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

Formula / Concept	Expression
Profit %	**(SP – CP) / CP × 100**
Loss %	**(CP – SP) / CP × 100**
SP from CP & profit%	**CP × (1 + Profit%/100)**
CP from SP & profit%	**SP / (1 + Profit%/100)**
Discount %	**(MP – SP) / MP × 100**
Net effect: markup m%, discount d%	**m – d – (m × d)/100**
Equivalent single discount (d1, d2)	**1 – (1–d1/100)(1–d2/100) [as fraction]**
Dishonest dealer profit %	**(True wt – False wt) / False wt × 100**

Difficulty Legend

Level	Questions	Q Numbers	Border Colour
Easy	4	Q1 – Q4	■■■ Green
Medium	11	Q5 – Q15	■■■ Orange
Hard	5	Q16 – Q20	■■■ Red

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 = 80×15 = Rs.1200. SP1 = 60×15×1.2 = Rs.1080. SP2 = 20×15×0.9 = Rs.270. Total SP = Rs.1350. Profit% = (150/1200)×100 = 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 × 1.4 × 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 × 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) × 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 × 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 × 100 = 100/900 × 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: $CP_A \times 1.2 \times 1.25 = 900 \Rightarrow CP_A \times 1.5 = 900 \Rightarrow CP_A =$ 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 × 100 = 10%.

Q10. Equal % Profit & Loss [Medium]

A man buys two articles for Rs.2400 each. He sells one at 20% profit and the other at 20% loss. What is the 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 is mixed with rice at Rs.40/kg in ratio 3:2. The mixture is sold at Rs.42/kg. Find Profit%.

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

Answer: (C) 23.5%

Solution: Avg CP = (3×30 + 2×40)/5 = 170/5 = Rs.34/kg. Profit% = (42–34)/34 × 100 = 23.5%.

Q12. Manufacturer Chain [Medium]

A manufacturer sells to a 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 × 1.3 × 1.2 = 3120 ⇒ CP × 1.56 = 3120 ⇒ CP = Rs.2000.

Q13. Pen Selling [Medium]

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

(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 × 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 × (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 the 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) × CP = 75 ⇒ 0.1875 × CP = 75 ⇒ CP = Rs.400.

Q16. Two Mobiles [Hard]

Ram sells two mobiles each at 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.10,000. CP2 = 11000/0.9 ≈ Rs.12,222. Total CP = Rs.22,222. Total SP = Rs.22,000. Net loss ≈ Rs.222.

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 × 0.9 × 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 the price up by 25%. What is the overall profit%?

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

Answer: (B) 56.25%

Solution: Cost of 800 g = Rs.800 (at Rs.1/g). Charges for 1000 g at 25% markup ⇒ SP = Rs.1250. Profit% = (1250–800)/800 × 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 the remaining be sold to earn 25% overall profit?

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

Answer: (B) Rs.7.73

Solution: Total cost = 180×5 = Rs.900. Required revenue = 900×1.25 = Rs.1125. Revenue from 30 eggs = Rs.120. Remaining = 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. Find Profit%.

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

Answer: (B) 25%

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

Answer Key

Q1	Q2	Q3	Q4	Q5
Q1: (B)	**Q2:** (B)	**Q3:** (A)	**Q4:** (A)	**Q5:** (B)
Q6: (B)	**Q7:** (C)	**Q8:** (C)	**Q9:** (B)	**Q10:** (C)
Q11: (C)	**Q12:** (B)	**Q13:** (C)	**Q14:** (C)	**Q15:** (C)
Q16: (A)	**Q17:** (A)	**Q18:** (B)	**Q19:** (B)	**Q20:** (B)

Note: Q11 answer corrected to (C) 23.5% — see solution above.