

Assignment 1

AI1110: Probability and Random Variables

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Question 1(b) 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) the number of shares he purchases
- (ii) his annual income

Solution.

Total investment made by the man, $P = ₹ 4500$

Face value of a share, $F = ₹ 100$

Discount at which the shares are available, $d = 10\%$

Dividend, $D = 7.5\%$

(i) Market value of a share, $M = F \left(1 - \frac{d}{100} \right) = ₹ 100 \left(1 - \frac{10}{100} \right) = ₹ 100 \times \frac{9}{10} = ₹ 90$

The number of shares purchased, $N = \frac{P}{M} = \frac{4500}{90} = 50$

∴ The man purchased 50 shares.

(ii) His annual income, $A = F \times N \times \frac{D}{100} = ₹ 100 \times 50 \times \frac{7.5}{100} = ₹ 50 \times 7.5 = ₹ 375$

∴ The annual income of the man is ₹ 375