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:

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

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:

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

$$(ii) \textit{The annual dividend}$$

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

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

$$= ₹3000$$

$$(iii)\ \textit{Rate of return on investment}$$

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

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

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

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

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

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

$$= \frac{50 \times 7.5 \times 100}{100}$$

$$= ₹375$$

(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:

$$Investment = ₹52000$$

$$face\ value\ (f) = ₹100$$

$$M.V. = 100 - 20 = ₹80$$

$$dividend\% = 8\%$$

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

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

$$= 650$$

(i) *Annual dividend*

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

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

$$= ₹5200$$

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

(ii) *Hence, sale proceeds*

$$= 650 \times 120$$

$$= ₹78000$$

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

$$= ₹26000$$

Hence, profit earned including dividend

$$= ₹26000 + ₹5200$$

$$= ₹31200$$

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)