

Chapter 4

Shares and Dividend

POINTS TO REMEMBER

1. The total money needed is called the **Capital** and whole capital is divided with equal small units, called **Shares**.

The person who invests money in shares is called **share holder**.

2. **Dividend**. The annual profit distributed among share holders is called **dividend**.
3. **Nominal Value (N.V.) of a Share**. The value of a share printed on the share certificate is all Nominal Value or Face Value or Par Value.

Note. Dividend is always reckoned on the face value of a share.

4. **Market Value of a Share**. The shares can be bought or sold in the market through stock exchange. The value for which a share is sold or bought in the market is called Market Value. It can be equal, more or less than its face value.

A share is said to be :

- (i) At par, if its market value is the same as its face value.
- (ii) At Premium or Above Par, if its market value is more than its face-value.
- (iii) At Discount or Below Par, if its market value is less than its face-value.

Note. Market Value of a share changes from time to time.

EXERCISE 4

- Q. 1.** Find the market value of 325, Rs. 100 shares at premium of Rs. 18.

Sol. Face value of a share = Rs. 100
 Market value of a share = Rs. 100 + 18
 = Rs. 118

No. of shares = 325

∴ Market value of 325 shares
 = Rs. 118 × 325
 = Rs. 38350 **Ans.**

- Q. 2.** A man buys 500, Rs. 100 shares at Rs. 14 below par. How much money does he pay ?

Sol. Market value of each share

$$= \text{Rs. } 100 - \text{Rs. } 14 = \text{Rs. } 86$$

No. of shares = 500

∴ Total money to be paid for the purchase of 500 shares = Rs. 86 × 500
 = Rs. 43000 **Ans.**

- Q. 3.** How much money will be required to buy 125, Rs.25 shares at a discount of Rs. 7 ?

Sol. No. of shares = 125

Market value of each share

$$= \text{Rs. } 25 - \text{Rs. } 7 = \text{Rs. } 18$$

∴ Total amount to be required
 = Rs. 18 × 125

$$= \text{Rs. } 2250 \text{ Ans.}$$

Q. 4. Find the investment in buying 150, Rs. 30 shares at Rs. 6 above par.

Sol. No. of shares = 150

$$\begin{aligned} \text{Market value of each share} \\ = \text{Rs. } 30 + 6 = \text{Rs. } 36 \end{aligned}$$

$$\begin{aligned} \therefore \text{Total investment required} \\ = \text{Rs. } 36 \times 150 = \text{Rs. } 5400 \text{ Ans.} \end{aligned}$$

Q. 5. Find the dividend received on 260 shares of Rs. 25 each, when 8% dividend is declared.

Sol. No. of shares = 260

Face value of each share = Rs. 25

Rate of dividend = 8%

$$\begin{aligned} \therefore \text{Total investment} &= \text{Rs. } 25 \times 260 \\ &= 6500 \end{aligned}$$

Total dividend received

$$\begin{aligned} &= \text{Rs. } 6500 \times \frac{8}{100} \\ &= \text{Rs. } 520 \text{ Ans.} \end{aligned}$$

Q. 6. If the dividend received from 9% Rs. 20 shares is Rs. 1620, find the number of shares.

Sol. Total dividend = Rs. 1620

Rate = 9%

$$\begin{aligned} \therefore \text{Total investment} &= \text{Rs. } \frac{1620 \times 100}{9} \\ &= \text{Rs. } 180 \times 100 = \text{Rs. } 18000 \end{aligned}$$

Face value of each share = Rs. 20

$$\begin{aligned} \therefore \text{No. of shares} &= \text{Rs. } 18000 \div \text{Rs. } 20 \\ &= 900 \text{ Ans.} \end{aligned}$$

Q. 7. By investing Rs. 12750 in a company, paying 8% dividend, an annual income of Rs. 1200 is received. What is the market value of each Rs. 100 share ?

Sol. Total investment = Rs. 12750

Rate of dividend = 8%

Face value of each share = Rs. 100

Total dividend received = Rs. 1200

$$\therefore \text{No. of shares} = \frac{1200}{8} = 150$$

Now, market value of 150 shares = Rs. 12750

and market value of each share

$$= \text{Rs. } \frac{12750}{150} = \text{Rs. } 85 \text{ Ans.}$$

Q. 8. By investing Rs. 11440 in a company, paying 10% dividend, an annual income of Rs. 520 is received. What is the market value of each Rs. 50 shares ?

Sol. Total investment = Rs. 11440

Rate of dividend = 10%

Annual income = Rs. 520

Face value of each share = Rs. 50

$$\text{No. of shares} = \frac{520 \times 100}{10 \times 50} = 104$$

$$\therefore \text{Market value of 104 shares} = \text{Rs. } 11440$$

\therefore Market value of each share

$$= \text{Rs. } \frac{11440}{104} = \text{Rs. } 110 \text{ Ans.}$$

Q. 9. How much should a man invest in Rs. 25 shares, selling at Rs. 36 to obtain an annual income of Rs. 1500, if the dividend declared is 12% ?

Sol. Face value of each share = Rs. 25

Market value = Rs. 36

Annual income = Rs. 1500

Rate of dividend = 12%

\therefore Total face value of shares

$$= \text{Rs. } \frac{1500 \times 100}{12} = \text{Rs. } 12500$$

For the purchase of Rs. 25 share, investment = Rs. 36

For the purchase of shares of Rs. 12500, investment

$$= \frac{12500 \times 36}{25} = 500 \times 36$$

$$= \text{Rs. } 18000 \text{ Ans.}$$

Q. 10. How much should a man invest in Rs. 100 shares, selling at Rs. 110 to obtain an annual income of Rs. 1520, if the dividend declared is 8% ?

Sol. Face value of each share = Rs. 100

Market value of each share = Rs. 110

Annual income = Rs. 1520

Rate of dividend = 8%

$$\text{Total face value of shares} = \frac{1520 \times 100}{8}$$

$$= \text{Rs. } 19000$$

Total investment for the purchase of shares

$$= \text{Rs. } \frac{19000 \times 110}{100} = \text{Rs. } 190 \times 110$$

$$= \text{Rs. } 20900 \text{ Ans.}$$

Q. 11. What is the percentage interest on the capital invested in 10% shares, when a Rs. 10 share costs Rs. 12 ?

Sol. Income on Rs. 100 = Rs. 10

$$\therefore \text{Income on Rs. } 10 = \text{Rs. } \frac{10 \times 10}{100} = \text{Re. } 1$$

Now, interest on Rs. 12 = Re. 1

$$\therefore \text{Interest\%} = \frac{1 \times 100}{12}$$

$$= \frac{25}{3} = 8\frac{1}{3}\% \text{ Ans.}$$

Q.12. Mohan Lal invested Rs. 29,040 in 15%, Rs. 100 shares of a company quoted at a premium of 20%. Calculate : (2005)

(i) The number of shares bought by Mohan Lal.

(ii) His annual income from shares,

(iii) The percentage return on his investment.

Sol. (i) M.V. of one share

$$= \left[\frac{20}{100} \times 100 + 100 \right]$$

$$= \text{Rs. } 120$$

$$\text{No. of shares} = \frac{\text{Investment}}{\text{M.V. of 1 share}}$$

$$= \text{Rs. } \frac{29040}{120}$$

$$= \text{Rs. } 242 \text{ Ans.}$$

$$(ii) \text{ Income} = 242 \times 15$$

$$= \text{Rs. } 3,630 \text{ Ans.}$$

$$(iii) \therefore \text{rate \%} = \frac{\text{dividend}}{\text{M.V.}} \times 100$$

$$= \frac{15}{120} \times 100 = 12.5\% \text{ Ans.}$$

Q. 13. Amit Kumar invests Rs. 36,000 in buying Rs. 100 shares at Rs. 20 premium. The dividend is 15% per annum. Find :

(i) The number of shares he buys

(ii) His yearly dividend

(iii) The percentage return on his investment.

Give your answer correct to the nearest whole number. (2009)

Sol. Investment by Amit Kumar = Rs. 36000

Face value of each share = Rs. 100

Market value at Rs. 20 premium = Rs. 100 + 20 = Rs. 120

Rate of dividend = 15%

(i) \therefore Number of shares purchased = Rs.

$$\frac{36000}{120} = 300$$

(ii) Yearly dividend = $300 \times 15 = \text{Rs. } 4500$

(iii) Percentage return = $\frac{4500 \times 100}{36000} = 12.5\%$

Q. 14. A man invests Rs. 8800 on buying shares of face value Rs. 100 each at a premium of 10%, If he earns Rs. 1200 at the end of the year as dividend, find :

(i) the number of shares he has in the company.

(ii) the dividend percentage per share.

Sol. Investment = Rs. 8800

Face value of each share = Rs. 100

Market value of each share

$$= \text{Rs. } 100 + 10 = \text{Rs. } 110$$

$$\text{Amount of dividend} = \text{Rs. } 1200$$

$$(i) \text{ No. of shares purchased} = \text{Rs. } \frac{8800}{110} \\ = 80$$

$$(ii) \text{ Rate of dividend} = \text{Rs. } \frac{1200}{80} = 15\% \text{ Ans.}$$

Q. 15. A man invests a sum of money in Rs. 100 shares, paying 10% dividend and quoted at 20% premium. If his annual dividend from these shares is Rs. 560, calculate :

- (i) his total investment,
(ii) the rate of return on his investment.

Sol. Face value of each share = Rs. 100

$$\text{Market value of each share} \\ = \text{Rs. } 100 + 20 = \text{Rs. } 120$$

$$\text{Rate of dividend} = 10\%$$

$$\text{Annual dividend} = \text{Rs. } 560$$

$$(i) \therefore \text{Total investment} = \frac{560}{10} \times 120 \\ = \text{Rs. } 6720$$

$$(ii) \text{ Rate of return on investment} \\ = \text{Rs. } \frac{560 \times 100}{6720} = \frac{25}{3}\% = 8\frac{1}{3}\% \text{ Ans.}$$

Q. 16. A man invests a sum of money in Rs. 25 shares, paying 12% dividend and quoted at Rs. 36. If his annual income from these shares is Rs. 720, calculate :

- (i) his total investment,
(ii) the number of shares bought by him,
(iii) the percentage return on his investment.

Sol. Face value of each share = Rs. 25

$$\text{Market value of each share} = \text{Rs. } 36$$

$$\text{Rate of dividend} = 12\%$$

$$\text{Total income from shares} = \text{Rs. } 720$$

$$(i) \text{ Dividend on Rs. } 25 = \frac{12}{100} \times 25 = \text{Rs. } 3$$

$$\therefore \text{If dividend is Rs. } 3 \text{ then investment} \\ = \text{Rs. } 36$$

and if dividend is Rs. 720, then investment

$$= \text{Rs. } \frac{36}{3} \times 720 = \text{Rs. } 12 \times 720$$

$$= \text{Rs. } 8640$$

$$(ii) \text{ No. of shares bought} = \text{Rs. } \frac{8640}{36} = 240$$

$$(iii) \text{ Percentage of return} \\ = \frac{720 \times 100}{8640} = \frac{25}{3} = 8\frac{1}{3}\%$$

Ans.

Q. 17. A man buys 400, Rs. 10 shares at a premium of Rs. 2.50 on each share. If the rate of dividend is 12%, find :

- (i) his investment ;
(ii) annual dividend received by him ;
(iii) rate of interest received by him on his money.

Sol. No. of shares purchased = 400

$$\text{Face value of each share} = \text{Rs. } 10$$

$$\text{Market value of each share}$$

$$= \text{Rs. } 10 + 2.50 = \text{Rs. } 12.50$$

$$\text{Rate of dividend} = 12\%$$

(i) Dividend on each share

$$= \frac{12 \times 10}{100} = \text{Rs. } 1.20$$

$$\therefore \text{Total investment} = \text{Rs. } 12.50 \times 400 \\ = \text{Rs. } 5000$$

$$(ii) \text{ Annual dividend} = 400 \times 1.20 = \text{Rs. } 480$$

$$(iii) \text{ Rate of interest received in investment} \\ = \frac{480 \times 100}{5000} = \frac{48}{5} = 9\frac{3}{5}\% = 9.6\% \text{ p.a. Ans.}$$

18. A company with 4000 shares of nominal value of Rs. 110 each declares an annual dividend of 15%. Calculate :

- (i) The total amount of dividend paid by the company.
(ii) The annual income of Ratan Shah who holds 88 shares in the company.
(iii) If he received only 10% on his investment, find the price Ratan Shah paid for each share.

Sol. Number of shares = 4000
 Nominal value of each share = Rs. 110
 Annual dividend = 15%
 Total face value of 4000 shares = $4000 \times 110 = \text{Rs. } 440000$

$$(i) \text{ Amount of dividend} = \frac{440000 \times 15}{100} = \text{Rs. } 66000$$

(ii) Number of shares Shah Rukh rules has = 88
 \therefore Nominal value of 88 shares = $88 \times 110 = \text{Rs. } 9680$
 and annual income he received

$$= \text{Rs. } \frac{9680 \times 15}{100} = \text{Rs. } 1452$$

(iii) His annual income is 10% on his investing

$$\therefore \text{ Investment} = \frac{1452 \times 100}{10} = \text{Rs. } 14520$$

$$\therefore \text{ Market value of each share} = \text{Rs. } \frac{14520}{88} = \text{Rs. } 165$$

Q. 19. A company declares a dividend of 8% on Rs. 100 shares. Atul buys such shares and gets 10% on his investment. At what price does he buy each share ?

Sol. Face value of each share = Rs. 100

Rate of dividend = 8%

Interest on investment = 10%

Dividend on Rs. 100 = Rs. 8

If interest is Rs. 10, then investment = Rs. 100

and if interest is Rs. 8, then investment

$$= \text{Rs. } \frac{100 \times 8}{10} = \text{Rs. } 80$$

Hence, marked value of each share = Rs. 80 **Ans.**

Q. 20. Deepak invested in Rs. 25 shares of a company, paying 12% dividend. If he received 10% per annum on his investment, at what price did he buy each share ?

Sol. Face value of each share = Rs. 25

Rate of dividend = 12%

$$\therefore \text{ Dividend on one share} = \frac{25 \times 12}{100} = \text{Rs. } 3$$

Rate of interest on investment = 10%

If interest is Rs. 10, then investment = Rs. 100

if interest in Rs. 3, then investment

$$= \frac{100}{10} \times 3 = \text{Rs. } 30$$

Hence, market value of each share

$$= \text{Rs. } 30 \text{ Ans.}$$

Q. 21. At what price should a 10%, Rs. 25 share be quoted when the money is worth 8%?

Sol. Face value of each share = Rs. 25

Dividend = 10%

\therefore Dividend on one share

$$= \frac{10 \times 25}{100} = \text{Rs. } \frac{5}{2}$$

Rate of interest on investment = 8%

If interest is Rs. 8, then investment = Rs. 100

and if interest is Rs. $\frac{5}{2}$, then investment

$$= \text{Rs. } \frac{100 \times 5}{8 \times 2} = \text{Rs. } \frac{125}{4} = \text{Rs. } 31.25$$

Hence, market value of each share

$$= \text{Rs. } 31.25 \text{ Ans.}$$

Q. 22. Rs. 100 shares of a company are available in the market at a premium of Rs. 20. Find the rate of dividend given by the company, when a man's return on his investment is 10%.

Sol. Face value of each share = Rs. 100

and Market value of each share

$$= \text{Rs. } 100 + \text{Rs. } 20 = \text{Rs. } 120$$

Interest on investment = 10%

$$\therefore \text{ Interest on Rs. } 120 = \frac{120 \times 10}{100} = \text{Rs. } 12$$

\therefore Dividend on one share of Rs. 100 = Rs. 12

Hence, rate of dividend = 12% **Ans.**

Q. 23. Sangeeta invests Rs. 16500 partly in 10%, Rs. 100 shares at Rs. 130 and partly in 8%, Rs. 100 shares at Rs. 120. If her total annual income from these shares be Rs. 1180, find her investment in each kind of shares.

Sol. Investment = Rs. 16500

Total annual income = Rs. 1180

Let investment in 10%, Rs. 100 shares at Rs. 130 = Rs. x

$$\therefore \text{Income} = \frac{x}{130} \times 10 = \text{Rs. } \frac{x}{13}$$

and investment is 8%, Rs. 100 shares at Rs. 120 = Rs. $(16500 - x)$

$$\begin{aligned} \text{and income} &= \frac{(16500 - x) \times 8}{120} \\ &= \frac{16500 - x}{15} \end{aligned}$$

According to the condition,

$$\begin{aligned} \frac{x}{13} + \frac{16500 - x}{15} &= 1180 \\ \Rightarrow 15x + 13(16500 - x) &= 1180 \times 195 \\ &\quad \text{(Multiplying by 195, the} \\ &\quad \text{L.C.M. of 13 and 15)} \\ \Rightarrow 15x + 214500 - 13x &= 230100 \\ 2x &= 230100 - 214500 = 15600 \\ \therefore x &= \frac{15600}{2} = 7800 \end{aligned}$$

Hence investment in first-kind of shares = Rs. 7800

and investment in second kind of shares = Rs. $(16500 - 7800) = \text{Rs. } 8700$ **Ans.**

Q. 24. Divide Rs. 35400 into two parts such that if one part is invested in 9%, Rs. 100 shares at 4% discount and the other in 12%, Rs. 50 shares at 8% premium, the annual incomes are equal.

Sol. Total investment = Rs. 35400

Let first part = Rs. x

and second part = Rs. $(35400 - x)$

In first case, face value = Rs. 100

Market value = Rs. $100 - 4 = \text{Rs. } 96$

Rate of dividend = 9%

$$\therefore \text{Annual income} = \frac{x \times 9}{96} = \frac{3x}{32}$$

In second case, face value = Rs. 50

$$\begin{aligned} \text{Market value} &= \text{Rs. } 50 + \frac{8 \times 50}{100} \\ &= \text{Rs. } 50 + 4 = \text{Rs. } 54 \end{aligned}$$

Rate of dividend = 12% or Rs. 6 on Rs. 50 share

$$\begin{aligned} \therefore \text{Annual income} &= (35400 - x) \times \frac{6}{54} \\ &= (35400 - x) \times \frac{1}{9} \end{aligned}$$

According to the condition,

$$\begin{aligned} \frac{3x}{32} &= \frac{35400 - x}{9} \\ 27x &= 32(35400 - x) \\ \Rightarrow 27x &= 1132800 - 32x \\ \Rightarrow 27x + 32x &= 1132800 \\ \Rightarrow 59x &= 1132800 \\ \Rightarrow x &= \frac{1132800}{59} = 19200 \end{aligned}$$

\therefore Investment in first case = Rs. 19200
and investment in second case
= Rs. $35400 - \text{Rs. } 19200$
= Rs. 16200 **Ans.**

Q. 25. Which is better investment :

- (i) 10% Rs. 100 shares at Rs. 120 or 8%, Rs. 100 shares at Rs. 72.
(ii) 12%, Rs. 20 shares at Rs. 16 or 15%, Rs. 20 shares at Rs. 24.

Sol. (i) Let investment in each case

$$= \text{Rs. } 120 \times 72$$

\therefore Dividend in first case

$$= \text{Rs. } \frac{120 \times 72 \times 10}{120} = \text{Rs. } 720$$

and dividend in second case

$$= \text{Rs. } \frac{120 \times 72 \times 8}{72} = \text{Rs. } 960$$

It is clear that second investment is better.

(ii) Let investment in each case

$$= \text{Rs. } 16 \times 24$$

$$\text{Dividend in first case} = 16 \times 24$$

Annual income of Rs. 20 shares at the

$$\text{rate of } 12\% = \frac{12 \times 20}{100} = \text{Rs. } \frac{12}{5}$$

Total annual income of Rs. 20 share

$$= \text{Rs. } \frac{16 \times 24}{16} \times \frac{12}{5} = \text{Rs. } \frac{288}{5} = \text{Rs. } 57.60$$

In second case,

Annual income of Rs. 20 share at the

$$\text{rate of } 15\% = \frac{15 \times 20}{100} = \text{Rs. } 3$$

$$\therefore \text{Total annual income} = \text{Rs. } \frac{16 \times 24 \times 3}{24} = \text{Rs. } 48$$

It is clear that first investment is better **Ans.**

Q. 26. Amit owns 1500, Rs. 25 shares of a company which declares a dividend of 14%. He sells the shares at Rs. 40 each and invests the proceeds in 8%, Rs. 100 shares at Rs. 80. What is the change in his annual dividend income?

Sol. No. of shares = 1500

Face value of each share = Rs. 25

Rate of dividend = 14%

Market value of each share = Rs. 40

\therefore Sale price of 1500 shares

$$= 1500 \times 40 = \text{Rs. } 60000$$

$$\text{Annual income} = \text{Rs. } 1500 \times \frac{14 \times 25}{100}$$

$$= \text{Rs. } \frac{1500 \times 7}{2} = \text{Rs. } 750 \times 7 = \text{Rs. } 5250$$

In second case,

Market value of each share = Rs. 80

\therefore No. of shares purchased

$$= \frac{\text{Rs. } 60000}{80}$$

$$= 750$$

Rate of dividend = 8%

Face value = Rs. 100

$$\therefore \text{Total dividend} = 750 \times 8 = \text{Rs. } 6000$$

\therefore Increase in income

$$= \text{Rs. } 6000 - \text{Rs. } 5250 = \text{Rs. } 750 \text{ Ans.}$$

Q. 27. Ashish bought 4500, Rs. 10 shares, paying 12% per annum. He sold them when the price rose to Rs. 23 and invested the proceeds in Rs. 25 shares, paying 10% per annum at Rs. 18. Find the change in his annual income.

Sol. No. of shares purchased = 4500

Face value of each share = Rs. 10

Rate of dividend = 12% p.a.

$$\therefore \text{Total income} = \frac{4500 \times 12 \times 10}{100}$$

$$= \text{Rs. } 5400$$

On selling 4500 shares at the rate of Rs. 25 each, sale price = 4500×23

$$= \text{Rs.}$$

$$103500$$

Again purchasing share at Rs. 18, no.

$$\text{of shares} = \frac{103500}{18} = 5750$$

Rate of dividend = 10%

$$\therefore \text{Total income} = \frac{5750 \times 25 \times 10}{100}$$

$$= \text{Rs. } 2875 + 5 = \text{Rs. } 14375$$

\therefore Increase in income = Rs. 14375

$$- \text{Rs. } 5400 = \text{Rs. } 8975 \text{ Ans.}$$

Q. 28. Vimal sold a certain number of Rs. 20 shares, paying 8% dividend, at Rs. 18 and invested the proceeds in Rs. 10 shares, paying 12% dividend, at 50% premium. If his annual dividend income decreases by Rs. 120, find the number of shares sold by Vimal.

Sol. Face value of each share = Rs. 20

Market value of each share = Rs. 18

Rate of dividend = 8%

Let no. of shares = x

$$\therefore \text{Sale price} = x \times 18 = \text{Rs. } 18x$$

$$\text{Annual Dividend} = \frac{x \times 20 \times 8}{100} = \text{Rs. } \frac{8}{5}x$$

In second case,

Face value of each show = Rs. 10

Marked value of each share

$$= \text{Rs.} \frac{10 \times 150}{100} = \text{Rs.} 15$$

Rate of dividend = 12%

$$\therefore \text{No. of shares in this case} = \frac{18x}{15} = \frac{6x}{5}$$

$$\text{Dividend on } \frac{6}{5}x \text{ shares} = \frac{6}{5}x \times \frac{12 \times 10}{100} = \frac{36}{25}x$$

$$\therefore \text{Difference in income} = \frac{8}{5}x - \frac{36}{25}x = \frac{40x - 36x}{25} = \frac{4}{25}x$$

According to the condition,

$$\frac{4}{25}x = 120 \Rightarrow x = \frac{120 \times 25}{4} = 750$$

\therefore No. of shares = 750 Ans.