# Assignment No.-2

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Q1 → 100% ← article
Sold ← 25% loss
SP ← 450rs

$$CP = \frac{SP * 100}{100 - 25\%} = \frac{450 * 100}{100 - 25}$$

$$= \frac{450 * 100}{75}$$

$$= \frac{45000}{75} = 600$$

Q2 → Profit = SP − CP
= 1440 − 1200
= 240

$$\text{Profit\%} = \left(\frac{240}{1200}\right) * 100$$

$$= 0.2 * 100$$

$$= 20\%$$

Q3 → $\text{Profit\%} = \left(\frac{\text{Profit}}{CP}\right) * 100$

CP = 800 , SP = 960

① Profit = SP − CP
= 960 − 800
= 160

② $\text{Profit\%} = \left(\frac{160}{800}\right) * 100$

$$= 0.2 * 100$$

$$= 20\%$$

Q4 → SP = 1200
Sold = 20%

$$CP = \frac{1200 * 100}{100 - 20} = \frac{1200 * 100}{80}$$

$$= \frac{1200 * 100}{80}$$

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

$$CP = \underline{\underline{1500 \text{ rs}}}$$

Q5 → Profit = SP − CP = 480 − 400 = 80

$$\text{Profit \%} = \left(\frac{80}{400}\right) * 100$$

$$= 0.2 * 100$$

$$= 20\%$$

Q6 → Net % = $A + B - \frac{(A * B)}{100}$

A ← 20%
B ← 10%

$$\text{Net \%} = 20 + 10 - \frac{(20 * 10)}{100}$$

$$= 20 + 10 - \frac{200}{100}$$

$$= 20 + 10 - 2$$

$$\text{Net \%} = \underline{\underline{28\%}}$$

Q7 → SP = 800
Discount = 20%

Marked price = $\frac{SP * 100}{100 - Discount\%}$

$= \frac{800 * 100}{100 - 20}$

$= \frac{80000}{80}$

$= 1000$

Q8 → $CP = \frac{SP * 100}{100 + Profit\%}$

SP = 1800, Profit% = 25%

$CP = \frac{1800 * 100}{100 + 25} = \frac{1800 * 100}{125}$

$= \frac{180000}{125}$

$= 1440$

Q9 → $SP = MP * \left(\frac{100 - Discount\%}{100}\right)$

MP = 1500 Rs
Discount = 10%

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

$= 1500 * \frac{90}{100}$

$= \frac{150 * 90}{10} = \frac{135000}{100} =$

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Q10 → $\text{Profit\%} = \left(\frac{\text{Profit}}{CP}\right) * 100$

$\text{Profit} = SP - CP = 200 - 150 = 50$

$\text{profit\%} = \left(\frac{50}{150}\right) * 100$

$= \frac{50 * 100}{150} = \frac{5000}{150}$

$= 33.33\%$

Q11 → Markup Percentage Calculation

$\text{Markup \%} = \frac{SP - CP}{CP} * 100$

$MP = \frac{SP * 100}{100 - \text{Discount\%}}$

$SP = CP * \frac{100 + \text{Profit\%}}{100}$

$MP = CP * \frac{100 + 20}{100} \quad CP * \frac{120}{100} = 1.2 * CP$

$MP = \frac{1.2 * CP * 100}{100 - 15}$

$MP = \frac{1.2 * 100 * CP}{85}$

$MP = 1.4118 - 1 * CP$

$MP\% = (1.4118 - 1) * 100$

$= 41.18\% \approx 40\%$

Q12 → $CP = \frac{SP * 100}{100 + \text{Profit\%}}$

$SP = 2250, \text{Profit\%} = 10\%$

$CP = \frac{2250 * 100}{100 + 10} = \frac{225000}{110}$

$= 2024.45$

Q13 → SP for 25% Profit

$$SP = CP * \frac{100 + \text{Profit}\%}{100}$$

CP = 800

Profit = 25%

$$SP = 800 * \frac{100+25}{100}$$

$$= 800 * 1.25$$

$$= 1000$$

Q14 → Cost Price for 10% loss

$$CP = \frac{SP * 100}{100 - \text{loss}\%}$$

SP = ₹ 15,000

loss% = 10%

$$CP = \frac{15000 * 100}{100-10} = \frac{1500000}{90} = 16666$$

Q15 → MP ← 50% above CP

Sold at 20% discount.

$$MP = CP * \frac{100+50}{100} = 1.5 * CP$$

$$SP = 1.5 * CP * \frac{100-20}{100}$$

$$= 1.5 * CP * 0.8$$

$$SP = 1.2 * CP$$

$$\text{Profit}\% = (1.2 - 1) * 100$$

$$= 20\%$$

Q6 → Profit ← 12%
giving ← 5% discount

$$SP = CP * \frac{100 + Profit\%}{100}$$

$$= 400 * \frac{112}{100}$$

$$= 400 * 1.12$$

$$= 448$$

Using discount formula -

$$MP = \frac{SP * 100}{100 - Discount\%}$$

$$= \frac{448 * 100}{95}$$

$$= 471.58 \quad ₹\ 520$$

Q7 → Profit = SP − CP = 576 − 480 = 96

$$Profit\ Percentage = \left(\frac{Profit}{CP} * 100\right)$$

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

$$= 20\%$$

Q8 → Profit = 50
Cost Price = 500

$$Profit\ Percentage = \frac{50}{500} * 100$$

$$= 10\%$$

Q19 → Selling Price = Cost Price + 15% CP

$2300 = CP * \left(1 + \frac{15}{100}\right)$

$2300 = CP * 1.15$

$CP = \frac{2300}{1.15} = 2300$

Q20 → Gain Percentage

Profit = 900 - 750 = 150

$\text{Profit\%} = \left(\frac{150}{750} * 100\right)$

$= 20\%$

Q21 → $SP = CP - 20\% \cdot CP$

$640 = CP * \left(1 - \frac{20}{100}\right)$

$640 = CP * 0.8$

$CP = \frac{640}{0.8} = 800$

Q22 → $SP = CP + 20\% \cdot CP$

$9600 = CP * \left(1 + \frac{20}{100}\right)$

$9600 = CP * 1.2$

$= \frac{9600}{1.2} = 8000$

Q23 → SP = 500, Profit = 20%

$CP = \frac{SP}{1 + \frac{\text{Profit\%}}{100}}$

$$CP = \frac{500}{102} = \underline{\underline{476.67}}$$

Q24 → $$\text{Profit\%} = \left(\frac{150}{300} * 100\right) = \underline{\underline{50\%}}$$

Q25 → $$CP = \frac{1250 * 100}{88}$$

$$= \frac{125000}{88} = \underline{\underline{1420.45}}$$

Q26 → $$\text{Profit} = \text{New SP} - CP$$

$$= 2x - x$$

$$\text{profit \%} = \frac{\text{Profit}}{CP} * 100$$

$$\text{Profit} = 2x - x = \underline{\underline{x}}$$

$$\text{Profit \%} = \frac{4x - x}{x} * 100 = \frac{3x}{x} * 100$$

$$= \underline{\underline{300\%}}$$

Q27 → $$\frac{n * n * 20}{100} = 490$$

$$2\left(\frac{n^2 * 20}{100}\right) = 490$$

$$\frac{2}{5} n^2 = 490$$

$$n^2 = 1225$$

$$n = \underline{\underline{35}}$$

Q.28 → Cost Price (CP) = ₹ x.

SP = 80% of CP = 0.8x.

SC = 5% of SP

0.05 * (0.8x) = 0.04x

Sc = ₹ 50

0.04x = 50

$x = \frac{50}{0.04} = 1250$

Total Expense = CP + SP

= 1250 + 50

= 1300

Loss Total Expense = 1300 - (0.8 * 1250)

= 1300 - 1000

= 300 ₹.

Q.29 → Half goods at 20% loss, half at 50% profit.

Total CP = 200 ₹

So, each half is ₹ 100

for first half - SP = 100 - 20%.

= ₹ 150

Profit = ₹ 50

Total CP = ₹ 200, Total SP = ₹ 80 + ₹ 150

= 230 ₹

Total Profit = ₹ 30 half ₹ 15

Q30 → $1.1 * \frac{L}{100} * 600 = 50$

$66L = 5000$

$L = \frac{5000}{66}$

$L = 7.57\%$

Q31 → $\frac{\text{Profit}}{CP} * 100 = \frac{2x}{x} * 100$

$x = 200\%$

Q32 → CP = 100

Profit % = 20 %  SP = ?

SP = CP + Profit

= 100 + 20

= 200

Actual CP = x  Profit = 500  profit = 20%

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

$CP = \frac{20}{100} * 500$  SP = 2500

SP = 2500 + 500 = 3000

now CP after 20% reduction

$= 2500 - \frac{20}{100} * 2500 = 2500$

= 2500 - 500

= 200

SP remains the me, the new Profit

3000 - 2000 = ₹ 1000

Q33 → CP = 100

Profit % = 25%

SP = CP + Profit

= 100 + 25

= 125

now profit, Now profit = 125 - 95

= ₹ 35

new profit % = $\frac{35}{90} * 100 = 38.8\%$

Q34 → CP = 100

profit % = 500%

SP = 100 + 500

= ₹ 600

CP is doubled = 2 * 100 = ₹ 200

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

Now profit = 500 - 200 = ₹ 300

New profit % = $\frac{100}{600} * 100 = 50\%$

Q35 → Required decrease = $\frac{\text{Increase price}}{100 + \text{increase price}} * 100$

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

Required decrease = 20%

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Q39 → CP (I) = 100
CP (II) = 1500

Profit on selling is articles =
best price of 2 articles = 200

Total SP = CP + Profit
= 1500 + 200
SP = 1700

Profit % = $\frac{200}{1500} * 100$ = 13.33 %

Q40 → 40 % of a number A is 50 % of a numbers B find a : b

40 % of a = 50 % of b

$\frac{40}{100} a = \frac{50}{100} b$

$\frac{2}{5} a = \frac{1}{2} b$

40 = 5 b  a : b = 5 : 4

Q41 → discount x

MP = 5x

SP = MP − Discount
= 5x − x = 4x

SP = 4 times the discount

Q42 → x = 20 % of 12 % of 120 % of 6250

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

$= \frac{20 * 12 * 100}{100^3}$  x = 6250

Q43 → $\frac{180000}{1000} = x = 180$

Q44 → CP = ₹500

Profit = 100%

SP = CP + Profit

= 500 + 500

= ₹100

MP = x  discount = 35%

SP = MP = 35% of MP

$1000 = x - 0.35x$

$1000 = 0.65x$

$x = \frac{1000}{0.65} = 1528.46$

Q45 → A is 25% More than B

B = 100

A is 25% More than B

A = 100 + 25

A = 125

% B by antides of a smaller

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

$\frac{125-100}{125} * 100$

$\frac{125}{125} * 100$

diff° = 20%

Q46 → CP = x

discount 2 * CP = 2x

MP = 10,000

SP = CP

SP = MP - discount

x = 10000 - 3x

3x = 10000

x = 3333.03

Q47 → CP < 30% SP

discount = 40% SP

MP = 12,600

CP = ?

MP = SP + Discount

12,600 = x → 0.4x

$x = \frac{12600}{1.40}$ x = 9000

CP = 30% less than SP

CP = SP - 30% of SP

CP = 9000 - 2700

CP = 63000

Q48 → 33.33% of a number is 20 more than 16.66% of the number

120% of the number

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

2x = 120 + x

2x - x = 120

x = 120

$\frac{120}{100} * 20 = 144$

Q49 → num of 20% of a number is 20 more than 30% of another no. 20

$$\frac{20}{100}x = 20 + \frac{20}{100} * 120$$

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

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

$$x = 120$$

Q50 → intial = x

first step = 2x

second step = 6x

second step = 12x

then triple = 36x

3rd step = 72x

then multiple = 216x

% change = $\frac{216x - x}{x} * 100$

$= \frac{215x}{x} * 100$

$= 215 * 100\% = 21500\%$

% change = 3000%

Q51 → 234 be reduced do more if 65% of itself

65% of 235

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

Reduction = 234 − 15.21

Reduction = 31.9

Q52 → 90% of 900 % of 9000% of 9

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

$\frac{9}{10} * \frac{9}{1} * \frac{90}{1} * 9$

$9 * 9 * 9 * 9$

6561

Q53 → Initial Salary = 100 units

25 employee each employee earns 4 units

Total Salary before layoffs = 100 units

Q54 → Employ remaing 25 - 13 = 12

Total Salary of remaining employees before remaining

$12 * 4 = 48$ units

New Salary after 25% increment

$= 48 * 1.25$

$= 59.52$ units

% change $= \frac{59.52 - 100}{100} * 100$

$= \frac{-40.48}{100} * 100$

$= -40.48$

Total expenditure decreased by 40.48%