LF LearnFrenzy

QUANTITATIVE APTITUDE · FREE STUDY MATERIAL

Stocks and Shares

Formulas & Shortcut Tricks

Every important formula, shortcut and exam trick for Stocks and Shares in one place – with solved examples, common mistakes and a one-page revision sheet.

WHAT'S INSIDE

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USEFUL FOR

- Bank PO & Clerk (IBPS, SBI, RBI)
- SSC CGL / CHSL
- Railways (RRB NTPC)
- Campus placements (TCS, Infosys, Wipro, Accenture)
- UPSC CSAT & state PSC exams

Practise Stocks and Shares free on LearnFrenzy – questions with instant explanations →

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1 Topic introduction

What it is, why it matters and how it is asked

A company raises money by selling shares. Each share has a face value (the value printed on it) and a market value (the price it trades at). Dividend is the company's yearly payment to shareholders and is always worked out on the face value.

Exams mostly use "x% stock at y": ₹100 of stock costs ₹y in the market and pays ₹x a year. From this come income, yield (return on the money actually invested), brokerage, comparing investments, switching stocks and splitting a sum between two stocks.

Why it matters in exams

- Bank and placement papers ask one or two direct questions.
- It reuses percentage and ratio – easy marks once the terms are clear.
- Questions are short and formula-based.

Where it is used

- Investing in shares and mutual funds.
- Comparing returns from different investments.
- Reading share-price charts and stock quotes.

Common question patterns

Face and market value
Premium, discount and at par.

Dividend and income
Income from shares or from a sum invested.

Yield
Return on the money invested.

Brokerage
Added when buying, taken off when selling.

Comparing stocks
Which investment gives a better return?

Switching
Sell one stock, buy another – change in income.

Splitting a sum
Equal incomes or a given total income.

Bonus and split
Extra shares and changed prices.

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2 Important formulas

Cards marked MOST USED are the ones to revise first

Basic terms

Premium, discount and par

MOST USED

At premium: MV > FV. At discount: MV < FV. At par: MV = FV

Premium and discount are percentages of the face value.

FV – face value **MV** – market value

EXAMPLE ₹10 share at 25% premium → MV = 10 + 2.50 = **₹12.50**.

Dividend and annual income

MOST USED

Annual income = number of shares × FV × dividend%

Dividend is always on face value, never on market value.

EXAMPLE 200 shares of FV ₹10 at 15% dividend → 200 × 10 × 0.15 = **₹300**.

Number of shares

Number of shares = money invested ÷ market price of one share

You pay the market price, not the face value.

EXAMPLE ₹27,000 in shares at ₹45 → **600** shares.

"x% stock at y"

Income from an investment

MOST USED

Income = investment × x/y

Every ₹y invested buys ₹100 of stock and earns ₹x.

EXAMPLE ₹9,600 in 8% stock at 96 → 9,600 × 8/96 = **₹800**.

Yield (rate of return)

MOST USED

Yield = (x/y) × 100 %

Yield is on the money invested; dividend rate is on face value.

EXAMPLE 9% stock at 120 → 9/120 × 100 = **7.5%**.

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Stock bought and investment needed

> **Stock (face value) = investment × 100/y; investment for income I = I × y/x**

Turn the question into “how many ₹100 units”.

EXAMPLE Income ₹1,500 from 12% stock at 108 → 1,500 × 108/12 = **₹13,500**.

Brokerage

Buying and selling with brokerage

MOST USED

> **Buying: cost per ₹100 stock = y + brokerage. Selling: money per ₹100 stock = y − brokerage**

The broker always takes money from you – it raises cost and lowers sale proceeds.

EXAMPLE 6% stock at 98, brokerage ½% → buy at **98.5**, sell at 97.5.

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3 Shortcut tricks & smart techniques

Each trick says when to use it – that matters as much as the trick

Compare by yield

MOST USED

USE WHEN Which of two stocks is the better investment?

Stock	Yield x/y
10% at 125	8%
12% at 150	8%
9% at 120	7.5%
15% at 120	12.5%
7% at 84	8⅓%

EXAMPLE 12% stock at 150 → 12/150 = **8%**.

Switching stocks

MOST USED

USE WHEN One stock is sold and the money put into another.

1. Sale money = stock held × selling price ÷ 100.
2. New income = sale money × x_2/y_2; compare with old income.

EXAMPLE ₹10,000 of 6% stock sold at 120 → ₹12,000 into 8% at 96 → ₹1,000 vs ₹600 → **+₹400**.

Equal incomes from two stocks

USE WHEN A sum is split so that both parts earn the same.

1. Invest in the ratio $y_1/x_1 : y_2/x_2$.
2. Each part then earns the same income.

EXAMPLE 10% at 125 and 12% at 120 → 12.5 : 10 = **5 : 4**.

Bonus and split

USE WHEN The company issues bonus shares or splits them.

1. Bonus a : b → a new shares for every b held.
2. Split ₹10 into five ₹2 shares → shares × 5, price ÷ 5.

EXAMPLE 400 shares with a 1 : 4 bonus → 400 + 100 = **500**.

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4 Solved examples

The full method on the left, the exam shortcut on the right

1 DIVIDEND

An investor buys 800 shares of face value ₹10 at ₹15 each. The company pays a 12% dividend. Find the annual income and the yield.

STEP BY STEP

1. Investment = 800 × 15 = ₹12,000.
2. Income = 800 × 10 × 12% = ₹960.
3. Yield = 960 ÷ 12,000 × 100 = 8%.

SHORTCUT

Yield = 12% × FV/MV = 12 × 10/15 = 8%.

Why it works: Trap: taking 12% of the market price ₹15.

Answer: ₹960 and 8%

2 INCOME

Find the annual income from investing ₹14,400 in 10% stock at 120.

STEP BY STEP

1. ₹120 buys ₹100 stock.
2. Stock bought = 14,400 × 100/120 = ₹12,000.
3. Income = 10% of 12,000 = ₹1,200.

SHORTCUT

14,400 × 10/120 = 1,200.

Why it works: Income = investment × x/y.

Answer: ₹1,200

3 YIELD

What is the rate of return on 7% stock at 84?

STEP BY STEP

1. ₹84 earns ₹7.
2. Return = 7/84 × 100 = 8⅓%.

SHORTCUT

7/84 = 1/12 = 8⅓%.

Why it works: Trap: answering 7%, the dividend rate.

Answer: 8⅓%

4 BUYING

Find the cost of buying ₹5,000 of 9% stock at 95 when brokerage is ¼%.

STEP BY STEP

1. Cost of ₹100 stock = 95 + 0.25 = ₹95.25.
2. Cost = 50 × 95.25 = ₹4,762.50.

SHORTCUT

(5,000/100) × (95 + ¼).

Why it works: Brokerage is added when buying.

Answer: ₹4,762.50

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5 SELLING

₹6,000 of 5% stock is sold at 110 with brokerage ½%. How much money is received?

STEP BY STEP

1. Money for ₹100 stock = 110 − 0.5 = ₹109.50.
2. Received = 60 × 109.50 = ₹6,570.

SHORTCUT

60 × 109.5 = 6,570.

Why it works: Trap: adding brokerage when selling.

Answer: ₹6,570

6 INVESTMENT NEEDED

How much must be invested in 8% stock at 104 to get an annual income of ₹2,000?

STEP BY STEP

1. ₹8 income needs ₹104.
2. ₹2,000 needs 2,000 × 104/8 = ₹26,000.

SHORTCUT

I × y/x = 250 × 104.

Why it works: Reverse of the income formula.

Answer: ₹26,000

7 COMPARING

Which is the better investment: 9% stock at 117 or 8% stock at 100?

STEP BY STEP

1. Yield of first = 9/117 × 100 ≈ 7.69%.
2. Yield of second = 8/100 × 100 = 8%.
3. 8% stock at 100 is better.

SHORTCUT

Compare 9/117 and 8/100: 900 < 936, so the first is smaller.

Why it works: Trap: picking the higher dividend rate 9%.

Answer: 8% stock at 100

8 SWITCHING

An investor sells ₹15,000 of 8% stock at 108 and invests the money in 10% stock at 120. Find the change in annual income.

STEP BY STEP

1. Old income = 8% of 15,000 = ₹1,200.
2. Sale money = 150 × 108 = ₹16,200.
3. New income = 16,200 × 10/120 = ₹1,350.
4. Change = +₹150.

SHORTCUT

150 × (108 × 10/120 − 8) = 150 × 1.

Why it works: Old income is on face value; new income uses the new x/y.

Answer: ₹150 increase

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9 EQUAL INCOMES

₹22,500 is split between 10% stock at 125 and 12% stock at 120 so that both give the same income. Find the two parts.

STEP BY STEP

1. Ratio = 125/10 : 120/12 = 12.5 : 10 = 5 : 4.
2. Parts = ₹12,500 and ₹10,000.
3. Check: 12,500 × 10/125 = 1,000 = 10,000 × 12/120.

SHORTCUT

Invest in the ratio y/x.

Why it works: Equal income needs more money in the lower-yield stock.

Answer: ₹12,500 and ₹10,000

10 BONUS

An investor buys 600 shares at ₹50 each. The company issues a 1 : 5 bonus and the price then falls to ₹45. Find the gain.

STEP BY STEP

1. Cost = 600 × 50 = ₹30,000.
2. Shares after bonus = 600 + 120 = 720.
3. Value = 720 × 45 = ₹32,400.
4. Gain = ₹2,400.

SHORTCUT

720 × 45 − 30,000.

Why it works: Bonus shares cost nothing.

Answer: ₹2,400

11 TOTAL INCOME

₹20,000 is invested partly in 9% stock at 90 and the rest in 6% stock at 75. The total income is ₹1,860. How much is in the 9% stock?

STEP BY STEP

1. Yields: 9/90 = 10%, 6/75 = 8%.
2. 0.10a + 0.08(20,000 − a) = 1,860.
3. 0.02a = 260 → a = ₹13,000.

SHORTCUT

Alligation on yields: average 9.3% → 1.3 : 0.7 = 13 : 7.

Why it works: Convert each stock to its yield first.

Answer: ₹13,000

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5 Important exam tips

Patterns, traps and habits that save marks

Frequently asked question patterns

- Income from shares or from a sum invested.
- Yield of “x% stock at y”.
- Brokerage while buying or selling.
- Comparing two investments.
- Switching from one stock to another.
- Splitting a sum for equal or given income.
- Bonus shares and splits.

Common mistakes to avoid

- Taking dividend on market value.
- Adding brokerage when selling.
- Treating face value as the amount invested.
- Confusing dividend rate with yield.
- Forgetting that bonus shares are free.
- Using the market price for old income in switching questions.

Points to remember

- Dividend → face value.
- Yield → money invested.
- Income = investment × x/y.
- Buy: y + brokerage.
- Sell: y − brokerage.

Speed and accuracy

- Compare stocks by x/y, not by x.
- Work in units of ₹100 stock.
- Use alligation on yields for split questions.
- Simplify x/y as a fraction first.

Preparation strategy

- Learn the definitions first – most errors are about terms, not arithmetic.
- Practise on LearnFrenzy in order: Easy → Medium → Hard → Exam Pattern Mix → Data Sufficiency.
- Aim for 40–50 seconds per question.
- Keep an error log of face-value and brokerage slips.
- Read the Quick Revision Sheet (next page) the night before the exam.

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6 Quick revision sheet

Everything on one page for the night before the exam

Formulas

Annual income (shares)	**shares × FV × dividend%**	Number of shares	**investment ÷ MV**
Income (x% at y)	**investment × x/y**	Yield	**(x/y) × 100 %**
Stock bought	**investment × 100/y**	Investment for income I	**I × y/x**
Buying cost	**y + brokerage**	Selling money	**y − brokerage**
Equal incomes	**invest in $y_1/x_1 : y_2/x_2$**		

Shortcut tricks

- Better stock = higher x/y.
- Switch: new income − old income.
- Split: alligation on yields.
- Bonus a : b → × (a + b)/b.
- Premium raises MV, discount lowers it.
- Dividend never on MV.

Must-know numbers

Common yields	10% at 125 → 8% · 12% at 150 → 8% · 9% at 120 → 7.5% · 15% at 120 → 12.5%
Fractions	1/8 = 12.5% · 1/12 = 8⅓% · 1/16 = 6¼% · 3/40 = 7.5%

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7 A message from LearnFrenzy

For everyone preparing for placements, competitive and government exams

Keep going – you are closer than you think

Success in examinations is not just about how many hours you study. It is about how effectively you understand concepts, practise questions, and improve yourself every day.

Every formula you learn, every problem you solve, and every mistake you correct brings you one step closer to your goal.

Whether you are preparing for campus placements, competitive examinations, or government jobs, remember that consistency, confidence, and smart preparation make a real difference.

Don't just memorize formulas. Understand the concepts, practise smart techniques, and develop the confidence to solve problems independently.

Your hard work today can create the opportunities you dream of tomorrow.

— Team LearnFrenzy

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