CAT Profit & Loss

20 Practice Questions with Detailed Solutions | CAT Quantitative Aptitude

This set covers all key Profit & Loss sub-topics tested in CAT: basic P&L, markup & discount, successive discounts, dishonest dealings, multi-level chains, and mixture-based problems. Difficulty spans Easy (E), Medium (M) and Hard (H).

Key Formulas

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Profit % = (SP - CP) / CP x 100
Loss % = (CP - SP) / CP x 100
SP = CP x (1 + Profit%/100) | CP = SP / (1 + Profit%/100)
Discount% = (MP - SP) / MP x 100
Net Effect (markup m%, discount d%) = m - d - (m x d)/100
Equiv. single discount (d1, d2) = 1 - (1-d1/100)(1-d2/100) [as fraction]
Dishonest dealer profit% = (True wt - False wt) / False wt x 100
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Practice Questions

Q1. Basic P&L; — Easy

A shopkeeper buys 80 kg of sugar at Rs.15/kg. He sells 60 kg at 20% profit and the remaining 20 kg at 10% loss. What is his overall profit percentage?

(A) 10.0%
(B) 12.5%
(C) 11.25%
(D) 13.75%

Answer: (B) 12.5%

Solution: Cost = 80x15 = Rs.1200. SP1 = 60x15x1.2 = Rs.1080. SP2 = 20x15x0.9 = Rs.270. Total SP = Rs.1350. Profit% = (150/1200)x100 = 12.5%.

Q2. CP-SP Relation — Easy

The cost price of 15 articles equals the selling price of 12 articles. Find the profit percentage.

(A) 20%
(B) 25%
(C) 30%
(D) 33.33%

Answer: (B) 25%

Solution: Let CP per article = x. SP of 12 = 15x => SP per article = 15x/12 = 1.25x. Profit% = 25%.

Q3. Markup & Discount — Easy

A trader marks goods 40% above cost and offers a 25% discount. Find profit percentage.

(A) 5%
(B) 8%
(C) 10%
(D) 15%

Answer: (A) 5%

Solution: SP = CP x 1.4 x 0.75 = 1.05 CP. Profit% = 5%. Shortcut: m-d-(md/100) = 40-25-10 = 5%.

Q4. Successive Discounts — Easy

Two successive discounts of 20% and 30% are equivalent to a single discount of:

(A) 44%
(B) 50%
(C) 46%
(D) 48%

Answer: (A) 44%

Solution: Equivalent = 1 - (0.8 x 0.7) = 1 - 0.56 = 0.44 = 44%.

Q5. Selling Price Recovery — Medium

Ravi sells a watch at 15% profit. Had he sold it at Rs.57 more, he would have gained 20%. Find the cost price.

(A) Rs.1100
(B) Rs.1140
(C) Rs.1200
(D) Rs.1050

Answer: (B) Rs.1140

Solution: (0.20 - 0.15) x CP = 57 => 0.05 CP = 57 => CP = Rs.1140.

Q6. Markup & Discount 2 — Medium

A shopkeeper gives 10% discount and still earns 35% profit. If the marked price is Rs.900, find the cost price.

(A) Rs.550
(B) Rs.600
(C) Rs.625
(D) Rs.660

Answer: (B) Rs.600

Solution: SP = 900 x 0.9 = Rs.810. CP = 810 / 1.35 = Rs.600.

Q7. Dishonest Dealer — Medium

A dishonest shopkeeper uses a 900 g weight instead of 1 kg and sells at cost price. What is his profit percentage?

(A) 9%
(B) 10%
(C) 11.11%
(D) 12.5%

Answer: (C) 11.11%

Solution: Profit% = (1000-900)/900 x 100 = 100/900 x 100 = 11.11%.

Q8. Multi-level Chain — Medium

A sells to B at 20% profit; B sells to C at 25% profit. C pays Rs.900. What is A's cost price?

(A) Rs.500
(B) Rs.540
(C) Rs.600
(D) Rs.625

Answer: (C) Rs.600

Solution: CP_A x 1.2 x 1.25 = 900 => CP_A x 1.5 = 900 => CP_A = Rs.600.

Q9. Loss on SP — Medium

By selling 45 oranges a vendor loses an amount equal to the SP of 5 oranges. Find loss %.

(A) 9.09%
(B) 10%
(C) 11.11%
(D) 12.5%

Answer: (B) 10%

Solution: CP of 45 = SP of 45 + SP of 5 = SP of 50. Loss% = 5/50 x 100 = 10%.

Q10. Equal % Profit & Loss — Medium

A man buys two articles for Rs.2400 each. Sells one at 20% profit and the other at 20% loss. Overall result?

(A) No profit/loss
(B) 4% profit
(C) 4% loss
(D) 2% loss

Answer: (C) 4% loss

Solution: When same-CP items are sold at equal % profit & loss, net loss% = n^2/100 = 400/100 = 4%.

Q11. Mixture Selling — Medium

Rice bought at Rs.30/kg mixed with rice at Rs.40/kg in ratio 3:2. Sold at Rs.42/kg. Profit%?

(A) 20%
(B) 22.5%
(C) 23.5%
(D) 25%

Answer: (A) 20%

Solution: Avg CP = (3x30 + 2x40)/5 = 170/5 = Rs.34/kg. Profit% = (42-34)/34 x 100 = 23.5%. [Corrected answer: (C) 23.5%]

Q12. Manufacturer Chain — Medium

Manufacturer sells to dealer at 30% profit; dealer sells to customer at 20% profit. Customer pays Rs.3120. Find manufacturer's CP.

(A) Rs.1800
(B) Rs.2000
(C) Rs.2400
(D) Rs.1950

Answer: (B) Rs.2000

Solution: CP x 1.3 x 1.2 = 3120 => CP x 1.56 = 3120 => CP = Rs.2000.

Q13. Pen Selling — Medium

Selling 10 pens for Rs.9 gives 10% loss. For 20% gain, at what price should 10 pens be sold?

(A) Rs.10
(B) Rs.11
(C) Rs.12
(D) Rs.13

Answer: (C) Rs.12

Solution: SP=Rs.9 at 10% loss => CP = 9/0.9 = Rs.10 for 10 pens. For 20% gain: SP = 10 x 1.2 = Rs.12.

Q14. Discount + Profit — Medium

A shopkeeper marks price 60% above CP and gives discount d%. Profit is 28%. Find d.

(A) 15%
(B) 18%
(C) 20%
(D) 22%

Answer: (C) 20%

Solution: 1.6 x (1 - d/100) = 1.28 => (1 - d/100) = 0.8 => d = 20%.

Q15. Loss Recovery — Medium

A person sells an article at 12.5% loss. Had SP been Rs.75 more, profit would be 6.25%. Find CP.

(A) Rs.350
(B) Rs.375
(C) Rs.400
(D) Rs.450

Answer: (C) Rs.400

Solution: (1.0625 - 0.875) x CP = 75 => 0.1875 CP = 75 => CP = Rs.400.

Q16. Two Mobiles — Hard

Ram sells two mobiles, each with SP=Rs.11,000. One at 10% profit, other at 10% loss. Net profit/loss?

(A) Rs.200 loss
(B) Rs.2000 loss
(C) Break even
(D) Rs.1000 loss

Answer: (A) ~Rs.222 loss (closest: Rs.200)

Solution: CP1 = 11000/1.1 = Rs.10000. CP2 = 11000/0.9 = Rs.12222. Total CP = Rs.22222. Total SP = Rs.22000. Net loss = Rs.222 (approx Rs.200 per option A).

Q17. Successive Trade — Hard

Goods worth Rs.1000 sold at 10% loss; proceeds reinvested and sold at 20% profit. Overall gain/loss%?

(A) 8% profit
(B) 8% loss
(C) 10% loss
(D) Break even

Answer: (A) 8% profit

Solution: Final = 1000 x 0.9 x 1.2 = Rs.1080. Profit = Rs.80. Gain% = 8%.

Q18. False Weight + Markup — Hard

A trader uses 800 g instead of 1000 g and marks price up 25%. Overall profit%?

(A) 50%
(B) 56.25%
(C) 62.5%
(D) 48%

Answer: (B) 56.25%

Solution: Cost of 800g = Rs.800 (at Rs.1/g). Charges for 1000g at 25% markup => SP = Rs.1250. Profit% = (1250-800)/800 x 100 = 56.25%.

Q19. Broken Eggs — Hard

A person buys 180 eggs at Rs.5 each. 20 break; 30 sold at Rs.4 each. At what price must remaining be sold to earn 25% profit overall?

(A) Rs.7.50
(B) Rs.7.73
(C) Rs.8.00
(D) Rs.8.25

Answer: (B) Rs.7.73

Solution: Total cost = 180x5 = Rs.900. Required revenue = 900x1.25 = Rs.1125. Revenue from 30 eggs = Rs.120. Remaining = 180-20-30 = 130 eggs. Price = (1125-120)/130 = 1005/130 = Rs.7.73.

Q20. Adulteration Profit — Hard

A milkman mixes water (cost=0) with milk at Rs.40/litre in ratio 1:4 and sells the mix at Rs.40/litre. Profit%?

(A) 20%
(B) 25%
(C) 33.33%
(D) 40%

Answer: (B) 25%

Solution: 5 litres sold (1 water + 4 milk). Cost = 4x40 = Rs.160. SP = 5x40 = Rs.200. Profit% = 40/160 x 100 = 25%.