Assignment No = 2

Topic = Profit & loss, percentage.

Q.1 If an article is sold at a loss of 25% & the selling price is Rs450, find cost price.

→ Let C.P = 100,
then SP = 75
But real S.P is 450

100 → 75
x → 450

$$x = \frac{450 \times 100}{75}$$

$$x = 150 \times 4$$

$$x = 600$$

∴ C.P = 600

Ans = C.

2] A person bought an item for Rs. 1200 & sold it for Rs. 1440. What is the profit percentage?

→ CP = 1200 SP = 1440

$$P = \frac{C.P + SP}{C.P} \times 100$$

$$= \frac{1200 - 1440}{1200}$$

$$= \frac{2400}{12}$$

Ans = 20%. Ans = C

Q.3] If the selling price of an item is Rs 960 & the cost price is Rs 800. what is profit percentage?

→ SP = 960 CP = 800

$$P = \frac{S.P - CP}{C.P} \times 100$$

$$= \frac{960 - 800}{800} \times 100$$

$$= \frac{160}{8}$$

$$= 20\%.$$

Ans = b

Q.4. A shopkeeper sells a fan at Rs 1200 with a loss of 20%. Find cost price?

→ SP = 1200

L = 20%.

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

$$20 = \frac{x - 1200}{x} \times 100$$

$$x = \frac{x - 1200}{20} \times 100^{5}$$

$$x = 5x - 6000$$

$$4x = 6000$$

$$x = \frac{6000}{4}$$

$$x = 1500$$

Ans = b

Q.5 If the cost price of an article is Rs 400 & it is sold for Rs 480 what is the profit percentage?

→ CP = 400 , SP = 480

$$P = \frac{SP - CP}{CP} \times 100$$

$$= \frac{480 - 400}{400} \times 100$$

$$= \frac{80}{400} \times 100$$

P = 20%.

Ans = b

Q.6 A trader gives two successive discounts of 20% & 10%. Find the net discount percentage.

→ S(↓) % = 20% + 10% + 2

S% = 32%.

Ans = C

Q.7 A man sold a shirt for Rs 800 after giving 20% discount. Find the market price.

→ SP = 800 , D = 20%.

$$D = \frac{MP - SP}{M.P} \times 100$$

$$20 = \frac{M.P - 800}{MP(x)} \times 100$$

$$20x = 100x - 8000$$

$$x = \frac{8000}{20}$$

$x = 1000$ Ans = b

Q.8 A watch is sold for ₹1800 with a 25% profit. Find cost price.

→ S.P = 1800, P = 25.

$$P = \frac{CP - SP}{CP} \times 100$$

$$25 = \frac{x - 1800}{x} \times 100$$

$$25x = -100x + 180000$$

$$x = \frac{18000}{125}$$

$$x = 1400$$

C.P = 1400

Q.9 A shopkeeper marks an article at Rs 1500 & allows 10% discount find the selling price.

→ MP = 1500, D = 10%.

$$SP = 90\%\ 1500$$

$$= 90 \times 15$$

$$SP = 1350$$

Ans = b

Q.10 A merchant buys 10 pens for Rs 150 & sells them for ₹200. what is his profit percentage?

→ C.P = 150, SP = 200

$$P = \frac{SP - CP}{CP} \times 100$$

$$= \frac{200 - 150}{150} \times 100$$

$$= \frac{100}{3}$$

$$P = 33.33\%$$

Ans = C

Q.11 A trader gives a 15% discount on an item & still makes a profit of 20%. what is the markup percentage?

→ D = 15%. P = 20%. MP = ?

Let CP = 1000 then SP = 120

SP = M.P − 15% of MP

= 85% MP

$$MP = \frac{120}{85} \times 100$$

MP = 141.18

MP% = ((141.18 − 100) / 100) × 100

MP% = 41.18%

Q.12 A table is sold for Rs 2250 at 10% profit. what is cost price?

→ SP = 2250

P = 10%

$SP = CP \times (1 + 0.10)$

$2250 = CP(1.10$

$CP = \frac{2250}{1.10}$

$CP = 2045.40$

Ans = C

Q.13 If a shopkeeper wants a profit of 25% on an item that costs 800. what should be selling price?

→ P = 25% CP = 800

$P = \frac{CP - SP}{CP} \times 100$

$25 = \frac{800 - x}{x} \times 100$

$25x = 800 \times 8000$

$x = \frac{25}{100} \times 800$

$x = 200$

$SP = CP + x$

$= 800 + 200$

$SP = 1000$

Ans b

Q.14 A dealer makes a profit of 12% after allowing a 5% discount. Find the marked price of article whose cost price is 400

→ $P = 12\%$, $D = 5\%$ $CP = 400$

$$SP = 112\% \cdot 400$$

$$SP = 448$$

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

$$5 = \frac{x - 448}{x} \times 100$$

$$5x = 100x - 44800$$

$$95x = 44800$$

$$x = \frac{44800}{95}$$

$$x = \boxed{471.58}$$

Q.15 A book is bought for Rs 480 & sold for Rs 576 what is profit percentage?

→ $CP = 480$, $SP = 576$

$$P = \frac{SP - CP}{CP} \times 100$$

$$= \frac{576 - 480}{480} \times 100$$

$$= \frac{96}{480} \times 100$$

$$P = 20\%$$

Ans = C

Q.16 If a profit of Rs 50 is made on an article whose cost price is Rs 500. what is profit ?

→ C.P = 500. P = 50.

$$SP = CP + P = 500 + 50 = 550$$

$$P\% = \frac{50}{500} \times 100$$

$$P\% = 10\%$$

Ans = C

Q.17 A shopkeeper sells a cycle at 15% profit if the selling price is Rs 2300. Find the cost price.

→

$$P = 15, \quad SP = 2300$$

$$P = \frac{SP - CP}{CP} \times 100$$

$$15x = (2300 - x) \times 100$$

$$3x = (2300 - x)\,20$$

$$23x = 46000$$

$$x = \frac{46000}{23}$$

$$x = 2000$$

Ans = b

Q.18 The cost price of article is Rs 750 & it is sold at Rs 900. what is gain percentage?

→ CP = 750 SP = 900

$$P = \frac{150}{750} \times 100$$

P/. = 20%

Ans = C

Q.19 A man sells an item at 20% loss. If the SP Rs 640 find cost price?

→ L = 20% SP = 640

$$L = \frac{x - 640}{x} \times 00$$

$20x = 100x - 6400$

$80x = 6400$

$x = 6400/80$

$x = 800$

Ans = C

Q.20 A trader sell mobile for Rs 9600 at profit 20%. Find cost price?

→ SP = 9600 P = 20%

$$P = \frac{9600 - x}{x} \times 100$$

$20x = 960000 - 100x$

$x = 9600/80$

$x = 8000$

Ans = b

Q.21 A shopkeeper sells an item for Rs 500 at 20% profit. what was the cost price?

→

$SP = 500 \qquad P = 20\%$

$$P = \frac{500 - x}{x} \times 100$$

$$20x = 50000 - 100x$$

$$120x = 50000$$

$$x = \frac{50000}{120}$$

$$x = \boxed{416.67}$$

Q.22 A man buys two articles for Rs. 1500 each. He sells one at a 20% profit & other at 10% loss. Find his net profit/loss.

→

$SP_1 = 120\% \ 1500$

$= 1800$

$SP_2 = 90\% \ 1500$

$= 1350$

Total CP = 3000

Total SP = 3150

$$L\%/P\% = \frac{150}{3000} \times 100$$

$P\% = 5\%$ profit

Ans = b

Q.23 A trader sells an article @ Rs. 1250 with a loss of 12%. Find the cost price?

→ SP = 1250 , L% = 12%

$12x = (x - 1250)/100$

$12x = 100x - 125000$

$88x = 125000$

$x = 125000/88$

CP = x = **1420.45**

Q.24 Find the profit percent earned after selling an article at doubled rate for half quantity.

→ Prev Quantity = 100 price = 100

After quantity = 50 price = 200

$P\% = \frac{200 - 50}{50} \times 100^2$

$= 150 \times 2$

P% = 300%

Ans = **b**

Q.25 A number is multiplied by 20% of itself. the sum is then doubled. If the final value is 490, find the number.

→ Let n be number

$$n * \left(\frac{n * 20}{100}\right) = 0.2n^2$$

$$2(0.2n^2) = 490$$

$$0.4n^2 = 490$$

$$n^2 = \frac{490}{.4} \times 100$$

$$n^2 = 12.25 \times 100$$

$$n^2 = 1225$$

$$n = 35$$

Ans = [a]

Q.26 An article is sold at 20% less than its cost price. If the selling cost is 50 rupees & the selling cost is 5% of the selling price, find the loss.

→ L% = 20%,

5% SP = S.C

5% SP = 50

$$SP = \frac{50}{5} \times 100$$

$$SP = 1000$$

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

$$\frac{20}{100} = \frac{x - 1000}{x} \times \frac{100}{5}$$

$x = 5x - 5000$

$4x = 5000$

$x = 5000/4$

$x = 1250$

$L = CP - SP$

$= 1250 - 1000$

$L = 250$ rupees

Ans = C

Q.27 If the seller sells half of his goods at 20% loss & the rest of his goods at 50% profit. Find the profit percentage on entire transaction.

⇒ $CP = 100$, $CP = 50$, $CP_2 = 50$

$SP_1 = 40$

$SP_2 = 75$

Total $SP = 115$

$P\% = \frac{115 - 100}{100} \times 100$

$P\% = 15\%$

Ans = b

Q.28 The expense of selling an article worth rupees 6000 is 50 rs. If the selling expense is 10% more than the loss find the loss percentage.

⇒ $L + 10\% L$

$50 = 1.1L$

$L = 45.45$

$L\% = \left(\frac{45.45}{6000}\right) \times 100$

$L\% \simeq 0.76\%$

Q.29 The profit on selling 1 article is equal to the cost price of 2 such articles. Find profit percentage.

→ $P\% = \frac{300 - 100}{100} \times 100$

$P\% = 200\%$

Ans = C

Q.30 The initial price of an article is decreased by 20% but the selling price remains constant. If the initial profit was 500 rupe find the new profit. It is known the Inital profit % was 20% at cost price.

→ $P = SP - CP$

$500 = 20\% \cdot CP$

$CP = \frac{500}{20} \times 100$

$CP = 2500$

$SP = 3000 \ (2500 + 500)$

$CP = CP - 20\% \ CP$

$= 2500 - 500$

$CP = 2000$

New profit $= \frac{3000 - 2000}{2000} \times 100$

$P = 1000$

Ans = C

Q.31 The price of pair of slippers is decreased by 10%. If the selling price is constant, If the initial profit percentage was equal to 25%. find the new profit percentage.

→ $CP_1 = 100$, $CP_2 = 90$, $SP_1 = SP_2$

$SP_1 = 125 = SP_2$ (25% profit)

$$\text{New Profit} = \frac{125 - 90}{90} \times 100$$

$$\text{New profit} = \frac{350}{9} = 38.8\%$$

Ans = b

Q.32 The cost price of article is doubled & the selling price is made half. If the initial profit % was 500%. find profit %.

→ $CP_1 = 100 \rightarrow CP_2 = 200$ $SP_1 = 600$, $SP_2 = 300$

$$P\% = \frac{300 - 200}{100} \times 100$$

$$P\% = 100\%$$

Ans = C

Q.33 A shoopkeeper increases the price of suger by 25%. By how much a family should decrease their consumption to maintain regular prices

→ $CP_1 = 100$ $CP_2 = 125$

Expenditure $100x$

New Consumption $= 7$ kg

$125y = 100x$

$y = 0.8x$

Decrease in consumption $= x - y$

$= x - 0.8x = 0.2x$

Q.34 If the discount is twice the cost price & the marked price is 10000 Find the selling price. No profit or loss was made

→ $D = 2C$ $MP = 10000$

$CP = SP$

$D = MP - SP$

$2C = MP - CP$

$2C = 10000 - C$

$3C = 10000$

$C = \frac{10000}{3}$

$C = 3333.33$

Ans b

Q40 The cost price of article is 30% less than the selling price. The discount is 40% selling price. If the marked price is 12600 find cost price.

→ MP = 12600 CP = 70% SP D = 40%.

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

$$= \frac{12600 - x}{12600} \times 100$$

$$5040 = 12600 - x$$

$$SP = x = 7560$$

$$CP = 70\% \, 7560$$

$$= 7 \times 756$$

$$CP = 5292$$

Ans = d

Q41 If 33.33% of number is 20 more than 16.66% of the number, find 120% of the number.

$$33.33\% \cdot x = 20 + 16.66\% \cdot x$$

$$\frac{x}{3} = 20 + \frac{x}{6}$$

$$\frac{x}{3} - \frac{x}{6} = 20$$

$$\frac{x}{6} = 20$$

$$x = 120$$

$$120\% x = 120\% \cdot 120 = 144$$

Ans = C

Q.42 Find the number if 20% of number is 20 more than 20% of another number 20.

→ $20\% \cdot x = 20 + 20 + 20$

$\frac{x}{5} = \frac{20}{5} + 20$

$x = 5(4 + 20]$

$x = 120$

Ans = C

Q.43 A number if doubled then tripled & this process is repeated twice. What is the percentage changes

→ $100 \rightarrow 200 \rightarrow 600 \rightarrow 1200 \rightarrow 3600$

% change $= \frac{3600 - 100}{100} \times 100$

$= 3500\%$

Ans = a

Q.44 By how much should 234 be reduced to make it 65% of itself

→ $234 - x = \frac{65}{100} \times 234$

$\frac{65}{100} \times 234 = 152.1$

$234 - x = 152.1$

$x = 81.9$

Ans b