

# CDS-AFCAT 1 2025

SSBCrack  
EXAMS

LIVE

# MATHS

# PROFIT & LOSS

CLASS 2

NAVJYOTI SIR





## 27 Sep 2024 Live Classes Schedule

8:00AM	27 SEP 2024 DAILY CURRENT AFFAIRS	RUBY MA'AM
9:00AM	27 SEP 2024 DAILY DEFENCE UPDATES	DIVYANSHU SIR

### NDA 1 2025 LIVE CLASSES

11:30AM	GK - OCEANOGRAPHY	RUBY MA'AM
1:00PM	BIOLOGY - HUMAN BODY - CLASS 4	SHIVANGI MA'AM
4:00PM	MATHS - INEQUALITIES - CLASS 2	NAVJYOTI SIR
5:30PM	ENGLISH - PARTS OF SPEECH - CLASS 3	ANURADHA MA'AM

### CDS 1 2025 LIVE CLASSES

11:30AM	GK - OCEANOGRAPHY	RUBY MA'AM
1:00PM	BIOLOGY - HUMAN BODY - CLASS 4	SHIVANGI MA'AM
2:30PM	MATHS - INEQUALITIES - CLASS 2	NAVJYOTI SIR
5:30PM	ENGLISH - PARTS OF SPEECH - CLASS 3	ANURADHA MA'AM

### AFCAT 1 2025 LIVE CLASSES

10:00AM	REASONING - FIGURE ANALOGY	RUBY MA'AM
2:30PM	MATHS - PROFIT & LOSS - CLASS 2	NAVJYOTI SIR
4:00PM	STATIC GK - MAJOR DEFENCE EQUIPMENT & DEALS	DIVYANSHU SIR
5:30PM	ENGLISH - PARTS OF SPEECH - CLASS 3	ANURADHA MA'AM



A dishonest dealer professes to sell his goods at cost price, but he uses a weight of 960 g for the 1 kg weight. Find his gain percent.

SP

CP

$$\text{gain\%} = \frac{SP - CP}{CP} \times 100$$

$$= \frac{1000 - 960}{960} \times 100$$

$$= \frac{40}{960} \times 100 = \frac{4}{96} \times 100 = \frac{100}{24} = \frac{25}{6} = 4.11\% \left( 4\frac{1}{6}\% \right)$$

# MARKED PRICE & DISCOUNT

- **Marked Price** – The price on the label is called marked price or List price. It is abbreviated as MP
- **Discount** – The Reduction made on the marked price.

$$\text{Selling price} = \text{Marked price} - \text{Discount}$$

## MARK UP %

Cost price < Marked price

$$\left( \text{Mark-up \%} = \frac{MP - CP}{CP} \times 100 \right)$$

# MARKED PRICE & DISCOUNT

$$SP = \underline{MP} - \underline{\text{Discount}}$$

(same)

$$\text{Discount} = \underline{\text{Discount \% on MP}}$$

$$\text{Discounted price} = MP - \underline{\text{Discount}}$$

$$= \frac{D\%}{100} \times MP$$

$$= MP - \frac{D\%}{100} \times MP$$

$$= MP \left( 1 - \frac{D\%}{100} \right) = \underline{\underline{MP \left( \frac{100 - D\%}{100} \right)}}$$

CDS & AFCAT 1 2025 LIVE CLASS - MATHS - PART 2

$$\underline{SP} = MP \left( \frac{100 - D\%}{100} \right)$$

$$CP \left( \frac{100 + P\%}{100} \right) = MP \left( \frac{100 - D\%}{100} \right)$$

$$\frac{CP}{MP} = \frac{100 - D\%}{100 + P\%}$$

After a discount of 20% an article is sold for Rs840 , find the marked price of article.

$$840 = MP \left( \frac{100 - 20}{100} \right)$$

$$MP = \frac{840 \times 100}{80} = \underline{1050}$$



# SUCCESSIVE DISCOUNT

- If three or more successive discounts on an article are  $a\%$ ,  $b\%$ ,  $c\%$ ,.... respectively, then a single discount equivalent to the successive discounts will be

$$\left[ \left\{ 1 - \left(1 - \frac{a}{100}\right) \left(1 - \frac{b}{100}\right) \left(1 - \frac{c}{100}\right) \dots \right\} \times 100 \right] \% \rightarrow$$

# SUCCESSIVE DISCOUNT

①  $a\% \rightarrow b\%$  (for 2 successive discounts)

$$\text{overall} \rightarrow \left[ a + b - \frac{ab}{100} \right] \%$$

②  $a\%, b\%, c\%$  (for 3 successive discounts)

$$\left[ a + b + c - \frac{ab + bc + ca}{100} + \frac{abc}{10000} \right] \%$$

Q.) 5%, 6%, 8%. Overall discount% ?

$$5 + 6 + 8 - \frac{(5)(6) + (6)(8) + (8)(5)}{100} + \frac{(5)(6)(8)}{10000}$$

$$19 - \frac{118}{100} + \frac{240}{10000}$$

$$19 - 1.18 + 0.0240$$

$$= 17.82 + 0.0240$$

$$= \underline{17.8440\%}$$

Find the single discount equivalent to successive discounts of 15% and 20%.

$$\left( a + b - \frac{ab}{100} \right) \%$$

$$\left( 15 + 20 - \frac{300}{100} \right) \%$$

$$32\%$$

(OR)

$$\left[ \left\{ 1 - \left( 1 - \frac{15}{100} \right) \left( 1 - \frac{20}{100} \right) \right\} \times 100 \right] \%$$

$$\left\{ 1 - \frac{\cancel{85}^{17}}{\cancel{100}^{20}} \times \frac{\cancel{80}^1}{\cancel{100}^5} \right\} \times 100$$

$$\left\{ 1 - \frac{17}{25} \right\} \times 100$$

$$\frac{8}{25} \times 100 = \underline{\underline{32\%}}$$

# SITUATIONS

- Buying 4 articles and 1 article is free. What is the Discount % ?

$$\begin{array}{l}
 \text{Discount} = 1 \quad \left| \quad \text{MP} = 4 + 1 = 5 \right. \\
 \hline
 \text{Discount \%} = \frac{1}{5} \times 100 = 20\% \quad \left( \frac{\text{Discount}}{\text{MP}} \times 100 \right)
 \end{array}$$

\* If on buying  $x$  articles,  $y$  articles are free. Then

$$\text{Discount \%} = \left( \frac{y}{x+y} \times 100 \right) \%$$

If 2 articles are given free on purchase of 8 articles then find discount %.

$$\frac{2}{2+8} \times 100 = \frac{1}{5} \times 100 = \underline{20\%}$$

Q) A businessman allows a discount of 10% on the written price. How much above the cost price must he mark his goods to make a profit of 17%?

- (a) 30%    (b) 20%    (c) 27%    (d) 18%

$$\text{Mark-up \%} = \left( \frac{MP - CP}{CP} \right) \times 100$$

$$\frac{MP}{CP} = \frac{100 + P\%}{100 - D\%} = \frac{100 + 17}{100 - 10}$$

$$\frac{MP}{CP} = \frac{117}{90} \Rightarrow \frac{MP - CP}{CP} = \frac{117 - 90}{90} = \frac{27}{90} = \frac{3}{10}$$

$$\% \rightarrow \frac{3}{10} \times 100 = \underline{30\%}$$

$$\left. \begin{array}{l} a \\ b \end{array} \right\} \rightarrow \frac{a+b}{b}$$

Q) A businessman allows a discount of 10% on the written price. How much above the cost price must he mark his goods to make a profit of 17%?

- (a) 30%      (b) 20%      (c) 27%      (d) 18%

Ans: (a)



Q) In respect of a bill of ₹ 10000, what is the difference between a discount of 40% and two successive discounts of 36% and 4%?

- (a) ₹ 0                      (b) ₹ 144  
(c) ₹ 256                    (d) ₹ 400

36% and 4%

$$36 + 4 - \left( \frac{36 \times 4}{100} \right) = 40 - \frac{36}{25} = \underline{40 - 1.44} = \underline{38.56\%}$$

$$\left( 40\% - 38.56\% \right) \text{ on } \underline{10,000}$$

$$1.44\% \text{ on } 10,000 = \frac{1.44}{100} \times 10000 = \underline{144}$$

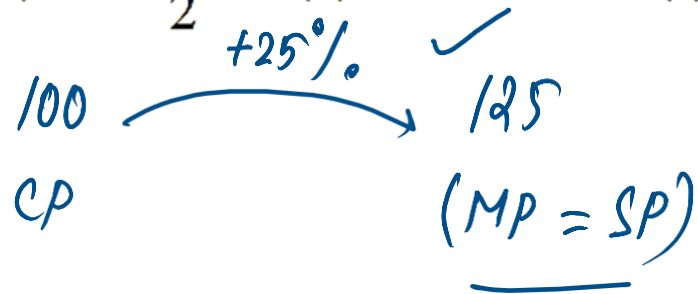
**Q)** In respect of a bill of ₹ 10000, what is the difference between a discount of 40% and two successive discounts of 36% and 4%?

- |           |           |
|-----------|-----------|
| (a) ₹ 0   | (b) ₹ 144 |
| (c) ₹ 256 | (d) ₹ 400 |

**Ans: (b)**

Q) Articles are marked at a price which gives a profit of 25%.  
 After allowing a certain discount the profit reduces to  $12\frac{1}{2}\%$ . The discount percent is

- (a)  $12\frac{1}{2}\%$  (b) 10% (c) 12% (d) 11.1%



$$\frac{\cancel{100}^9}{\cancel{125}_5} = \frac{100 - d\%}{100 + \frac{25}{2}}$$

$$\frac{\cancel{45}^4 \cancel{225}^4 \times 2}{\cancel{5}^4 \times \cancel{2}^4} = 100 - d\%$$

$$90 = 100 - d\%$$

$$\underline{d = 10\%}$$

CP, MP, P%.  $d\% = ?$

$$\frac{CP}{MP} = \frac{100 - d\%}{100 + P\%}$$

**Q)** Articles are marked at a price which gives a profit of 25%.  
After allowing a certain discount the profit reduces to

$12\frac{1}{2}\%$ . The discount percent is

- (a)  $12\frac{1}{2}\%$  (b) 10% (c) 12% (d) 11.1%

**Ans: (b)**

A shopkeeper marks the price of an article at ₹200. After allowing a discount of 10%, he still gains 20% on the cost price. What is the cost price of the article?

- (a) ₹ 170                      (b) ₹ 160  
(c) ₹ 150                      (d) ₹ 120

$$\frac{200}{CP} = \frac{100 + 20}{100 - 10}$$

$$CP = \frac{200 \times 90}{120} = \underline{\underline{₹ 150}}$$

A shopkeeper marks the price of an article at ₹ 200. After allowing a discount of 10%, he still gains 20% on the cost price. What is the cost price of the article?

- (a) ₹ 170                      (b) ₹ 160  
(c) ₹ 150                      (d) ₹ 120

**Ans: (c)**

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