Assignment - 2. Profit & Loss, Persentage.

(1) loss 25%.

Selling price = 450 Rs

$$SP = \frac{CP \times (100 - \%\ loss)}{100}$$

$$450 = \frac{CP\ (100 - 25)}{100}$$

$$45000 = 100CP - 25CP$$

$$45000 = 75\ CP$$

$$CP = 600$$

(2) cost price = 1200 Rs

sold price = 1440 Rs

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

$$= \frac{1440 - 1200}{1200} \times 100$$

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

$$= 20\ \%$$

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(3) cost price = 800

selling price = 960

profit percentage = $\frac{SP-CP}{CP} \times 100$

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

$= \frac{960-800}{8} = \frac{160}{8}$

profit % = 20 %

(4) selling price = 1200 rs

loss % = 20 %

$S.P = \frac{CP(100 - \% \text{ loss})}{100}$

$1200 = \frac{CP(100-20)}{100}$

$120000 = 100CP - 20CP$

$120000 = 80\,CP$

$CP = \frac{120000}{80}$

$CP = 1500$

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⑤ CP = 400 rs

SP = 480 rs

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

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

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

$$= 20\%$$

⑥ $$\text{net \% change} = a + b + \frac{ab}{100}$$

$$= 20 + 10 - \frac{20 \times 10}{100}$$

$$= 30 - \frac{200}{100}$$

⑦ SP = 800

discount = 20%

$$SP = \frac{CP\,(100 - \%\ \text{loss})}{100}$$

$$800 = \frac{CP\,(100 - 20\%)}{100}$$

$$80000 = 100CP - 20CP$$

$$80000 = 80CP$$

$$80CP = 80000$$

$$\boxed{CP = 1000}$$

(8) SP = 1800 rs

profit = 25%.

$$SP = \frac{CP(100 + \%.profit)}{100}$$

$$1800 = \frac{CP(100+25)}{100}$$

$$180000 = 100CP + 25CP$$

$$180000 = 125\,CP$$

$$CP = \frac{180000}{125}$$

$$P = 1440$$

(9) CP = 1500 rs

discount = 10%

$$SP = \frac{CP(100 - \%.discount)}{100}$$

$$SP = \frac{1500(100 - 10)}{100}$$

$$SP = \frac{1500 \times 90}{100}$$

$$\boxed{SP = 135}$$

(10) CP = 150 SP = 200

profit = SP - CP

= 200 - 150

= 50

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

$$= \frac{50}{150} \times 100$$

$$= \frac{500}{15}$$

$$= 33.33\%$$

(11) $$\text{markup \%} = \frac{\text{profit \%} + \text{Discount}}{1 - \frac{\text{discount}}{100}}$$

$$= \frac{20\% + 15\%}{1 - \frac{15}{100}}$$

$$= \frac{35}{100 - 15} \over 100$$

$$= 35 / \frac{85}{100}$$

$$= \frac{35}{85} \times 100$$

$$= \frac{3500}{85}$$

$$= 35\%$$

(12) SP = 2250 Rs

profit = 10%

$$SP = \frac{CP(100 + \text{profit \%})}{100}$$

$$2250 = \frac{CP(100+10)}{100}$$

$$225000 = 100CP + 10CP$$

$$225000 = 110CP$$

$$CP = \frac{225000}{110}$$

$$CP = 2045 \text{ approx.}$$

$$CP = 2000$$

(13) profit % = 25%

Cost price = 800 Rs

$$SP = \frac{CP(100 + \text{profit})}{100}$$

$$SP = \frac{800(100+25)}{100}$$

$$SP = \frac{800(125)}{100}$$

$$SP = \frac{800 \times 125}{100}$$

$$SP = 1000 \text{ Rs}$$

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SP = 15000

10% - 10%

$$SP = \frac{CP(100 - 10\%)}{100}$$

$$15000 = \frac{CP(100-10)}{100}$$

$$15000 \times 100 = 90CP$$

$$1500000 = 90\,CP$$

$$CP = 16.666$$

MP = CP + 50% of CP

assump = 100 + 50

= 150

SP = MP - 20% of MP

= 150 - 30

= 120

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

$$= \frac{120 - 100}{100} \times 100$$

= 20%

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(16) $SP = 400x$

$$SP = \frac{CP \times (100 + \text{profit \%})}{100}$$

$$SP = \frac{400 \times (100 + 12)}{100}$$

$$SP = 448$$

$$SP = \frac{MP \times (100 - \%\text{loss})}{100}$$

$$448 = \frac{MP \times (100 - 5)}{100}$$

$$44800 = 95MP$$

$$MP = 471.58$$

$$\boxed{MP = 500}$$

(17) $CP = 400$

$SP = 576$

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

$$= \frac{576 - 400}{400} \times 100$$

$$= 20\%$$

(18) profit % = 50 rs

$CP = 500$ rs.

$$\text{profit \%} = \frac{50}{500} \times 100$$

$$= 10\%$$

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(19) profit % 15 %

SP = 2300 rs

$SP = \frac{CP(100 + \%\ profit)}{100}$

$2300 = \frac{CP(100+15)}{100}$

$230000 = 115\ CP$

$CP = \frac{230000}{115}$

$CP = 2000$

(20) CP = 750 rs

SP = 900 rs

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

$= \frac{900 - 750}{750} \times 100$

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

$= 20\ \%$

(21) SP = 640

$100 - 20\ \% = 20\ \%$

$SP = \frac{CP(100 - \%\ loss)}{100}$

$640 = \frac{CP(100 - 20)}{100}$

$640 = 80\ CP / 100$

$64000 = 80\ CP$

$CP = 800$

(22) SP = 9600 rs

profit = 20%

SP = CP(100 + 120g.)

9600 = CP(100 + 20%.)
——————
100

960000 = 120 CP

CP = 960000
——
120

CP = 8000 Rs

(23) SP = 500

profit = 20%.

SP = CP (100 + % profit)
——————
100

500 = CP (100 + 20%)
——————
100

500 = 120 CP
——
100

50000 = 120 CP

CP = 420

(24) CP = 1500

profit 20% of 1500 = 0.20 × 150 = 300

SP = 1500 + 300 + 1800

CP = 150

loss % = 10% of 1500 = 0.10 × 1500 = 150

SP = 1500 − 15 = 1350 rs

Total CP = 1500 + 1500 = 3000

Total SP = 1800 + 1350 = 3150

Net profit CP − SP = 150 = 5%

(25) $SP = 1250$

$loss = 12\%$

$SP = CP\,\frac{(100 - loss\%)}{100}$

$1250 = CP\,\frac{(100-12)}{100}$

$125000 = 88\,CP$

$CP = \frac{125000}{88}$

$CP = 1420.45$

$\approx$

$CP = 1400$

(26) Assume cost price = 1 rs

total quantity = 2 units

total $= 2 \times 1 = 2$ rs

SP = half for the quantity

$2 \times 1 = 2$

SP for the remaining half (1 unit) = 1 rs.

Total selling price $= 2 + 1 = 3$

profit $= SP - CP = 1$ rs.

profit % $= \frac{1}{2} \times 100$

$= 50\%$

(27) $x \times \frac{20}{100}$

sum of the number and the result

$= x + 0.2x$

$= 1.2x$

(28) cost price $= x$

Selling cost $= 50$

100 % of SP $= \frac{50}{\cancel{50}} \times 100$

$= \frac{5000}{5}$

$= 1000$

cost price $= 80$ %

100 % of the cost price $= \frac{1000 \times 100}{80}$

$= \frac{10000}{80}$

$= 1250$

$=$ cost price $-$ loss

$= 1250 - 1000$

$= 250$

final loss $= 250 + 50 \quad 2300$

(29) ☆ Assume cost price = 100

Cost price of 20% of goods is = 20

SP of 20% goods is 20 ↑

$= 20 \times 150\%$

$= \frac{150 \times 20}{100}$

$= 30$

(2) CP of 20% goods 40

SP of 40% goods is Rs

$40 \times 80\% = 32$

cost price of 20% goods is Rs 20

SP of 20% goods is Rs $20 \times 95\%$

$= \frac{95}{20} \times 100$

$= 19$

$SP = 20$

Total $SP = 30 + 32 + 19 + 20 = 101$

Profit percentage $= \frac{(101 - 100)}{100} \times 100$

$= 1\%$

(30) selling expense = 50 rupees

Selling expense are 10% more than the cost,

$$50 = L + 0.1L$$

$$= 1.1L$$

$$L = \frac{50}{1.1}$$

$$= 45.45$$

$$\text{loss \%} = \frac{L}{\text{cost price}} \times 100$$

$$= \frac{45.45}{8000} \times 100$$

$$= 7.5\ \%$$

(31) profit on 1 article
= cost price of 2 article

profit = 2C

SP = CP + profit

= C + 2C

= 3C

$$\text{profit \%} = \frac{2C}{C} \times 100$$

$$= 200\ \%$$

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(32) CP = 100

profit % = 20%

SP = a

CP = CP + profit

= 100 + 20

= 120

actual CP = x

profit = 500

profit = 20% of CP

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

CP = 2500

SP = 2500 + 500 = 3000

now CP after reduction

= 80% x 2500

= 0.8 x 2500 = 2000rs

new profit = S.P - NOW CP

= 3000 - 2000

= 1000

(33) SP = CP + 25%
= 100 + 25 = 125

New profit = 125 + 95 = 235

New profit % = $\frac{35}{90} \times 100$

profit = 38.8%

(34) CP = 100

profit % 500 %

SP = 100 + 500
= 600

CP is doubled = 2 × 100 = 200

SP is halfed = $\frac{600}{2}$ = 300

New profit = 300 − 200 = 10

New profit % = $\frac{100}{200} \times 100$

profit = 50%

(35) Required decrease = $\frac{\text{increament / price}}{100 + \text{increament}} \times 100$
price

= $\frac{25}{125} \times 100$

= 2500 / 125

required decrease = 20%

(36) CP (I) = 100
CP (II) = 1500

profit on selling is article
= 10% price at 2 article

total SP = CP + profit
= 1500 + 200
SP = 1700.
profit % = $\frac{200}{1500} \times 100$
profit % = 13.33 %

(38) x = 20% of 12% of 120% of 6250

$x = \frac{20}{100}$ of $\frac{12}{100} \times \frac{120}{100} \times 6250$

$= \frac{18000000}{10000}$

$x = 180$

(37) discount = x
marked price = $5x$
SP = Named price - discount
$= 5x - x$
$= 4x$

SP = 4 time the discount.

~~x = 20% of 12% of 120% of 6~~

(39) CP = 500

profit = 100%

SP = CP + profit

= 500 + 500 = 1000

Marked price = x

discount = 35%

SP = MP - 35% of MP

1000 = x - 0.35x

1000 = 0.65x

$x = \frac{1000}{0.65}$

x = 1538.46

x ≈ 1539

(40) A is 25% more than B

B = 100

A is 25% more than B

A = 100 + 25

A = 125

% B by which A is smaller

$\frac{A - B}{A} \times 100$

$= \frac{125 - 100}{125} \times 100$

diff = 20%

(41) $CP = x$

discount $= 2 \times CP = 2x$

$MP = 10.000$

$SP = CP$

$SP = MP -$ discount

$x = 10000 - 2x$

$3x = 10000$

$x = 3333.33$

(42) $CP < 30\%$ SP

discount $= 40\%$ of SP

$MP = 12600$

$CP = ?$

$MP =$ SP + discount

$12600 = x + 0.4x$

$x = 12600 / 1.4$

$x = 9000$

$CP = 30\%$ less than SP

$CP = SP - 30\%$ of SP

$CP = 9000 - 2700$

$CP = 6300$

(43) 33.33 % of a number is 20 more than 16.66 % of the number & 120 % of the number

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

$x = 120 + x$

$2x - x = 120$

$x = 120$

$\frac{120}{100} \times 120 = 144$.

$x = 2144$.

(44) sum of 20 % of a number is 20 more than 20 % of another number 20

$\frac{20}{100}x = \frac{20}{1} + \frac{20}{100} \times 20$

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

$x = 24 \times 5$

$x = 120$

(40) initial = x

first step = 2x

then triple = 6x

second step = 12x

then triple = 36x

3rd step = 72x

then triple = 48x

∴ Change = $\frac{48x - x}{2x} \times 100$

$= \frac{45x}{x} \times 100$

$= 45 \times 100\%$

$= 4500\%$

∴ Change = 9000%

(46) 234 be reduce to make it 65%
of itself

65% of 235

$\frac{65}{100} \times 235 = 152.1$

reduction = 234 - 152.1

reduction = 81.9

(43) 90% of 900 of 1000 % of 9

$$\frac{90}{100} \times \frac{900}{100} \times \frac{9000}{100} \times 9$$

$$= \frac{9}{100} \times \frac{9}{1} \times \frac{90}{1} \times 9$$

$$= 6561$$

(44) initial salaries = 100 units

25 employee each employee earns 4 unit

Total salary before = 100 units

employee remaining = 25 - 13 = 12

Total salary of remaining employee before remaining

$12 \times 4 = 48$ units

Now salary increase by 24 %.

$= 48 \times 1.24$

$= 59.52$ units

% change

$$= \frac{59 - 52 - 100}{100} \times 100$$

$$= -40.48$$

Total expense decreased by 40.48%