dividend on the shares is 15% per annum. Calculate:
(i) the number of shares he buys;
(ii) the dividend he receives annually.

Solution:
Nominal value of 1 share = ₹ 24
Market value of 1 share = ₹ 24+ 12% of ₹ 24
= ₹ 24+ ₹ 2.88= ₹ 26.88
Total investment = ₹ 1,680

$\therefore$ No of shares purchased = $\frac{1680}{26.88}$ = 62.5
Nominal value of 62.5 shares = 62.5 x 24= ₹ 1,500
Dividend = 15% of ₹ 1,500

= $\frac{15}{100}$ × 1,500 = ₹ 225

Question 15.
By investing ₹ 7,500 in a company paying 10 percent dividend, an annual income of ₹ 500 is received. What price is paid for each of ₹ 100 share ?

Solution:
Total investment = ₹ 7,500
Nominal value of 1 share = ₹ 100
No. of shares purchased = y
Nominal value of y shares = 100 x y = ₹ (100y)
Dividend% = 10%

Dividend = ₹ 500

$\therefore$ 10% of 100y = Rs500

$\Rightarrow \frac{10}{100} \times 100y = Rs500$

$\Rightarrow y = \frac{500}{10} = 50 shares$

$\therefore$ Market value of 1 share $= \frac{7,500}{50} = Rs150$

Exercise 3B

Question 1.
A man buys 75, ₹ 100 shares of a company which pays 9 percent dividend. He buys shares at such a price that he gets 12 percent of his money. At what price did he buy the shares ?

Solution:

Nominal value of 1share= Rs100
Nominal value of 75 shares= 100 × 75= Rs7,500
Dividend% = 9%

$\therefore$ Dividend= 9% of Rs7,500

$= \frac{9}{100} \times Rs7,500 = Rs675$

Let market price of 1 share= Rsy
Then market price of 75 shares= Rs75y
Profit% on investment= 12%
12% of 75y = Rs 657

$\Rightarrow \frac{12}{100} \times 75y = Rs\ 657$

$\Rightarrow y = Rs\ 75$

Question 2.
By purchasing ₹ 25 gas shares for ₹ 40 each, a man gets 4 percent profit on his investment. What rate percent is the company paying? What is his dividend if he buys 60 shares?

Solution:
Nominal value of 1 share = ₹ 25
Market value of 1 share = ₹ 40
Profit% on investment = 4%
Then profit on 1 share = 4% of ₹ 40= ₹ 1.60

∴ Dividend% = $\frac{1.60}{25}$ × 100% = 6.4%

No. of shares purchased= 60
Then dividend on 60 shares = 60 × ₹ 1.60 = ₹ 96

Question 3.
Hundred rupee shares of a company are available in the market at a premium of ₹ 20. Find the rate of dividend given by the company, when a man's return on his investment is 15%.

Solution:
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 100 + ₹ 20 = ₹ 120
Profit% on investment of 1 share =15%

Then profit= 15% of ₹ 120 = ₹ 18

∴ Dividend% = $\frac{18}{100}$ × 100% = 18%

Question 4.
₹ 50 shares of a company are quoted at a discount of 10%. Find the rate of dividend given by the company, the return on the investment on these shares being 20 percent.

Solution:
Nominal value of 1 share = ₹ 50
Market value of 1 share = ₹ 50 – 10% of ₹ 50
= ₹ 50 – ₹ 5 = ₹ 45

Profit % on investment = 20%
Then profit on 1 share = 20% of ₹ 45 = ₹ 9
∴ Dividend% = $\frac{9}{50}$ × 100% = 18%

Question 5.
A company declares 8 percent dividend to the share holders. If a man receives ₹ 2,840 as his dividend, find the nominal value of his shares.

Solution:
Dividend% = 8%
Dividend = ₹ 2,840
Let nominal value of shares = ₹ y
then 8% of y = ₹ 2,840

$\Rightarrow \frac{8}{100} \times y = ₹ 2,840$
$\Rightarrow y = ₹ 35000$

Question 6.
How much should a man invest in ₹ 100 shares selling at ₹ 110 to obtain an annual income of ₹ 1,680, if the dividend declared is 12%?

Solution:
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 110
Let no. of shares purchased = n
Then nominal value of n shares = ₹ (100n)
Dividend% = 12%
Dividend = ₹ 1,680

$$\therefore \quad 12\% \text{ of } 100n = Rs\,1,680$$
$$\Rightarrow \frac{12}{100} \times 100n = Rs\,1,680$$
$$\Rightarrow n = \frac{1,680 \times 100}{12 \times 100} = 140$$

Then market value of 140 shares= 140 × 110 = ₹ 15,400

Question 7.
A company declares a dividend of 11.2% to all its share-holders. If its ₹ 60 share is available in the market at a premium of 25%, how much should Rakesh invest, in buying the shares of this company, in order to have an annual income of ₹ 1,680?

Solution:
Nominal value of 1 share = ₹ 60
Market value of 1 share = ₹ 60+ 25% of ₹ 60
= ₹ 60 + ₹ 15 = ₹ 75

Let no. of shares purchased = n
Then nominal value of n shares = ₹ (60n)
Dividend% = 11.2%
Dividend = ₹ 1,680

$$\therefore \quad 11.2\% \text{ of } 60n = Rs1,680$$

$$\Rightarrow \frac{11.2}{100} \times 60n = Rs1,680$$

$$\Rightarrow \quad n = \frac{1,680 \times 100}{11.2 \times 60} = 250$$

Then market value of 250 shares = 250 × 75 = ₹ 18,750

Question 8.
A man buys 400, twenty-rupee shares at a premium of ₹ 4 each and receives a dividend of 12%. Find:
(i) the amount invested by him.
(ii) his total income from the shares.
(iii) percentage return on his money.

Solution:
Nominal value of 1 share = ₹ 20
Market value of 1 share = ₹ 20 + ₹ 4 = ₹ 24
No. of shares purchased = 400
Nominal value of 400 shares = 400 × 20 = ₹ 8,000

(i) Market value of 400 shares = 400 × 24 = ₹ 9,600

(ii) Dividend% = 12%
Dividend = 12% of Rs8,000

$$= \frac{12}{100} \times Rs8,000 = Rs960$$

(iii)

$$\therefore \quad \text{Percentage return} = \frac{\text{income}}{\text{investment}} \times 100\%$$

$$= \frac{960}{9,600} \times 100\% = 10\%$$

Question 9.
A man buys 400, twenty-rupee shares at a discount of 20% and receives a return of 12% on his money. Calculate:
(i) the amount invested by him.
(ii) the rate of dividend paid by the company.

Solution:
Nominal value of 1 share = ₹ 20
Market value of 1 share = ₹ 20 – 20% of ₹ 20

= ₹ 20 – ₹ 4 = ₹ 16
No. of shares purchased = 400
Nominal value of 400 shares = 400 x 20 = ₹ 8,000

(i) Market value of 400 shares = 400 x 16 = ₹ 6,400
(ii) Return%= 12%
Income = 12% of ₹ 6,400

$$= \frac{12}{100} \times Rs6,400 = Rs768$$

$$\text{Dividend\%} = \frac{\textit{Income}}{\textit{Nominal value}} \times 100\%$$

$$= \frac{768}{8,000} \times 100\% = 9.6\%$$

Question 10.
A company, with 10,000 shares of ₹ 100 each, declares an annual dividend of 5%.
(i) What is the total amount of dividend paid by the company?
(ii) What should be the annual income of a man who has 72 shares in the company?
(iii) If he received only 4% of his investment, find the price he paid for each share.

Solution:
Nominal value of 1 share = ₹ 100
Nominal value of 10,000 shares = 10,000 x ₹ 100 = ₹ 10,00,000

(i) Dividend% = 5%
Dividend = 5% of ₹ 10,00,000
$= \frac{5}{100} \times 10,00,000 = ₹ 50,000$

(ii) Nominal value of 72 shares= ₹ 100 x 72 = ₹ 7,200
Dividend = 5% of ₹ 7,200
$= \frac{5}{100} \times 7,200 = ₹ 360$

(iii) Let market value of 1 share = ₹ y
Then market value of 10,000 shares = ₹ (10,000y)

Return% = 4%
then 4% of ₹ 10,000y = ₹ 50,000

$\Rightarrow \frac{4}{100} \times 10,000y = ₹ 50,000$
$\Rightarrow y = ₹ 125$

Question 11.
A lady holds 1800, ₹ 100 shares of a company that pays 15% dividend annually. Calculate her annual dividend. If she had bought these shares at 40% premium, what is the return she gets as percent on her investment. Give your answer to the nearest integer.

Solution:
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 100 + 40% of ₹ 100
= ₹ 100 + ₹ 40 = ₹ 140

No. of shares purchased = 1800
Nominal value of 1800 shares = 1800 × 100 = ₹ 1,80,000
Market value of 1800 shares= 1800 × 140 = ₹ 2,52,000

(i)Dividend% = 15%
Dividend = 15% of ₹ 1,80,000

$$= \frac{15}{100} \times Rs1,80,000 = Rs27,000 \text{ Ans.}$$

(ii)

$$\therefore \text{ Return\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$

$$= \frac{27,000}{2,52,000} \times 100\% = 10.7\% = 11\%$$

Question 12.
A man invests ₹ 11,200 in a company paying 6 percent per annum when its ₹ 100 shares can be bought for ₹ 140. Find:
(i) his annual dividend
(ii) his percentage return on his investment.

Solution:
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 140
Total investment = ₹ 11,200

No of shares purchased = $\frac{11,200}{140}$ = 80 shares
Then nominal value of 80 shares= 80 × 100= ₹ 8,000

(i) Dividend% = 6%
Dividend = 6% of ₹ 8,000

$$= \frac{6}{100} \times Rs8,000 = Rs480$$

(ii)

$$\text{Return\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$

$$= \frac{480}{11,200} \times 100\%$$

$$= 4.29\%$$

Question 13.
Mr. Sharma has 60 shares of nominal value ₹ 100 and decides to sell them when they are at a premium of 60%. He invests the proceeds in shares of nominal value ₹ 50, quoted at 4% discount, and paying 18% dividend annually. Calculate :
(i) the sale proceeds
(ii) the number of shares he buys and
(iii) his annual dividend from the shares.

Solution:
1st case
Nominal value of 1 share = ₹ 100

Nominal value of 60 shares = ₹ 100 × 60= ₹ 6,000
Market value of 1 share = ₹ 100 + 60% of ₹ 100
= ₹ 100+ ₹ 60 = ₹ 160

Market value of 60 shares = ₹ 160 × 60 = ₹ 9,600 Ans.

(ii) Nominal value of 1 share = ₹ 50
Market value of 1 share= ₹ 50 – 4% of ₹ 50
= ₹ 50 – ₹ 2 = ₹ 48
No of shares purchased = $\frac{9,600}{48}$ = 200 shares

(iii) Nominal value of 200 shares = ₹ 50 × 200 = ₹ 10,000
Dividend% = 18%
Dividend = 18% of ₹ 10,000

= $\frac{18}{100}$ × 10,000 = ₹ 1800

Question 14.
A company with 10,000 shares of nominal value ₹ 100 declares an annual dividend of 8% to the share-holders.
(i) Calculate the total amount of dividend paid by the company.
(ii) Ramesh had bought 90 shares of the company at ₹ 150 per share. Calculate the

dividend he receives and the percentage of return on his investment.

Solution:
(i) Nominal value of 1 share = ₹ 100
Nominal value of 10,000 shares = ₹ 100 × 10,000 = ₹ 10,00,000
Dividend% = 8%
Dividend = 8% of ₹ 10,00,000
$= \frac{8}{100}$ × 10,00,000 = ₹ 80,000

(ii) Market value of 90 shares = ₹ 150 × 90 = ₹ 13,500
Nominal value of 90 shares = ₹ 100 × 90 = ₹ 9,000
Dividend = 8% of ₹ 9,000
$= \frac{8}{100}$ × 9,000 = ₹ 720

(iii)

$$\text{Return\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$

$$= \frac{720}{13,500} \times 100\%$$

$$= 5\frac{1}{3}\%$$

Question 15.
Which is the better investment :
16% ₹ 100 shares at 80 or 20% ₹ 100 shares at 120?

Solution:
1st case
16% of ₹ 100 shares at 80 means;
Market value of 1 share = ₹ 80
Nominal value of 1 share = ₹ 100
Dividend = 16%
Income on ₹ 80= 16% of ₹ 100 = ₹ 16

Income on ₹ 1 = $\frac{16}{80}$ = ₹ 0.20

2nd case
20% of ₹ 100 shares at 120 means;
Market value of 1 share = ₹ 120

Nominal value of 1 share = ₹ 100
Dividend = 20%

Income on ₹ 120 = 20% of ₹ 100= ₹ 20

Income on ₹ 1 = $\frac{20}{120}$ = ₹ 0.17

Then 16% ₹ 100 shares at 80 is better investment.

Question 16.
A man has a choice to invest in hundred-rupee shares of two firms at ₹ 120 or at ₹ 132. The first firm pays a dividend of 5% per annum and the second firm pays a dividend of 6% per annum. Find:
(i) which company is giving a better return.
(ii) if a man invests ₹ 26,400 with each firm, how much will be the difference between the annual returns from the two firms.

Solution:
(i) 1st firm
Market value of 1 share = ₹ 120
Nominal value of 1 share = ₹ 100
Dividend = 5%
Income on ₹ 120 = 5% of ₹ 100 = ₹ 5

Income on ₹ 1 = $\frac{5}{120}$ = ₹ 0.041

2nd firm
Market value of 1 share = ₹ 132
Nominal value of 1 share = ₹ 100

Dividend = 6%
Income on ₹ 132 = 6% of ₹ 100 = ₹ 6

Income on ₹ 1 = $\frac{6}{132}$ = ₹ 0.045
Then investment in second company is giving better return.

(ii) Income on investment of ₹ 26,400 in fi₹ t firm

= $\frac{5}{120}$ × 26,400 = ₹ 1,100
Income on investment of ₹ 26,400 in second firm

= $\frac{6}{132}$ × 26,400 = ₹ 1,200

∴ Difference between both returns = ₹ 1,200 – ₹ 1,100 = ₹ 100

Question 17.
A man bought 360, ten-rupee shares of a company, paying 12% per annum. He sold the shares when their price rose to ₹ 21 per share and invested the proceeds in five-rupee shares paying 4.5 percent per annum at ₹ 3.50 per share. Find the annual change in his income.

Solution:
1st case
Nominal value of 1 share = ₹ 10
Nominal value of 360 shares = ₹ 10 × 360 = ₹ 3,600

Market value of 1 share = ₹ 21
Market value of 360 shares = ₹ 21 × 360 = ₹ 7,560
Dividend% = 12%

Dividend = 12% of ₹ 3,600
$= \frac{12}{100} \times 3{,}600 = ₹\ 432$

2nd case
Nominal value of 1 share= ₹ 5
Market value of 1 share= ₹ 3.50

∴ No of shares purchased = $\frac{7{,}560}{3.50}$ = 2,160 shares
Nominal value of 2160 shares=₹ 5 × 2160= ₹ 10,800

Dividend%= 4.5%
Dividend= 4.5% of ₹ 10,800

$= \frac{4.5}{132} \times 10{,}800 = ₹\ 486$

Annual change in income = ₹ 486 – ₹ 432
= ₹ 54 increase

Question 18.
A man sold 400 (₹ 20) shares of a company, paying 5% at ₹ 18 and invested the proceeds in (₹ 10) shares of another company paying 7% at ₹ 12. How many (₹ 10) shares did he buy and what was the change in his income?

Solution:
1st case
Nominal value of 1 share = ₹ 20
Nominal value of 400 shares = ₹ 20 x 400= ₹ 8,000

Market value of 1 share = ₹ 18
Market value of 400 shares = ₹ 18 x 400= ₹ 7,200
Dividend% = 5%
Dividend = 5% of ₹ 8,000
$= \frac{5}{100}$ × 8,000 = ₹ 400

2nd case
Nominal value of 1 share = ₹ 10
Market value of 1 share = ₹ 12

∴ No of shares purchased = $\frac{7,200}{12}$ = 600 shares
Nominal value of 600 shares = ₹ 10 x 600 = ₹ 6,000
Dividend% = 7%
Dividend = 7% of ₹ 6,000

$= \frac{7}{100}$ × 6,000 = ₹ 420
Annual change in income = ₹ 420 – ₹ 400
= ₹ 20 increase

Question 19.
Two brothers A and B invest ₹ 16,000 each in buying shares of two companies. A buys 3% hundred-rupee shares at 80 and B buys ten-rupee shares at par. If they both receive equal dividend at the end of the year, find the rate per cent of the dividend received by B.

Solution:
For A
Total investment = ₹ 16,000
Nominal value of 1 share = ₹ 100
Market value of 1 share = ₹ 80

∴ No of shares purchased = $\frac{16,000}{80}$ = 200 shares
Nominal value of 200 shares = ₹ 100 × 200 = ₹ 20,000
Dividend% = 3%
Dividend = 3% of ₹ 20,000

$= \frac{3}{100}$ × 20,000 = ₹ 600
For B
Total investment= ₹ 16,000

Nominal value of 1 share= ₹ 10

Market value of 1 share= ₹ 10

∴ No of shares purchased = $\frac{16,000}{10}$ = 1600 shares
Nominal value of 1600shares= 10 × 1600= ₹ 16,000
Dividend received by B = Dividend received by A = ₹ 600

$$\text{Dividend\%} = \frac{\text{Dividend}}{\text{Nominal value}} \times 100\%$$
$$= \frac{600}{16,000} \times 100\%$$
$$= 3.75\%$$

Question 20.
A man invests ₹ 20,020 in buying shares of nominal value ₹ 26 at 10% premium. The dividend on the shares is 15% per annum. Calculate :
(i) the number of shares he buys.
(ii) the dividend he receives annually.
(iii) the rate of interest he gets on his money.

Solution:
Total investment = ₹ 20,020
Nominal value of 1 share = ₹ 26
Market value of 1 share = ₹ 26+ 10% of ₹ 26
= ₹ 26+ ₹ 2.60 = ₹ 28.60

∴ No of shares purchased = $\frac{20,020}{28.60}$ = 700 shares
Nominal value of 700 shares= ₹ 26 x 700 = ₹ 18,200

Dividend% = 15%
Dividend = 15% of ₹ 18,200

= $\frac{15}{100}$ × 18,200 = ₹ 2,730

$$\therefore \text{Income\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$
$$= \frac{2,730}{20,020} \times 100\% = \frac{150}{11}\% = 13\frac{7}{11}\%$$

Exercise 3C

Question 1.
By investing ₹ 45,000 in 10% ₹ 100 shares, Sharad gets ₹ 3,000 as dividend. Find the market value of each share.

Solution:

Annual income from 1 share = 10% of Rs. 100 = Rs. 10

Total annual income = Rs. 3000

$$\therefore \text{Number of shares bought} = \frac{\text{Total annual income}}{\text{Annual income from 1 share}} = \frac{3000}{10} = 300$$

$$\Rightarrow \text{Market value of one share} = \frac{\text{Total investment}}{\text{Number of shares}} = \frac{45000}{300} = \text{Rs. } 150$$

Question 2.
Mrs. Kulkarni invests ₹ 1, 31,040 in buying ₹ 100 shares at a discount of 9%. She sells shares worth Rs.72,000 at a premium of 10% and the rest at a discount of 5%. Find her total gain or loss on the whole.

Solution:

Investment = Rs. 131040

N.V. of 1 share = Rs. 100

Discount = 9% of Rs. 100 = Rs. 9

$\therefore$ M.V. of 1 share = Rs. 100 – Rs. 9 = Rs. 91

$$\therefore \text{Number of shares purchased} = \frac{\text{Investment}}{\text{M.V. of 1 share}} = \frac{131040}{91} = 1440$$

$$\text{Number of shares worth Rs. } 72000 = \frac{72000}{100} = 720$$

$\therefore$ Mrs. Kulkarni sells 720 shares at a premium of 10%

M.V. of 1 share = Rs. 100 + Rs. 10 = Rs. 110

$\therefore$ Selling price of 720 shares = 720 x Rs. 110 = Rs. 79200

Number of remaining shares = 1440 – 720 = 720

She sells 720 shares at a discount of 5%

M.V. of 1 share = Rs. 100 – Rs. 5 = Rs. 95

∴ Selling price of 720 shares = 720 × Rs. 95 = Rs. 68400

∴ Total selling price = Rs. (79200 + 68400) = Rs. 147600

∴ Total gain = Total selling price – Total investment

= Rs. (147600 – 131040)

= Rs. 16560

Question 3.

A man invests a certain sum on buying 15% ₹ 100 shares at 20% premium. Find :

(i) His income from one share

(ii) The number of shares bought to have an income, from the dividend, ₹ 6480

(iii) Sum invested

Solution:

(i) Dividend on one share = 15% of Rs. 100

$$= \text{Rs. } \left(\frac{15}{100} \times 100\right)$$

= Rs. 15

So, the income from one share is Rs. 15.

(ii) Number of shares bought by the man

$$= \frac{\text{annual income}}{\text{dividend on one share}}$$

$$= \frac{6480}{15}$$

= Rs. 432

(iii) Since the man bought shares of Rs. 100 at 20% premium, the market value of one share

$$= \text{Rs. } \left(1 + \frac{20}{100}\right) \times 100$$

$$= \text{Rs. } \left(\frac{120}{100} \times 100\right)$$

= Rs. 120

∴ His total investment = number of shares × market value of one share

= 432 × 120

= Rs. 51, 840

Question 4.

Gagan invested ₹ 80% of his savings in 10% ₹ 100 shares at 20% premium and the rest of his savings in 20% ₹ 50 shares at ₹ 20% discount. If his incomes from these shares is

₹ 5,600 calculate:
(i) His investment in shares on the whole
(ii) The number of shares of first kind that he bought
(iii) Percentage return, on the shares bought on the whole.

Solution:

(i) Let the total savings be Rs. x.

For 1st part:

N.V. of each share = Rs. 100

$$\text{M.V. of each share} = 100 + \frac{20}{100}(100) = \text{Rs. } 120$$

$$\text{Number of shares bought} = \frac{0.8x}{120} \quad \text{...(Investment = Rs. } x\text{)}$$

Dividend on each share = 10% of 100 = Rs. 10 ...(Rate = 10%)

$$\text{Total dividend} = 10 \times \frac{0.8x}{120} = \text{Rs.} \frac{0.8x}{12}$$

For 2nd part:

N.V. of each share = Rs. 50

$$\text{M.V. of each share} = 50 - \frac{20}{100}(50) = \text{Rs. } 40$$

$$\text{Number of shares bought} = \frac{0.2x}{40} \quad \text{...(Investment = Rs. } x\text{)}$$

Dividend on each share = 20% of 50 = Rs. 10 ...(Rate = 20%)

$$\text{Total dividend} = 10 \times \frac{0.2x}{40} = \frac{0.2x}{4}$$

Given that dividends (incomes) from both the investments are is Rs. 5600.

$$\Rightarrow \frac{0.8x}{12} + \frac{0.2x}{4} = 5600$$

$$\Rightarrow \frac{0.8x + 0.6x}{12} = 5600$$

$$\Rightarrow x = \frac{5600 \times 12}{1.4}$$

$$\Rightarrow x = 48,000$$

Thus, his investment in shares on the whole is Rs. 48,000.

(ii) So, number of shares bought $= \frac{0.8x}{120} = \frac{0.8 \times 48,000}{120} =$ Rs. 320

(iii) The total dividend (return) $= \frac{0.8x}{12} + \frac{0.2x}{4}$

$= \frac{0.8(48,000)}{12} + \frac{0.2(48,000)}{4}$

$= 0.8 \times 4,000 + 0.2 \times 12,000$

= Rs. 5600

Percentage return $= \frac{5600}{48,000} \times 100 = 11\frac{2}{3}\%$

Question 5.
Ashwarya bought 496, ₹ 100 shares at ₹ 132 each, find :
(i) Investment made by her
(ii) Income of Ashwarya from these shares, if the rate of dividend is 7.5%.
(iii) How much extra must ashwarya invest in order to increase her income by ₹ 7,200.

Solution:

(i) N.V. of each share = Rs. 100
M.V. of each share = Rs. 132
Investment made by her = 496×132 = Rs. 65, 472

(ii) Dividend on 1 share = 7.5% of Rs. 100 = Rs. 7.5
So, income of Ashwarya from these shares = 496×7.5 = Rs. 3,720

(iii) If she wants to increase her income by Rs. 7,200,
the number of shares she should buy $= \frac{\text{increase in the income}}{\text{income of one share}} = \frac{7,200}{7.5} =$ Rs. 960
So, she should invest = 960×7.5 = Rs. 1,26,720

A company pays a dividend of 15% on its ₹ 100 shares from which income tax at the rate of 20% is deducted. Find :

(i) The net annual income of Gopal who owns 7,200 shares of this company
(ii) The sum invested by Ramesh when the shares of this company are bought by him at 20% premium and the gain required by him(after deduction of income tax) is ₹ 9,000

Solution:

(i) Let the number of shares be x.

Annual income = Rate of dividend × Nominal Value × Number of shares

$$= \frac{15}{100} \times 100 \times x$$

$$= 15x \quad .....(i)$$

Since the income tax is given to be 20% which is deducted,

$$15x - 20\% \text{ of } 15x = 15x - \frac{20}{100}(15x) = 15x - 3x = 12x$$

Thus, the net annual income of Gopal who owns 7,200 shares of this company

$= 12x$

$= 12(7,200)$

= Rs. 86,400

(ii) Let the sum invested by him be Rs. S.

N.V. of each share = Rs. 100

M.V. of each share = Rs. 100 + 20% of Rs. 100 = Rs. 120

$$\text{Number of each share} = \text{Rs. } \frac{S}{120}$$

Dividend on each share = Rs. 15% of Rs. 100 = Rs. 15

$$\text{Total dividend} = \text{Rs. } 15 \times \frac{S}{120} = \text{Rs. } \frac{S}{8}$$

Since the income tax is given to be 20% which is deducted,

$$\text{The gain} = \frac{S}{8} - \frac{20}{100}\left(\frac{S}{8}\right) = \frac{S}{8} - \frac{S}{40} = \frac{S}{10}$$

Given the gain required by him is Rs. 9000.

$$\text{So, } \frac{S}{10} = 9000$$

$\Rightarrow$ S = Rs. 90,000

Hence, the sum invested by Ramesh is Rs. 90,000.

Mr. Joseph sold some ₹ 100 shares paying 10% dividend at a discount of 25% and invested the proceeds in ₹ 100 shares paying 16% dividend at a discount of 20%. By doing so, his income was increased by ₹ 4,800. Find the number of shares originally held by Mr. Joseph.

Solution:

Let the number of shares be x.

Annual income = Rate of dividend × Nominal Value × Number of shares

$$= \frac{10}{100} \times 100 \times x$$

$$= 10x \quad \ldots\ldots(i)$$

Since each share is sold at a discount of 25%,

selling price of one share = Rs. $100 - \frac{25}{100}$ = Rs.75

So, selling price of x shares = Rs. 75x

The proceeds = the new investment = Rs. 75x

Here the N.V. = Rs. 100

M.V. of each share = Rs. 80

Rate of dividend = 16%

Number of shares = $\frac{75x}{80}$

Annual income = Rate of dividend × Nominal Value × Number of shares

$$= \frac{16}{100} \times 100 \times \frac{75x}{80}$$

$$= 15x \quad \ldots\ldots(ii)$$

From (i) and (ii), we get

$15x - 10x = 4800$

$\Rightarrow 5x = 4800$

$\Rightarrow x = 960$

So, the number of shares originally were 960.

Question 6.

Gopal has some ₹ 100 shares of company A, paying 10% dividend. He sells a certain number of these shares at a discount of 20% and invests the proceeds in ₹ 100 shares at ₹ 60 of company B paying 20% dividend. If his income, from the shares sold, increases by ₹ 18,000, find the number of shares sold by Gopal.

Solution:

Let the number of shares the man sold be x.
N.V. of share = Rs.100
Rate of dividend = 10%
Dividend on each share = 10% of Rs. 100 = Rs.10
So, the dividend on x shares = Rs. 10 × x = Rs. 10x
Selling price of each share = Rs.100 – 20% of Rs. 100 = Rs. 80
Amount obtained on selling x shares = Rs. 80 × x = Rs. 80x
The proceeds he invested in Rs. 100 shares at Rs. 60 of company B paying 20% dividend.
N.V. of share = Rs.100
M.V. of each share = Rs. 60 = Rs. 60

$$\text{Number of shares bought by the man} = \frac{\text{Amount invested}}{\text{M.V. of each share}}$$

$$= \frac{80x}{60}$$

$$= \frac{4x}{3}$$

Dividend on each share = 20% of Rs. 100 = Rs. 20
Total dividend received = Dividend on each share × Number of shares

$$= 20 \times \frac{4x}{3}$$

$$= \frac{80x}{3}$$

Increase in the income = Rs. 18,000

$$\Rightarrow \frac{80x}{3} - 10x = 18,000$$

$$\Rightarrow \frac{50x}{3} = 18,000$$

x = Rs. 1080
Hence, the number of shares sold by Gopal is Rs. 1080.

Question 7.

A man invests a certain sum of money in 6% hundred-rupee shares at ₹ 12 premium. When the shares fell to ₹ 96, he sold out all the shares bought and invested the proceed in 10%, ten-rupee shares at ₹ 8. If the change in his income is ₹ 540, Find the sum

invested originally

Solution:

Let the riginal sum invested = x

Then number of Rs. 100 shares purchased at premium of Rs. 12

$= \frac{x}{100+12} = \frac{x}{112}$

The income per original share at 6% = Rs. 6

Total Income = (Number of shares) × (earning per share)

$= (\text{Number of shares}) \times 6 = \frac{x}{112} \times 6 = \frac{3x}{56}$

Proceeds from sale of original shares at Rs. 96 per share

$= (\text{Number of Shares}) \times 96 = \frac{x}{112} \times 96 = \frac{6x}{7}$

Number of Rs. 10 shares purchased at Rs. 8 per share from proceeds of original shares

$= \frac{(\text{Proceeds from sale of original shares})}{8} = \frac{\frac{6x}{7}}{8} = \frac{3x}{28}$

Income per new share of Rs. 10 at 10% $= \frac{10}{100} \times 10 = \text{Rs. } 1$

Total income from new shares

= (Number of shares) × (Income per share)

$= \frac{3x}{28} \times 1 = \frac{3x}{28}$

Given change in income = 540

Income from old shares – Income from new shares = 540

$\therefore 540 = \frac{3x}{28} - \frac{3x}{56} = \frac{3x}{56}$

$\therefore x = \frac{540}{\frac{3}{56}} = 10{,}080$

Thus, the original sum invested is Rs.10,080.

Question 8.

Mr. Gupta has a choice to invest in ten-rupee shares of two firms at ₹ 13 or at ₹ 16. If the first firm pays 5% dividend and the second firm pays 6% dividend per annum, find:

(i) which firm is paying better.

(ii) if Mr. Gupta invests equally in both the firms and the difference between the returns from them is ₹ 30, find how much, in all, does he invest.

Solution:
(i) 1st firm
Nominal value of 1 share = ₹ 10
Market value of 1 share = ₹ 13
Dividend% = 5%
Dividend = 5% of ₹ 10 = ₹ 0.50

$$\therefore \text{Income\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$
$$= \frac{0.50}{13} \times 100\% = 3.846\%$$

2nd firm
Nominal value of 1 share = ₹ 10
Market value of 1 share = ₹ 16
Dividend% = 6%
Dividend = 6% of ₹ 10 = ₹ 0.60

$$\therefore \text{Income\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$
$$= \frac{0.60}{16} \times 100\% = 3.75\%$$

Then first firm is paying better than second firm.

(ii) Let money invested in each firm = ₹ y

For 1st firm

$$\therefore \text{No. of shares purchased} = \frac{y}{13} \text{ shares}$$

$$\text{Total dividend} = \text{Rs}0.50 \times \frac{y}{13} = \text{Rs}\frac{y}{26}$$

For 2nd firm

$$\therefore \text{No. of shares purchased} = \frac{y}{16} \text{ shares}$$

$$\text{Total dividend} = \text{Rs}0.60 \times \frac{y}{16} = \text{Rs}\frac{3y}{80}$$

Given- difference of both dividend= Rs30

$$\Rightarrow \quad \frac{y}{26} - \frac{3y}{80} = \text{Rs}30$$

$$\Rightarrow \quad \frac{y}{1040} = Rs30$$
$$\Rightarrow \quad y = Rs30 \times 1040 = Rs31,200$$

Total money invested in both firms = ₹ 31,200 × 2
= ₹ 62,400

Question 9.
Ashok invested Rs. 26,400 in 12%, Rs. 25 shares of a company. If he receives a dividend of Rs. 2,475, find the :
(i) number of shares he bought.
(ii) market value of each share.

Solution:

(i) Total dividend = Rs. 2,475

$$\text{And, dividend on each share} = 12\% \text{ of Rs. } 25 = \frac{12}{100} \times \text{Rs. } 25 = \text{Rs. } 3$$

$$\therefore \text{ Number of shares bought} = \frac{\text{Total dividend}}{\text{Dividend on 1 share}} = \frac{2475}{3} = 825$$

(ii) Market value of 825 shares = Rs. 26,400

$$\therefore \text{ Market value of each share} = \frac{\text{Total investment}}{\text{No. of shares}} = \frac{26400}{825} = \text{Rs. } 32$$

Question 10.
A man invested ₹ 45,000 in 15% Rs100shares quoted at ₹ 125. When the market value of these shares rose to ₹ 140, he sold some shares, just enough to raise ₹ 8,400. Calculate:
(i) the number of shares he still holds;
(ii) the dividend due to him on these remaining shares.

Solution:

(i) Total investment = ₹ 45,000
Market value of 1 share = ₹ 125

$$\therefore \text{ No of shares purchased} = \frac{45,000}{125} = 360 \text{ shares}$$

Nominal value of 360 shares = ₹ 100 × 360= ₹ 36,000

Let no. of shares sold = n
Then sale price of 1 share = ₹ 140
Total sale price of n shares = ₹ 8,400

Then n = $\frac{8,400}{140}$ = 60 shares
The no. of shares he still holds = 360 – 60 = 300

(ii) Nominal value of 300 shares = ₹ 100 × 300 = ₹ 30,000
Dividend% = 15%
Dividend = 15% of ₹ 30,000

= $\frac{15}{100}$ × 30,000 = ₹ 4,500

Question 11.
Mr.Tiwari. invested ₹ 29,040 in 15% Rs100 shares quoted at a premium of 20%.
Calculate:
(i) the number of shares bought by Mr. Tiwari.
(ii) Mr. Tiwari's income from the investment.
(iii) the percentage return on his investment.

Solution:
Total investment = ₹ 29,040
Nominal value of 1 share = ₹ 100

Market value of 1 share = ₹ 100+ 20% of ₹ 100
= ₹ 100 + ₹ 20 = ₹ 120
∴ No of shares purchased = $\frac{29,040}{120}$ = 242 shares
Nominal value of 242 shares = ₹ 100 x 242 = ₹ 24,200
Dividend% = 15%
Dividend = 15% of ₹ 24,200

= $\frac{15}{100}$ × 24,200 = ₹ 3,630

$$\text{Income\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$$
$$= \frac{3,630}{29,040} \times 100\%$$
$$= 12.5\%$$

Question 12.
A dividend of 12% was declared on ₹ 150 shares selling at a certain price. If the rate of return is 10%, calculate:
(i) the market value of the shares.
(ii) the amount to be invested to obtain an annual dividend of ₹ 1,350.

Solution:

(i)Nominal value of 1 share= Rs150
Dividend%= 12%
Dividend on I share= 12% of Rs150

$$= \frac{12}{100} \times Rs150 = Rs18$$

Let market value of 1 share= Rs y
Return%= 10%
10% of Rs(y) =Rs 18

$$\Rightarrow \frac{10}{100} \times y = Rs\ 18$$

$$\Rightarrow y = Rs\ 180$$

(ii)when dividend is Rs18, then investment is Rs180
When dividend is Rs1,350, then investment

$$= \frac{180}{18} \times Rs1,350$$

=Rs 13, 500

Question 13.
Divide ₹ 50,760 into two parts such that if one part is invested in 8% ₹ 100 shares at 8% discount and the other in 9% ₹ 100 shares at 8% premium, the annual incomes from both the investments are equal.

Solution:
Total investment= Rs50,760
Let 1st part= Rs y
2nd part= Rs(50,760-y)
For 1st part
Nominal value of 1 share= Rs100
Market value of 1 share= Rs100 - 8% of Rs100
= Rs100 - Rs8= Rs92

$$\therefore \text{ No. of shares purchased} = \frac{y}{92} \text{ shares}$$

Dividend%= 8%
Dividend on 1 share= 8% of Rs100= Rs8

$$\text{Total dividend} = \frac{y}{92} \times Rs8 = Rs\frac{2y}{23}$$

For 2nd part

Nominal value of 1 share= Rs100

Market value of 1 share= Rs100 + 8% of Rs100

= Rs100 + Rs8= Rs108

$\therefore$ No. of shares purchased $= \frac{50760 - y}{108}$ shares

Dividend%= 9%

Dividend on 1 share= 9% of Rs100= Rs9

Total dividend $= \frac{50760 - y}{108} \times Rs9 = Rs\frac{9(50760 - y)}{108}$

Given that both dividend are equal

Then $Rs\frac{2y}{23} = Rs\frac{9(50760 - y)}{108}$

$\Rightarrow \quad 2y \times 108 = 23(456840 - 9y)$

$\Rightarrow \quad 216y = 456840 \times 23 - 207y$

$\Rightarrow \quad 423y = 456840 \times 23$

$\Rightarrow \quad y = \frac{456840 \times 23}{423} = Rs24,840$

1st part= Rs24,840

2nd part= Rs50760 - Rs24,840= Rs25,920 Ans.

Question 14.

Mr. Shameem invested 33 1/3% of his savings in 20% ₹ 50 shares quoted at ₹ 60 and the remainder of the savings in 10% ₹ 100 share quoted at ₹ 110. If his total income from these investments is ₹ 9,200; find :

(i) his total savings

(ii) the number of ₹ 50 share

(iii) the number of ₹ 100 share.

Solution:

Let his total savings is Rs y

1st case

His saving= $33\frac{1}{3}\%$ of y = $Rs\frac{y}{3}$

Market price of 1 share= Rs60

Then shares purchased= $\frac{y}{3 \times 60} = \frac{y}{180}$

Dividend on 1share= 20% of Rs50= Rs10

Total dividend= $\frac{y}{180} \times 10 = Rs\frac{y}{18}$

2nd case

His saving= $66\frac{2}{3}\%$ of y= Rs $\frac{2y}{3}$

Market price of 1share= Rs110

Then shares purchased = $\frac{2y}{3 \times 110} = \frac{y}{165}$

Dividend on 1share= 10% of Rs100= Rs10

Total dividend= $\frac{y}{165} \times 10 = Rs\frac{2y}{33}$

According to question

Total income = Rs9,200

$\Rightarrow \frac{y}{18} + \frac{2y}{33} = Rs9,200$

$\Rightarrow \frac{23y}{198} = Rs9,200$

$\Rightarrow y = \frac{9,200 \times 198}{23} = Rs79,200$ Ans.

The number of Rs50share= $\frac{79,200}{180} = 440$ Ans.

The number of Rs100 share= $\frac{79,200}{165} = 480$ Ans.

Question 15.

Vivek invests ₹ 4,500 in 8%, ₹ 10 shares at ₹ 5. He sells the shares when the price rises to ₹ 30, and invests the proceeds in 12% ₹ 100 shares at ₹ 125. Calculate :

(i) the sale proceeds

(ii) the number of ₹ 125 shares he buys.

(iii) the change in his annual income from dividend.

Solution:

1st case

Total investment = ₹ 4,500

Market value of 1 share = ₹ 15

∴ No of shares purchased = $\frac{4,500}{15}$ = 300 shares

Nominal value of 1 share = ₹ 10

Nominal value of 300 shares = ₹ 10 × 300= ₹ 3,000
Dividend = 8% of ₹ 3,000

$= \frac{8}{100}$ × 3,000 = ₹ 240
Sale price of 1 share = ₹ 30
Total sale price= ₹ 30 × 300= ₹ 9,000

(ii) new market price of 1 share= ₹ 125

∴ No of shares purchased = $\frac{9,000}{125}$ = 72 shares

(iii) New nominal value of 1 share= ₹ 100
New nominal value of 72 shares = ₹ 100 × 72 = ₹ 7,200
Dividend% = 12%
New dividend = 12% of ₹ 7,200

$= \frac{12}{100}$ × 7,200 = ₹ 864
Change in annual income = ₹ 864 – ₹ 240 = ₹ 624

Question 16.
Mr.Parekh invested ₹ 52,000 on ₹ 100 shares at a discount of ₹ 20 paying 8% dividend. At the end of one year he sells the shares at a premium of ₹ 20. Find:
(i) The annual dividend
(ii) The profit earned including his dividend.

Solution:
Rate of dividend = 8%
Investment = ₹ 52000
Market Rate = ₹ 100 – 20 = ₹ 80

No. of shares purchased = $\frac{52000}{80}$ = 650
(i) Annual dividend = 650 × 8 = ₹ 5200

(ii) On selling, market rate = ₹ 100+20 = ₹ 120
⇒ Sale price = 650 × 120 = ₹ 78000

Profit = ₹ 78000 – ₹ 52000 = ₹ 26000
⇒ Total gain = 26000 + 5200 = ₹ 31200

Question 17.
Salman buys 50 shares of face value ₹ 100 available at ₹ 132.
(i) What is his investment?
(ii) If the dividend is 7.5%, what will be his annual income?
(iii) If he wants to increase his annual income by ₹ 150, how many extra shares should he buy?

Solution:

Number of shares bought = 50
N.V. of one share = Rs. 100
M.V. of each share = Rs. 132

(i) Investment = M.V. of each share × Number of shares
= Rs. 132 × 50
= Rs. 6600

(ii) Since dividend on 1 share = 7.5% of N.V. = $\frac{7.5}{100} \times 100$ = Rs. 7.50
His annual income = Rs. 7.50 × 50 = Rs. 375

(iii) Extra shares to be bought = $\frac{\text{Increase in annual income}}{\text{Income in one share}} = \frac{150}{7.50} = 20$

Question 18.
Salman invests a sum of money in ₹ 50 shares, paying 15% dividend quoted at 20% premium. If his annual dividend is ₹ 600, calculate :
(i) The number of shares he bought.
(ii) His total investment.
(iii) The rate of return on his investment.

Solution:

N.V. of each share = Rs. 50
M.V. of each share = Rs. 50 + 20% of Rs. 50
$= 50 + \frac{20}{100} \times 50$
= 50 + 10
= Rs. 60

Dividend on one share = 15% of Rs. 50 = $\frac{15}{100} \times 50 = 7.5$

(i) Number of shares bought $= \frac{\text{Total dividend}}{\text{Dividend on one share}} = \frac{600}{7.5} = 80$

(ii) His total investment = Number of shares x M.V. of one share
$= 80 \times \text{Rs. } 60$
$= \text{Rs. } 4800$

(iii) Rate of return $= \frac{\text{Total dividend}}{\text{Total investment}} \times 100\% = \frac{600}{4800} \times 100\% = 12.5\%$

Question 19.
Rohit invested ₹ 9,600 on ₹ 100 shares at ₹ 20 premium paying 8% dividend. Rohit sold the shares when the price rose to ₹ 160. He invested the proceeds (excluding dividend) in 10% ₹ 50 shares at ₹ 40. Find the :
(i) Original number of shares.
(ii) Sale proceeds.
(iii) New number of shares.
(iv) Change in the two dividends.

Solution:

(i) 100 shares at Rs. 20 premium means
Nominal value of the share is Rs. 100
and its market value = 100 + 20 = Rs. 120
Money required to buy 1 share = Rs. 120
$\therefore$ Number of shares $= \frac{\text{Money Invested}}{\text{Market Value of 1 Share}} = \frac{9600}{120} = 80$

(ii) Each share is sold at Rs. 160
$\therefore$ Sale Proceeds = 80 x Rs. 160 = Rs. 12, 800

(iii) Now, investment = Rs. 12800
Dividend = 10%
Net Value = 50
Market Value = Rs. 40
$\therefore$ Number of shares $= \frac{\text{Investment}}{\text{Market Value}} = \frac{12800}{40} = 320$

(iv) Now, dividend on 1 share = 10% of N.V. = 10% of 50 = 5
$\Rightarrow$ Dividend on 320 shares = 320 x 5 = 1600
Thus, change in two dividends = 1600 – 640 = 960

Question 20.
How much should a man invest in Rs. 50 shares selling at Rs. 60 to obtain an income of Rs. 450, if the rate of dividend declared is 10%. Also find his yield percent, to the nearest whole number.

Solution:

Face value of each share = Rs. 50

Dividend(%)=10%

$$\text{Dividend on 1 share} = \frac{10}{100} \times 50 = \text{Rs.}5$$

$$\therefore \text{Number of shares bought} = \frac{\text{Total dividend}}{\text{Dividend per share}} = \frac{450}{5} = 90$$

$$\text{Market value of each share} = \text{Rs.}60$$

$$\therefore \text{Total investment} = 90 \times 60 = \text{Rs.}5400$$

$$\text{Percentage return} = \frac{\text{Total dividend}}{\text{Total investment}} \times 100 = \frac{450}{5400} \times 100 = 8.33 \approx 8\%$$