[SHILPA PANDEY]

[Assingment-2]

# Profit and Loss Percentage

① Article sold at a loss of 25% & selling price is ₹450. find C.P.

→ $x \xrightarrow{-25} 450$

$\frac{75}{100} = \frac{450}{x}$ $\quad \therefore \frac{3}{4} = \frac{450}{x}$

$3x = 1800$

$x = \frac{1800}{3} = \boxed{600.}$

② Bought an item for ₹ 1200 & sold it for ₹1440 profit.

→ $1440 - 1200 \Rightarrow 0240$

$\frac{1200}{100} = \frac{240}{x}$

$12x = 240$

$x = \frac{240}{12} = \boxed{20\%.}$

③ S.p is ₹960 & C.p is ₹800 then Profit?

→ $960 - 800 \Rightarrow 160$

$\frac{800}{100} = \frac{160}{x}$

$8x = 160$

$\boxed{x = 20\%.}$

(4) sells fan ₹ 1200 with loss of 20%. find CP = ?

→ $x \xrightarrow{-20\%} 1200$

$\frac{480}{100} = \frac{1200}{x}$

$\Rightarrow \therefore 4x = 6000$

$x = 1500$

(5) CP → ₹ 400, & sold for ₹ 480, find Profit

→ 480 − 400 = 80

$\Rightarrow \frac{400}{100} = \frac{80}{x} \Rightarrow 4x = 80 =$ 20%

(6) two successive discounts of 20% & 10%. find net discount %.

→ $100 \xrightarrow{-20} 80 \xrightarrow{-10} 72$

$\Rightarrow 100 - 72 =$ 28%

(7) sold for ₹ 800 after giving a 20% discount. find marked price.

$\Rightarrow x \xrightarrow{20\%} 800 \quad \frac{80}{100} = \frac{800}{x} \Rightarrow 4x = 4000$

$x = 1000$

(8) sold for ₹ 1800 after giving a 20% discount. with a 25%. find cp.

$\Rightarrow CP \xrightarrow{+25\%} 1800 \quad \frac{125}{100} = \frac{1800}{x}$

$5x = 7200 \quad x = 1440$

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(9) marks of ₹ 1500 & allows a 10% discount find SP.

→ 1500 $\xrightarrow{-10\%}$ 1500
−150
1350

(10) Buys 10 pens for ₹ 150 & sells for ₹ 200. profit = ?

→ price of 1 pen $= \frac{150}{10} = 15 \Rightarrow \frac{15}{100} = \frac{20}{x}$

Now, sells $= \frac{200}{10} = 20$

$3x = 400$

$x = \frac{400}{3} = 133.33$

$\therefore$ 33.33%

(11) gives a 15% discount & still make, a profit 20%. what is make up percentage?

→ 100 $\xrightarrow{-15\%}$ 85

$x =$ $\xrightarrow{+20\%}$ 85

$\frac{6}{\cancel{120}} = \frac{85}{x}$

$6x = 425$

$x = 70.83 = C.P$

$100 - 70.83 = 29.17 \simeq 30$

$\therefore \frac{30}{70} \times 100 =$ 42.85%

(12) Sold for ₹ 2250 at a 10% profit what is CP.

→ $x \xrightarrow{+10\%} 2250$

$\frac{110}{100} = \frac{2250}{x}$

$11x = 22500$

$x = 2045$

(13) Wants a profit of 25% on a item cost: ₹800 what should be SP.

→ $800 \xrightarrow{25\%} 10 + 10 + 5 \rightarrow 80 + 80 + 40 \rightarrow 200$

$800 + 200$

$= 1000$

(14) Sold for ₹ 15,000/- at loss of 10%. find C.P.

→ $\frac{90}{100} = \frac{15,000}{x}$ $\quad 9x = 150,000$

$x = 16,666$

(15) marked 50% above the cp & then sold at discount of 20%. what is profit %.?

$100 \xrightarrow{+50\%} 150 \xrightarrow{-20\%} 120$

C.P M.P

∴ 20%.

(16) Makes profit of 12%. after allowing a 5% discount find M.P whose C.P is ₹ 400.

400 $\xrightarrow{12\frac{1}{2}\%}$ x $\xrightarrow{-5\%}$ 12 = 10+1+1
C.P M.P = 40+4+4.

(17) 448 is S.P after giving 5% discount on M.P = 48

∴ 400
+48
448

M.P $\xrightarrow{-5\%}$ 448.

$\Rightarrow \frac{95}{100} = \frac{448}{x}$ $\Rightarrow 19x = 8960$

$\boxed{x = 471.57}$

(18) C.P ₹ 480 & S.P 576 Profit?

→ 576
480
096

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

$= \boxed{20\%}$

(18) Profit of ₹ 50 is made whose ₹ 500 profit %?

→ C.P → 500
P → 50
S.P → 550

$\Rightarrow \frac{50}{500} \times 10 \Rightarrow \boxed{10\%}$

(19) Sells at 15% profit & S.P is 2300. CP = ?

x $\xrightarrow{+15\%}$ 2300
C.P S.P

$\Rightarrow \frac{15}{100} = \frac{2300}{x}$ (23, 20)

$23x = 46000$

$\boxed{x = 2000}$

(20) C.P is ₹ 750 & S.P 900 gain % = ?

S.P → 900
C.P → 750
150

$\Rightarrow \frac{150}{750} \times 100 = 20\%$

(21) Sells at 20% loss, S.P ₹ 640 C.P → ?

→ 100 $\xrightarrow{-20\%}$ 80
C.P S.P
x $\xrightarrow{-20\%}$ 640

$\Rightarrow \frac{100}{80} = \frac{x}{640} \Rightarrow 4x = 3200$

$x = 800$

(22) Sell for ₹ 9600, it profit 20% find C.P

→ x $\xrightarrow{+20\%}$ 9600

$\Rightarrow \frac{120}{100} = \frac{9600}{x}$

$6x = 48000$

$x = 8000$

(23) Sells for ₹ 500 at 20% profit C.P = ?

x $\xrightarrow{+20\%}$ 500
(C.P) (S.P)

$\Rightarrow \frac{120}{100} = \frac{500}{x}$

$6x = 2500$ $x = 416.67$

(24) buys 2 for 1500 each. sells one at 20% profit & other at 10% loss. find profit or loss.

→ 1500 $\xrightarrow{+20\%}$ 1800
1500 $\xrightarrow{-10\%}$ 1350
3000 3150

$= \frac{150}{3000} \times 100 =$ 5% profit

(25) Sells at ₹ 1250 with loss 12%. CP = ?

$\rightarrow x \xrightarrow[\text{C.P}]{+12} \underset{\text{S.P}}{1250}$ $\quad \frac{88}{100} = \frac{1250}{x}$

$22x = 31,250$

$x = 1420$

(26) find profit %. earned after selling an article at a doubled ante for half ante?

→ 100 → 200 as for half quantity.

∴ 1200 for remaining half & unitity.

400

$400 - 100 =$ 300 %.

(27) No. is multiplied by 20% of itself the sum is then doubled, then final value is 490 find no.

→ Suppose

$100 \xrightarrow{20\%} 20$ ∴ $100 + 20 = 120 + 120 = 240$.

Now, $\frac{240}{100} = \frac{490}{x}$

$24x = 4900$

$x = 204.16$

(28) Sold at 20% loss by its C.P if selling cost 250 & selling cost is 5% of S.P find loss.

→ C.P $\xrightarrow{-20\%}$ S.P.

S.C = 50

1000 $\xrightarrow{-20\%}$ 800.

1000
−800
200 loss

$5 = \frac{50}{C.P} \times 100$

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

$CP = 1000$

(29) Sells half his goods at 20% loss of cost of good is 50% profit find profit % on entire transaction.

⇒ 100

−20% → 50 → 40

50 → 50% ↑ → 75

∴ 75
+40
115

∴ 15% Profit

(30) Selling expences for ₹ 6000 article is ₹ 50. if selling exp. is 10% more than loss. find the loss %.

⇒ loss $\xrightarrow{+10\%}$ 50 ∴ loss ≈ 45.

∴ $\frac{45}{6000} \times 100 = 0.75\%$

(31) Profit on selling 1 article = Cost of 2 such article find profit %.

⇒ profit on 1 article = C.P of 2 article.

Suppose 100 = 50 + 50.

∴ SP of 1 article = 50 & profit is 100

∴ $\frac{100}{50} \times 100 = 200\%$

(32) Intial price is decreased by 20% but S.P as constant if initial profit cos ₹500. find new profit. It is known the initial profit was 20% of C.P.

$\Rightarrow$ I.P $\xrightarrow{-20\%}$

2500 $\xrightarrow{-20\%}$ 2500
500
2000

$20 = \frac{500}{C.P} \times 100$

$\Rightarrow C.P = \frac{500}{20} \times 100$

$\boxed{CP = 2500}$

Profit was 500 $\therefore$ 2500 + 500 = 3000 (SP)
& now, S.P = 3000 & C.P 2000
$\therefore$ profit = 3000 − 2000 = $\boxed{1000}$

(33) Price decreased by 10%. & S.P is constant. if initial profit % = 25% find new profit.

$\Rightarrow$ P $\xrightarrow{-10\%}$ SP = const.

suppose 100 $\xrightarrow{+25\%}$ 125
for initial (CP) (SP)

$\therefore$ CP ₹ 100 & decrease by 10%.
$\therefore$ CP = 90 & imp remain same

$\therefore$ Profit = SP − C.P
= 125 − 90
= 35.

Profit % $= \frac{35}{90} \times 100 = \boxed{38.88\%}$

34) C.P is doubled & S.P is made half, If the initial profit % was 500% find profit % now

→ $500\% = \frac{500}{100} \times 100$

∴ C.P = 100 & Profit = 500

∴ S.P = 600 — in initial condition

Now C.P = $2 \times 100 = 200$

S.P = $\frac{1}{2} \times 600 = 300$

Profit = $300 - 200 = 100$

Profit % = $\frac{100}{200} \times 100 = 50\%$

35) Sugar increase by 25% How much % family decrease this consumption to maintain regular pairs.

$\Rightarrow 100 \xrightarrow{+25\%} 125 \longrightarrow 100$

O.P N.P.

$\frac{25}{125} \times 100 = \frac{1}{5} \times 100 = 20\%$.

36) Profit on selling 15 articles = cost of 8 articles. find profit %.

→ profit on selling 15 articls = cost of 8 articles

$100 = 50 + 50$.

profit for 1 article $= \frac{100}{15} = 6.66$.

cost of —11— = 50

profit % $= \frac{6.66}{50} \times 100 =$ **13.33%**

(37) 40% of a number A is 50% of a number B. find A : B.

$\Rightarrow$ 40% A = 50% B $\therefore \frac{40}{100} A = \frac{50}{100} B$

$\Rightarrow \frac{2}{5} A = \frac{1}{2} B$

$\frac{A}{B} = \frac{1}{2} \times \frac{5}{2}$

$\frac{A}{B} = \frac{5}{4}$ **A : B = 5 : 4**

(38) The m.p is 5 time the discount. find S.p in terms of discount.

$\Rightarrow$ mp = 5 x discount

sp $\rightarrow$ mp - discount ...

$= 5d - d$

sp = 4d

**$\therefore$ 4 times the discount.**

(39) Solve for x = 20% of 12% of 121% of 6250

① 120% 6250 $\rightarrow$ 20 $\rightarrow$ 10 + 10 $\rightarrow$ 625

625

1250

120 $\rightarrow$ 6250 $\rightarrow$ 100

+ 1250 $\rightarrow$ 20

7500

12 % 7500 is
= 900

20% 900
= 180.

40) CP = ₹500 each 100% Profit & discount 35%
→ 500 100% → 1000 ⇒ 65/100 = 1000/x
C.P S.P
⇒ 65x = 10,000
x = 153.8

41) A is 25% more than B. By what % B
A = 25% + B
100 = 125 ⇒ 20%.

100 → 125 ∴ 20%.
A B

42) if disc. is twice the C.P & mp. is 10000, find SP No profit or loss was made.

→ disc = 2 × C.P
mP = 10,000
No profit, No loss → CP = S.P.
disc = 2 × C.P
= 2 × S.P
m.P = disc + S.P
2 × S.P + S.P.

mp = 3 SP. or 3 C.P
10,000 = 3.SP

(43) CP is 30% loss than S.P. The dis. is 40% on SP. If M.P is 12600 find C.P.

→ SP $\xrightarrow{-30\%}$ C.P

disc. is 40% on SP.

MP = 12,600

MP = disc + SP.

(44) If 33.33% of a no. is 20 more that 16.66% of the no. find 120% of number.

→ 33.33% of n = 20 + 16.66 of n

$\frac{33.33}{100} n = \frac{16.66}{100} n + 20$

$\frac{1}{3} n = \frac{1}{6} n + 20$

$\frac{2 \times 1}{2 \times 3} n = \frac{1}{6} n + 20$

$\frac{2}{6} n = \frac{1}{6} n + 20$

$\frac{2}{6} n - \frac{1}{6} n = 20$

$\frac{1}{6} n = 20$

$n = 120$

(45) Now, 120% of n

100 + 70 + 10

120 + 12 + 12

= 144

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(5) find the no. if 20 of a no. is 20 more than 20% another no. 20

⇒ 20% of $n$ = 20 + 20% of $x$.

$\frac{120}{100} n = 20 + \frac{20}{100} \times 20$ ... ($x$ be 20)

$\frac{1}{5} n = 20 + \frac{1}{5} \times 20$

$\frac{1}{5} n = 20 + 4$

$\frac{1}{5} n = 24$

$n = 120$

(6) No. is double then tripled & this process is expected twice what is % change.

⇒ Suppose 100 $\xrightarrow{\text{double}}$ 200 $\xrightarrow{\text{triple}}$ 600 — (1)

600 $\xrightarrow{\text{double}}$ 1200 $\xrightarrow{\text{triple}}$ 3600 — (2)

∴ 3600 − 100 = 3500

∴ 3500%

(7) By how much should 234 be reduce to 65% of itself.

234 $\xrightarrow{-35\%}$ $n$

∴ 81.9

(48) what is 90 % of 900 % of 9000 % of 9

→ 90 % = $\frac{90}{100}$ , 900 % = $\frac{900}{100}$ = 9 , 9000 % = $\frac{9000}{100}$ = 90

① 9000 % of 9 = 90 × 9 = 810
② 900 % of 810 → 9 × 810 = 7290
③ 90 % of 72900 → 7290 − 729
= 6561

(49) out of 25 employee 3 are set of & the salaries of rest of the employee is increased by 24 %. find total increase and decrease in company's expenditure

→ cond$^n$ (1)
25 emp if suppose salary is 100 → 25 × 100 = 2,500

→ cond 2
from 25 emp 13 left. 25 − 13 = 12.
12 emp are now in company. & their salary is increased by 24 %
∴ 12 × 124 = 1488.
Now, 2500 − 1488 = 1012.
By 1012 company's expenditure reduced
∴ $\frac{1012}{2500}$ × 1000 = 40.48 %

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Bought for Rs 3500 discount of 15% discount
is Rs = ?

CP = 3500

CI = 15%

3500 = 15%

∴ 525