# Shares and Dividends

**1. A company with 500 shares of nominal value ₹ 120 declares an annual dividend of 15%. Calculate**

**(i) the total amount of dividend paid by the company.**
**(ii) annual income of Mr. Sharma who holds 80 shares of the company. If the return percent of Mr. Sharma from his shares is 10%, find the market value of each share. [2020]**

**Solution: (i) ₹ 9000 (ii) Annual income = ₹1440; M.V. = ₹180**

**Step-by-step Explanation:**

No. of shares = 500
Face value (f) = ₹120
Rate of dividend = 15%

$$(i)\ Total\ dividend = \frac{n \times r \times f}{100}$$
$$= \frac{500 \times 15 \times 120}{100}$$
$$= ₹9000$$
$$(ii)\ Annual\ income\ of\ Mr.\ Sharma$$
$$= \frac{n \times r \times f}{100}$$
$$= \frac{80 \times 15 \times 120}{100}$$
$$= ₹1440$$
$$Return\ \%\ of\ Mr.\ Sharma = 10\%$$
$$We\ know,\ return\% = \frac{income}{investment} \times 100$$
$$\Rightarrow 10 = \frac{1440}{80 \times M.V.} \times 100$$
$$\Rightarrow 10 = \frac{1800}{M.V.}$$
$$\Rightarrow 10 \times M.V. = 1800$$
$$\Rightarrow M.V. = 180$$
$$Hence,\ M.V. = ₹180$$

2. A man invests 4500 in shares of a company which is paying 7.5% dividend. If 100 shares are available at a discount of 10%. Find:
(i) Number of shares he purchases.
(ii) His annual income. [2019]

Solution: (i) 50 (ii) ₹ 375

Step-by-step Explanation:

$$Investment = ₹4500$$
$$Face\ value\ (f)\ =\ ₹100$$
$$Market\ Value\ (M.V.)$$
$$= ₹100 - 10\%\ of\ 100$$
$$= ₹\ 90$$
$$Rate\ of\ dividend\ =\ 7.5\%$$
$$(i)\ Number\ of\ shares = \frac{Investment}{M.V.}$$
$$= \frac{4500}{90}$$
$$= 50\ shares$$
$$(ii)\ His\ annual\ income = \frac{n \times r \times f}{100}$$
$$= \frac{50 \times 7.5 \times 100}{100}$$
$$= ₹375$$

3. 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. [4] [2019]

Solution: (i) 10,000 (ii) 80 (iii) ₹460 (increase)

**Step-by-step Explanation:**

1st Investment = ₹8500
Face value (f) = ₹100
Market Value (M.V.) = ₹170
Rate of dividend = 10%
M.V. at the time of sale = ₹170 + 30 = ₹200
Hence, no. of shares purchased earlier

$$= \frac{investment}{M.V.}$$
$$= \frac{8500}{170} = 50$$

(i)The sale proceeds

= no. of shares × M.V. at the time of sale
= 50 × 200
= ₹10000
Now, 2nd investment = ₹10000
r% = 12%
f = ₹100
M.V. = ₹125

(ii) Number of ₹125 shares he buys

$$= \frac{Investment}{M.V.}$$
$$= \frac{10000}{125}$$
$$= 80$$

(iii) His annual income earlier

$$= \frac{n \times r \times f}{100}$$
$$= \frac{50 \times 10 \times 100}{100}$$
$$= ₹500$$

His annual income later

$$= \frac{80 \times 12 \times 100}{100}$$
$$= ₹960$$

Hence, change in annual income

= ₹ (960−500)

= ₹460 (increase)

**4. A man invests ₹ 22,500 in ₹ 50 shares available at 10% discount. If the dividend paid by the company is 12%, calculate: [3]**

**(i) The number of shares purchased.**
**(ii) The annual dividend received.**
**(iii) The rate of return he gets on his investment. Give your answer correct to the nearest whole number. [2018]**

**Solution: (i) 500 (ii) ₹ 3000 (iii) 13 1/3%**

**Step-by-step Explanation:**

$$Investment = ₹22500$$
$$Face\ value\ (f) = ₹50$$
$$Market\ Value\ (M.V.) = ₹50 - 10\%of\ 50$$
$$= 50 - 5 = ₹45$$
$$Rate\ of\ dividend = 12\%$$
$$(i)\ The\ no.\ of\ shares\ purchased$$
$$= \frac{investment}{M.V.}$$
$$= \frac{22500}{45} = 500$$

$$(ii) The\ annual\ dividend$$

$$= \frac{n \times r \times f}{100}$$

$$= \frac{500 \times 12 \times 50}{100}$$

$$= ₹3000$$

$$(iii)\ Rate\ of\ return\ on\ investment$$

$$= \frac{income}{investment} \times 100$$

$$= \frac{3000}{22500} \times 100$$

$$= \frac{40}{3}\%$$

$$= 13\frac{1}{3}\%$$

5. How much should a man invest in ₹50 shares selling at ₹60 to obtain an income of 450, if the rate of dividend declared is 10%. Also, find his yield percent, to the nearest whole number. [3] [2017]

Solution: Investment = ₹5400

Yield= 8%

Step-by-step Explanation:

$$N.V. = ₹50$$
$$M.V. = ₹60$$
$$Income = ₹450$$
$$rate\ of\ dividend\ (r) = 10\%$$
$$Dividend\ on\ 1\ share$$
$$= 10\%\ of\ ₹50$$
$$= \frac{10}{100} \times 50$$
$$= ₹5$$

$$No.\ of\ shares = \frac{Total\ dividend}{dividend\ on\ 1\ share}$$
$$= \frac{450}{5} = 90$$
$$\therefore Investment = n \times M.V.$$
$$= 90 \times 60$$
$$= ₹5400$$
$$Yield\% = \frac{Income}{Investment} \times 100$$
$$= \frac{450}{5400} \times 100$$
$$= 8.33 = 8\%$$

6. Ashok invested ₹26,400 on 12%, ₹25 shares of a company. If he receives a dividend of ₹2,475, find the:

(i) number of shares he bought.
(ii) Market value of each share. [3] [2016]

Solution: (i) 825 (ii) ₹32

Step-by-step Explanation:

$$Investment = ₹26400$$

$$N.V. = ₹25$$

$$Dividend = ₹2475$$

$$rate\ of\ dividend\ (r) = 12\%$$

$$Dividend\ on\ 1\ share$$

$$= 12\%\ of\ ₹25$$

$$= \frac{12}{100} \times 25$$

$$= ₹3$$

$$(i)\ No.\ of\ shares$$

$$= \frac{Total\ dividend}{dividend\ on\ 1\ share}$$

$$= \frac{2475}{3}$$

$$= 825$$

$$(ii)\ M.V. = \frac{Investment}{n}$$

$$= \frac{26400}{825}$$

$$= ₹32$$

7. Rohit invested ₹9,600 Rs.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. [4] [2015]**

**Solution: (i) 80 (ii) ₹12800 (iii) 320 (iv) ₹960**

**Step-by-step Explanation:**

Investment = ₹9600

N.V. = ₹100

M.V. = 100 + 20 = ₹120

Rate of dividend = 8%

(i) original no. of shares

$$= \frac{Investment}{M.V.}$$
$$= \frac{9600}{120}$$
$$= 80$$

(ii) He sold the shares at M.V. ₹160

Sale proceeds = 160 × 80

= ₹12800

New investment = ₹12800

N.V. = ₹50

M.V. = ₹40

Rate of dividend =10%

(iii) New number of shares

$$= \frac{Investment}{M.V.}$$

$$= \frac{12800}{40}$$

$$= 320$$

$(iv)$ *Earlier dividend*

$$= \frac{n \times r \times f}{100}$$

$$= \frac{80 \times \times 8 \times 100}{100}$$

$$= ₹640$$

*New dividend*

$$= \frac{320 \times 10 \times 50}{100}$$

$$= ₹1600$$

Hence, change in dividend = ₹1600 − ₹640

= ₹960 (increase)

**8. 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. [3] [2014]**

**Solution: (i) 80 (ii) ₹ 4800 (iii) 12.5%**

**Step-by-step Explanation:**

$$N.V. = ₹50$$

$$M.V. = 50 + 20\% \ of \ 50 = ₹60$$

$$rate \ of \ dividend = 15\%$$

$$Annual \ dividend = ₹600$$

$$Dividend \ on \ 1 \ share$$

$$= 15\% \ of \ ₹50$$

$$= ₹7.50$$

$$(i) \ So, \ no. \ of \ shares$$

$$= \frac{Total \ dividend}{dividend \ on \ 1 \ share}$$

$$= \frac{600}{7.50}$$

$$= 80$$

$$(ii) \ Total \ investment$$

$$= n \times M.V.$$

$$= 80 \times 60$$

$$= ₹4800$$

$$(iii) \ rate \ of \ return \ on \ investment$$

$$= \frac{Income}{Investment} \times 100$$

$$= \frac{600}{4800} \times 100$$

$$= \frac{25}{2}\%$$

$$= 12.5\%$$

**9. 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? [4] [2013]**

**Solution:** (i) ₹ 6600 (ii) ₹ 375 (iii) 20

**Step-by-step Explanation:**

no. of shares = 50
face value (f) = ₹100
M.V. = ₹132
dividend% =7.5%
(i)Investment = n × M.V.
= 50 × 132
= ₹6600

(ii) Annual income

$$= \frac{\frac{n \times r \times f}{100}}{\frac{50 \times 7.5 \times 100}{100}}$$
$$= ₹375$$

(iii) Dividend on 1 share

= 7.5% of ₹100

=₹7.50

If he wants to increase annual income by ₹150

No. of extra shares

$$= \frac{increase\ in\ annual\ income}{income\ on\ 1\ share}$$
$$= \frac{150}{7.50}$$
$$= 20$$

**10. A man invests ₹9,600 on ₹100 shares at ₹80. If the company pays him 18% dividend find:**
**(i) the number of shares he buys.**
**(ii) his total dividend.**
**(iii) his percentage return on the shares [3] [2012]**

**Solution: (i) 120 (ii) ₹ 2160 (iii) 22.5%**

**Step-by-step Explanation:**

Investment = ₹9600

Face value (f)= ₹100

M.V. = ₹80

Dividend % =18%

$$(i)\ No.\ of\ shares = \frac{investment}{M.V.}$$
$$= \frac{9600}{80}$$
$$= 120$$
$$(ii)\ Total\ dividend$$
$$= \frac{n \times r \times f}{100}$$
$$= \frac{120 \times 18 \times 100}{100}$$
$$= ₹2160$$
$$(iii)\ percentage\ return\ on\ share$$
$$= \frac{income}{investment} \times 100$$
$$= \frac{2160}{9600} \times 100$$
$$= 22.5\%$$

11. 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. [3] [2011]

Solution: (i) ₹ 5200 (ii) ₹ 31200

Step-by-step Explanation:

$$Investment = \text{₹}52000$$

$$face\ value\ (f) = \text{₹}100$$

$$M.V. = 100 - 20 = \text{₹}80$$

$$dividend\% = 8\%$$

$$Hence,\ no.\ of\ shares = \frac{investment}{M.V.}$$

$$= \frac{52000}{80}$$

$$= 650$$

$$(i)\ Annual\ dividend$$

$$= \frac{n \times r \times f}{100}$$

$$= \frac{650 \times 8 \times 100}{100}$$

$$= \text{₹}5200$$

$$He\ sold\ shares\ at (100 + 20) = \text{₹}120$$

$$(ii)\ Hence,\ sale\ proceeds$$

$$= 650 \times 120$$

$$= \text{₹}78000$$

$$Therefore,\ profit = 78000 - 52000$$

$$= \text{₹}26000$$

$$Hence,\ profit\ earned\ including\ dividend$$

$$= \text{₹}26000 + \text{₹}5200$$

$$= \text{₹}31200$$

**12. Vivek invests ₹ 4,500 in 8%, ₹ 10 shares at ₹ 15. 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. [4] [2010]**

**Solution: (i) ₹9000 (ii) 72 (iii) ₹ 624**

**Step-by-step Explanation:**

$$Investment = ₹\,4500$$
$$Rate\ of\ dividend = 8\%$$
$$face\ value = ₹\,10$$
$$M.V. = ₹15$$
$$No.\ of\ shares = \frac{investment}{M.V.}$$
$$= \frac{4500}{15}$$
$$= 300$$
$$His\ annual\ income$$
$$= \frac{n \times r \times f}{100}$$
$$= \frac{300 \times 8 \times 10}{100}$$
$$= ₹240$$

When price rises to ₹30,
He invests the shares.

(i) Hence, sale proceeds
$= 300 \times 30$
$= ₹9000$

His next investment

Investment = ₹9000
Rate of dividend = 12%
Face value = ₹100

M.V. = ₹125
No. of shares purchased

$$= \frac{9000}{125}$$
$$= 72$$

(ii) Now his annual income

$$= \frac{n \times r \times f}{100}$$
$$= \frac{72 \times 12 \times 100}{100}$$
$$= ₹864$$

Therefore, change in his annual income
= ₹864 − ₹240
= ₹624 (increase)