

Assignment No.-01

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$$Q1 \rightarrow \frac{25}{100} \times 200$$

$$\rightarrow \underline{\underline{50}}$$

Q2 → 70% of a number is 80

$$\frac{70}{100} \times x = 80$$

$$x = \frac{80 \times 100}{70}$$

$$x = \underline{\underline{200}}$$

Q3 → 75% of a number is 150

$$\frac{75}{100} \times x = 150$$

$$x = \frac{150 \times 100}{75}$$

$$x = 2 \times 100$$

$$x = \underline{\underline{200}}$$

Q4 → 15% of 120

$$\frac{15}{100} \times x = 120 \quad \frac{15}{100} \times 120$$

$$x = \frac{120 \times 100}{15} \rightarrow \frac{3}{2} \times 12^6$$

$$\rightarrow 3 \times 6$$

$$\rightarrow \underline{\underline{18}}$$

Q5 → 30% of a number Rs 90

$$\frac{30}{100} \times x = 90$$

$$x = \frac{100 \times 90}{30}$$

$$x = 100 \times 3$$

$$x = 300$$

Q6 → Price product increases from Rs 200 to Rs 250 → % Increase?

$$\frac{\text{New value} - \text{old value}}{\text{old value}} * 100$$

$$\frac{250 - 200}{200} * 100$$

$$\frac{50}{200} * 100$$

$$= 25\%$$

Q7 → 40,000 to 60,000 % Increases?

$$\frac{60,000 - 40,000}{40,000} * 100$$

$$\frac{20,000}{40,000} * 100$$

$$\frac{2}{4} = 25\%$$

Q8 → 10,000 to 8,000 decrease %?

$$\frac{[\text{Old Value} - \text{New Value}] * 100}{\text{Old Value}}$$

$$\frac{[10,000 - 8,000] * 100}{10,000}$$

$$\frac{[2,000] * 100}{10,000}$$

$$\frac{200 * 100}{10,000}$$

$$= 200 = 20\%$$

Q9 → 500 to 400 decrease %?

$$\frac{[500 - 400] * 100}{500}$$

$$\frac{100 * 100}{500}$$

$$= 200 = 20\%$$

Q10 → $\frac{\text{cost price} - \text{selling price}}{\text{cost price}} * 100$

$$600 - 450 * 100$$

$$\frac{150 * 100}{600} = \frac{150}{6} = 25\%$$

Section 2 →

Q11 what is greater - 30% 400 or 40% 300 ?

$$\frac{30}{100} \times 400 = \underline{\underline{120}}$$

$$\frac{40}{100} \times 300 = \underline{\underline{120}}$$

→ Both are equal.

Q12 → Person Spend 60% of his income
So, he have 40% of his income

$$\frac{40}{100} * x = 8000$$

$$x = \frac{8000}{2} * 100$$

$$x = 2000 * 10$$

$$x = \underline{\underline{20000}}$$

Q13 → A is 20% more than B, then B is how much less than A

A → B + 20% of B

$$\begin{aligned} &= \frac{20}{100} * 100 \\ &= 120 \end{aligned}$$

$$\% \text{ decrease} \rightarrow \frac{A - B}{A} * 100$$

$$\rightarrow \frac{120 - 100}{120} * 100$$

$$\rightarrow \frac{20}{120} * 100 = \underline{\underline{16.67\%}}$$

Q14 → Sugar → $100 + 25\%$
 Sugar → 125%
 $125 * x = 10,00$
 $x = \frac{10,00}{125}$
 $x = 80 \text{ kg}$

$$100 - 80 = 20 \text{ kg}$$

$$100 \rightarrow \frac{20}{100} * 100 = 20\%$$

Q15 → A → 140%
 B → 100

A Income → $100 + (40\% \text{ of } 100)$
 $100 + 40$
 $= 140$

$$\% \text{ decrease} = \frac{(A - B)}{A} * 100$$

$$\begin{aligned} &= \frac{140 - 100}{140} * 100 \\ &= \frac{40}{140} * 100 \\ &= \underline{\underline{28.57\%}} \end{aligned}$$

Q16 → Increase by 20%

$$100 + (20\% \text{ of } 100)$$

$$100 + 20$$

$$120$$

→ Decrease by 10%

$$120 - (10\% \text{ of } 120)$$

$$120 - 12$$

$$108$$

$$\% \text{ change} \rightarrow \left(\frac{8}{100} * 100 \right) \rightarrow 8\%$$

→ 8% Increase ↑

Q17 → Increase by 30%

$$100 + (30\% \text{ of } 100)$$

$$100 + 30$$

$$130$$

Decrease by 20%

$$130 - (20\% \text{ of } 130)$$

$$130 - 26$$

$$104$$

$$\frac{4}{100} * 100 = 4\%$$

→ 4% ↑ Increase

Q18 → Increase by 25%

$$100 + (25\% \text{ of } 100)$$

$$\underline{100 + 25}$$

$$\underline{\underline{125}}$$

Decrease by 20%

$$125 - \frac{20 * 100}{100} = 125$$

$$x = 125 - 25$$

$$\underline{x = 100}$$

$$\text{Net} - 100 - 100 = \underline{\underline{0}} \quad \text{No change}$$

Q19 → Increase by 40%

$$100 + \frac{(40 * 100)}{100}$$

$$100 + 40 = \underline{\underline{140}}$$

Decrease by 30%

$$140 - \frac{30 * 140}{100}$$

$$140 - 42 = \underline{\underline{98}}$$

$$\frac{100 - 98}{100} = \underline{\underline{2}}$$

$$\% \text{ change} = \left(\frac{2}{100} \right) \times 100$$

$$= \underline{\underline{2\% \text{ decrease}}}$$

Q20 \rightarrow Increase by 20 %

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

Decrease by 10 %

$$120 - \frac{10 * 120}{100}$$

$$= 120 - 12$$

$$= 108$$

$$108 - 100$$

$$= 8 \% \text{ Decrease}$$

\rightarrow 8 % increase

Q21 \rightarrow Cost price \rightarrow 100 assuming profit 25 %

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

SP \rightarrow

$$SP = CP + Profit$$

$$= 100 + 25$$

$$SP = 125$$

$\Rightarrow 125\%$

$$\frac{SP * 100}{CP} = \frac{125 * 100}{100}$$

$$= 125\%$$

Q22 → Marked price = ₹ 500

Discount = 10% MP

Profit = 8% of CP

Discount → 10% of ₹ 500

$$\frac{10}{100} \times 500 = 50$$

Marked - discount

$$500 - 50$$

$$SP = 450 \leftarrow 8\% \text{ profit}$$

$$450 = CP * \frac{108}{100}$$

$$CP = \frac{450 * 100}{108}$$

$$= \underline{\underline{416.67}}$$

Q23 → ₹ 420

Q23 → Profit → 20% of CP

assume CP → ₹ 100

$$\text{Profit} = 20\% \text{ of CP} = \frac{20}{100} \times CP$$

$$= 0.2 \times CP$$

$$SP = CP + 0.2 \times CP = 1.2 \times CP$$

$$\text{Profit percent SP} = \frac{\text{Profit}}{SP} * 100$$

$$= \frac{(0.2 \times CP)}{1.2 \times CP} * 100$$

$$= \frac{0.2}{1.2} * 100$$

$$= \underline{\underline{16.67\%}}$$

$$\text{Q24} \rightarrow \text{Discount} = \text{Marked price} - \text{SP}$$

$$= 1200 - 960$$

$$= 240$$

$$\text{Discount \%} = \frac{\text{Discount} * 100}{\text{Marked Price}}$$

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

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

$$= \underline{\underline{20\%}}$$

$$\text{Q25} \rightarrow \text{Profit} = \text{Selling Price} - \text{Cost}$$

$$= 650 - 500$$

$$= 150$$

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

$$= \frac{150 * 100}{500}$$

$$= \underline{\underline{30\%}}$$

$$\text{Q26} \rightarrow 100 \text{ of } 20\% = 120$$

$$\% \text{ decrease} = \frac{(A-B)}{A} * 100$$

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

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

$$= \underline{\underline{16.67\%}}$$

Q27 → Total Student = $3x + 2x = 5x$

$$\begin{aligned} \text{% of boys} &= \frac{\text{No. of boys}}{\text{total student}} \times 100 \\ &= \frac{3x}{5x} * 100 \\ &= \frac{3}{5} * 100 \\ &= \underline{60\%} \end{aligned}$$

Q28 → ① Calculate the increase in population.

$$\text{Increase} = \frac{\text{final population} - \text{Initial population}}{\text{Initial population}}$$

$$\begin{aligned} &= 2,50,000 - 200,000 \\ &= 50,000 \end{aligned}$$

$$\begin{aligned} \text{% Increase} &= \frac{\text{Increase}}{\text{Initial Popn}} * 100 \\ &= \frac{50,000}{200,000} * 100 \end{aligned}$$

$$\therefore \text{and its solution} = \underline{25\%}$$

Q29 → 65% of x, 35% x

$$\frac{65}{100} * 100 - \frac{35}{100} * 100 = \frac{30}{100} * 100$$

$$\therefore \text{and solution} = \underline{3000}$$

$$65\% x = \frac{3000 * 100}{30}$$

$$x = \frac{300000}{30} = \underline{10,000}$$

Q30 \rightarrow New price = $100 - \frac{30}{100} * 100$

~~Original price~~ = $100 - 30$

Increase = $100 - 70 = \underline{\underline{30}}$

% Increase = $(\frac{\text{Increase}}{\text{New Price}}) * 100$

= $\frac{30}{70} * 100$

~~Original price~~ = $\frac{3}{7} = \underline{\underline{42.85\%}}$

Q31 \rightarrow No. $\rightarrow 100$ Increase - 125%

Percent = $125\% - 50\% \rightarrow 75\%$

Net change = $100 - 75$

= $\underline{\underline{25\%}}$

Q32 \rightarrow A is 20% taller than B

A $\rightarrow \frac{20}{100} * 100 + 100 = 120$

% decrease = $(\frac{A-B}{A}) * 100$

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

= $\frac{20}{120} * 100 = \underline{\underline{16.67\%}}$

Q33 \rightarrow 30% of x = 90

$$\frac{30}{100} * x = 90$$

$$x = \frac{90 * 100}{30}$$

$$x = 300$$

$$60\% \text{ of } x \rightarrow \frac{60}{100} * 300$$

$$= 0.6 * 300$$

$$= 180$$

Q34 \rightarrow 100 - 75 = 25%

25% of x = 5000

$$x = \frac{25}{100} * 5000$$

$$x = \frac{5000 * 100}{25}$$

$$x = \underline{20,000}$$

Q35 \rightarrow Price is 20% increase

$$\text{Price} \rightarrow 100 + \frac{20}{100} * 100 = 120$$

$$\% \text{ decrease} \therefore 120 - \frac{100}{120} * 100$$

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

$$= \underline{16.67\%}$$

Q36 → Increase the Price by 20%

$$\text{New Price} = 100 + (20\% \text{ of } 100)$$

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

$$= 100 + 20$$

$$= 120$$

Decrease the New price by 10%

$$\text{Final Price} = 120 - (10\% \text{ of } 120)$$

$$= 120 - \frac{10}{100} * 120$$

$$= 120 - 12$$

$$= 108$$

$$\% \text{ change} = \frac{108 - 100}{100} * 100$$

$$= \frac{8}{100} * 100$$

$$= 8 \% \uparrow \text{ increase}$$

Q37 → Cost Price → 100 (assume)

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

$$\text{Discount} = \frac{20 * 125}{100} = \frac{20 * 125}{100} = \underline{\underline{25}}$$

$$SP = 125 - 25 = \underline{\underline{100}}$$

$$\text{Profit/Loss} = SP - CP$$

$$= 100 - 100$$

$$= \underline{\underline{0}} \%$$

Q38

$$\rightarrow CP = 500 \text{ rs.}$$

Loss = 20% .

$$SP = ?$$

$$SP = CP - (20\% \text{ of } CP)$$

$$= 500 - \frac{20}{100} * 500$$

$$= 500 - 100$$

$$SP = 400 \text{ Rs.}$$

Q39

\rightarrow Increase the Salary by 10%

$$\text{New Salary} = 100 + \left(\frac{10}{100} * 100 \right)$$

$$= 100 + 10$$

$$= 110$$

Decrease the ^{New} Salary by 10%

$$\text{Final Salary} = 110 - \left(\frac{10}{100} * 110 \right)$$

$$= 110 - 11$$

$$= 99$$

$$\% \text{ change} = \frac{99 - 100}{100} * 100$$

$$= -\frac{1}{100} * 100$$

$$= -10\%$$

$\rightarrow -10\%$ decrease

Q40 →

$$\frac{40}{100} * 100 + x = 220$$

$$x = \frac{550}{220 * 100}$$

$$x = \underline{\underline{550}}$$

Total Marks = 550.

Q41 →

Total Expenses -

$$20\% + 30\% + 10\% = 60\%$$

Saving = 40% of x

$$= \frac{40}{100} * 100 + x$$

$$x = \underline{\underline{18000}}$$

$$x = \frac{18000 * 100}{40}$$

$$x = 18000 \text{ Rs}$$

$$x = \underline{\underline{45000}}$$

Q42 → Increase the cost by 30 %

$$\text{New cost} = 100 + \frac{30 * 100}{100}$$

$$= 100 + 30$$

$$= 130$$

Decrease the New cost by 30 %

$$\text{Final Cost} = 130 - \left(\frac{30 * 130}{100} \right)$$

$$= 130 - 39$$

$$= 91$$

Net % change = $\frac{91 - 100}{100} * 100$
 $= \frac{-9}{100} * 100$
 $= \underline{\underline{-9\%}}$ decrease

Q43 \rightarrow Population $\rightarrow 10,000$

after 3 years $\rightarrow ?$

Increase by $\rightarrow 10\%$

$$\text{Population} = 10,000 * \left(1 + \frac{10}{100}\right)^3$$

$$= 10,000 * (1.1)^3$$

$$= 10,000 * 1.331$$

$$= \underline{\underline{13,310}}$$

Q44 \rightarrow 15% of A and 20% of B

$\frac{15}{100}$ A and $\frac{20}{100}$ B

$$A = \frac{20}{15} = \frac{4}{3}$$

Answer $\rightarrow \underline{\underline{4:3}}$

$$\text{Q45} \rightarrow \text{CP} = 800 \text{ rs.}$$

$$\text{Profit} = 25\%$$

$$\text{SP} = ?$$

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

Profit Amount \rightarrow

$$25\% \text{ of } 800 = \frac{25}{100} * 800 = 200$$

$$\begin{aligned}\text{SP} &= 800 + 200 \\ &= \underline{\underline{1000 \text{ rs.}}}\end{aligned}$$

$$\text{Q46} \rightarrow \text{CP} = 200$$

$$\text{SP} = 250$$

$$\text{Profit} = \text{SP} - \text{CP}$$

$$= 250 - 200$$

$$= 50$$

$$\% \text{ Profit} = \frac{(50) * 100}{200}$$

$$= \frac{5000}{200}$$

$$= \underline{\underline{25\%}}$$

Q47 → Repeated in Q. Bank

Q48 → Repeated in Q. Bank

$$Q49 \rightarrow SP = 1500 - \frac{10}{100} * 1500$$

$$10\% \text{ of } 1500 = \frac{10}{100} * 1500 \\ = 150$$

$$SP = 1500 - 150 \\ SP = \underline{1350}$$

$$Q50 \rightarrow MP = CP + 30\% \text{ of } CP \\ = CP + \frac{30}{100} * CP$$

$$MP = 1.3 * CP$$

10% MP discount, so the SP -

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

$$= 1.3 * CP - (10\% \text{ of } 1.3 * CP)$$

$$= 1.3 * CP - 0.13 * CP$$

$$= (1.3 - 0.13) * CP$$

$$= 1.17 * CP$$

$$\text{Gain \% / Profit} = \frac{1.17 * CP - CP * 10\%}{CP} \\ = \frac{0.17 * CP * 100}{CP} \\ = \underline{17\%}$$