

23.1; S.P. of 33 m = 3/-
C.P. of 33 m = x

$$\text{C.P. of 11 m} = \frac{x \times 11}{33} = \frac{x}{3} /-$$

$$P = \frac{x}{3} \text{ (as C.P. of 11 m is equal to profit)}$$

$$P\% = \frac{P}{C.P.} \times 100 = \frac{\frac{x}{3}}{x} \times 100$$

$$= \frac{x}{3} \times \frac{1}{x} \times 100 = \frac{100}{3} = 33\frac{1}{3}\%$$

Paramount Concept:-

$$\text{Profit} = \text{S.P.} - \text{C.P.}$$

$$\text{C.P. of 11 m} = \text{S.P. of 33 m} - \text{C.P. of 33 m}$$

$$\text{C.P. of 44 m} = \text{S.P. of 33 m}$$

$$\text{Profit \%} = \frac{44 - 33}{33} \times 100 = 33\frac{1}{3}\%$$

24.1; C.P. of 33 m = x

$$\text{C.P. of 11 m} = \frac{11 \times x}{33} = \frac{x}{3}$$

$$L\% = \frac{\frac{x}{3} - x}{x} \times 100$$

$$\frac{x}{3x} \times 100 = \frac{100}{3} = 33\frac{1}{3}\%$$

Paramount Concept:-

$$\text{Loss} = \text{C.P.} - \text{S.P.}$$

$$\text{C.P. of 11 m} = \text{C.P. of 33 m} - \text{S.P. of 33 m}$$

$$\text{C.P. of 22 m} = \text{S.P. of 33 m}$$

$$\text{Loss \%} = \frac{33 - 22}{33} \times 100 = 33\frac{1}{3}\%$$

25.3; C.P. of 15 = S.P. of 10

$$\text{Let S.P. of 10} = x$$

$$\text{C.P. of 15} = x$$

$$\text{C.P. of 10} = \frac{10x}{15} = \frac{2x}{3}$$

$$P\% = \frac{P}{C.P.} \times 100 = \frac{\frac{x}{3} - \frac{2x}{3}}{\frac{2x}{3}} \times 100$$

$$= \frac{(3x - 2x)}{2x} \times 100 = \frac{x}{2x} \times 100 = 50\%$$

Paramount Concept:-

$$\text{C.P. of 15 articles} = \text{S.P. of 10 articles}$$

$$\text{Profit \%} = \frac{15 - 10}{10} \times 100 = 50\%$$

26.3; Paramount Concept:-

$$\text{C.P. of 10 articles} = \text{S.P. of 9 articles}$$

$$\text{Profit \%} = \frac{10 - 9}{9} \times 100 = 11\frac{1}{9}\%$$

27.1; Let C.P. of 12 articles = x

$$\text{C.P. of 1 article} = \frac{x}{12}$$

$$\text{S.P. of 9 articles} = x$$

$$\text{S.P. of 1 article} = \frac{x}{9}$$

$$P = \text{S.P.} - \text{C.P.}$$

$$= \frac{x}{9} - \frac{x}{12} = \frac{4x - 3x}{36} = \frac{x}{36}$$

$$P\% = \frac{P}{C.P.} \times 100$$

$$= \frac{\frac{x}{36}}{\frac{x}{12}} \times 100 = \frac{x}{36} \times \frac{12}{x} \times 100$$

$$= \frac{100}{3} = 33\frac{1}{3}\%$$

Paramount Concept:-

$$\text{S.P. of 9 objects} = \text{C.P. of 12 objects}$$

$$\text{Profit \%} = \frac{12 - 9}{9} \times 100 = 33\frac{1}{3}\%$$

Important Point for Short Trick:

Note :-

(1) When the loss/profit is calculated on money then it is done of C.P.

(2) When the loss/profit is calculated on articles then it is done on actual sale.

Hence, Profit is of 3 articles, selling is of 9 articles

$$\therefore \text{Profit} = \frac{3}{9} = \frac{1}{3} \text{ i.e. } \frac{1}{3} \times 100\% = 33\frac{1}{3}\%$$

28.2; Paramount Concept:-

S.P. of 12 objects = C.P. of 9 objects
Clearly there is a loss as 12 articles are sold
for what 9 articles are bought.

$$L\% = \frac{L}{C.P.} \times 100 = \frac{3}{12} \times 100 = 25\%$$

$$29.4 \quad 20\% = \frac{1 \rightarrow \text{Loss}}{1 \rightarrow \text{S.P.}}$$

$$C.P. = S.P. + L = 6$$

$$L\% = \frac{1}{6} \times 100$$

$$\frac{100}{6} = \frac{50}{3}\%$$

30.3; Paramount Concept:-

$$20\% = \frac{1 \rightarrow \text{Profit}}{5 \rightarrow \text{S.P.}}$$

$$C.P. = S.P. - P = 4$$

$$P\% = \frac{P}{C.P.} \times 100 = \frac{1}{4} \times 100 = 25\%$$

31. 4; S.P. = 90/- if C.P. = 100/- (as loss=10%)

S.P. = 240/- then C.P. =

$$\frac{240 \times 100}{90}$$

$$C.P. = \frac{800}{3} /-$$

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

$$= \frac{120}{100} \times \frac{800}{3} = 320/-$$

Paramount Concept:-

90% of C.P. = ₹ 240

$$C.P. = ₹ \frac{240 \times 100}{90}$$

New S.P. = 120% of C.P.

$$= ₹ \frac{240 \times 100}{90} \times \frac{120}{100} = ₹ 320$$

32. 4; S.P. = 570

L% = 5%

$$C.P. = \frac{100}{95} \times 570 = 600/-$$

$$P = 5\%$$

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

$$= \frac{105}{100} \times 600 = ₹ 630/-$$

Paramount Concept:-

(100 - 5)% of the C.P. = ₹ 570

$$\therefore (100 + 5)\% \text{ of the C.P.} = \frac{570}{95} \times 105 \\ = ₹ 630/-$$

33.3; Total S.P. = ₹ 2 lakhs

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

$$C.P. \text{ of house} = ₹ \left(\frac{100}{80} \times 1 \right) \text{lakh}$$

$$= ₹ \frac{5}{4} \text{lakh}$$

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

$$C.P. \text{ of shop} = ₹ \left(\frac{100}{120} \times 1 \right) \text{lakh} = ₹ \frac{5}{6}$$

$$\text{Total C.P.} = ₹ \left(\frac{5}{4} + \frac{5}{6} \right) \text{lakhs}$$

$$= ₹ \frac{25}{12} \text{lakhs}$$

$$\therefore \text{Loss} = ₹ \left(\frac{25}{12} - 2 \right) \text{lakh} = ₹ \frac{1}{12} \text{lakh}$$

33.3; Other method:-

Note that in the given case total percent

$$\text{loss is } = \frac{20 \times 20}{100} = 4\%$$

$$\therefore \text{The loss amount} = \frac{2}{(100 - 4)} \times 4$$

$$= ₹ \frac{1}{12} \text{ lakh}$$

$$34.3; \text{C.P.} = \frac{100}{100 - L\%} \times \text{S.P.} = \frac{100}{89} \times 178 \\ = 200$$

$$\text{New, S.P.} = \frac{100 + P\%}{100} \times \text{C.P.}$$

$$= \frac{111}{100} \times 200 = ₹ 222/-$$

34.3; Paramount Concept:-

$$89\% \text{ of C.P.} = 178$$

$$111\% \text{ of C.P.} = \frac{111 \times 178}{89} = ₹ 222/-$$

35.4; Paramount Concept:-

$$\text{Total S.P.} = +10\% - 10\%$$

$$= + (10\%) \text{ of } (-10\%) = -1\% \\ = 1\% \text{ Less}$$

35.4; Other method :-

If two articles are sold at equal prices, first one is sold at $x\%$ profit whereas the second one at a loss of $x\%$, then the entire loss in the

transaction is equal to $\frac{x^2}{100}$

Hence, the required loss in the

$$\text{transaction} = \frac{10 \times 10}{100} = 1\%$$

$$36.4; \text{S.P.}_1 = 350 \quad \text{S.P.}_2 = 400$$

$$L\% = \frac{L}{C.P.} \times 100$$

$$L_1\% = \frac{C.P. - 350}{C.P.} \times 100$$

$$L_2\% = \frac{C.P. - 400}{C.P.} \times 100$$

$$L_1\% - L_2\% = 5$$

$$\left(\frac{C.P. - 350}{C.P.} \times 100 \right) - \left(\frac{C.P. - 400}{C.P.} \times 100 \right) \\ = 5$$

$$\text{or, } \frac{100}{C.P.} (C.P. - 350 - C.P. + 400) = 5$$

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

$$\text{or, } 5 C.P. = 5000 \\ \therefore C.P. = 1000$$

36.4; Other method:-

$$\text{Required cost price} = \frac{(400 - 350)}{5} \times 100 \\ = ₹ 1000$$

$$37.3; \text{C.P.} = \frac{100}{100 - L\%} \times \text{S.P.}$$

$$\frac{100}{90} \times 45000$$

$$100 \times 500 = ₹ 50000/-$$

S.P. When profit is 15%

$$\text{S.P.} = \frac{100 + P\%}{100} \times \text{C.P.}$$

$$\text{or, } = \frac{100 + 15}{100} \times 50000 = \frac{115}{100} \times 50000 \\ = ₹ 57500/-$$

37.3; Paramount Concept:-

Required S.P. =

$$\frac{45000 \times (100 + 15)}{(100 - 10)}$$

$$= \frac{45000 \times 115}{90} = ₹ 57500/-$$

38.2; Let C.P. of 1 litre milk = 10/-
bought milk = x litre
then C.P. = $10x$

Let water mixed in milk = y litre
then quality = $(x + y)$ litre

Mixture is sold on C.P.
then S.P. = $10(x + y)$

$$= 10x + 10y$$

$$\text{profit} = \text{S.P.} - \text{C.P.} = (10x + 10y) - (10x) \\ = 10y$$

$$\text{profit} = \frac{10y}{10x} \times 100 = 16\frac{2}{3}\%$$

$$\text{or}, \frac{y}{x} = \frac{50}{3 \times 100}$$

$$\text{or}, \frac{y}{x} = \frac{50}{300}$$

$$\text{or}, \frac{y}{x} = \frac{1}{6}$$

$$\text{So, mixture} = x + y = 6 + 1 = 7$$

$$\text{then, } \frac{\text{mixture}}{\text{milk}} = \frac{7}{6} = 7 : 6$$

38.2; Paramount Concept:-

$$16\frac{2}{3}\% = \frac{50}{3 \times 100}$$

$\frac{1}{6} \rightarrow \text{Water}$

$= \frac{5}{6} \rightarrow \text{Milk}$

$$\text{Mixture} = 6 + 1 = 7$$

$$\text{Milk} = 6$$

$$\text{Mixture : Milk} = 7 : 6$$

$$39.1; \text{C.P. of } 1 \text{ kg} = x$$

$$\text{S.P. of } 900 \text{ gms} = x$$

$$\text{S.P. of } 1 \text{ kg or } 1000 \text{ gms}$$

$$= \frac{1000 \text{ gm} \times x}{900} = \frac{10}{9}x$$

$$\text{P\%} = \frac{\text{P}}{\text{C.P.}} \times 100 = \frac{\frac{10}{9}x - x}{x} \times 100$$

$$= \frac{x}{9} \times \frac{1}{x} \times 100 = \frac{100}{9} = 11\frac{1}{9}\%$$

39.1; Paramount Concept:-

$$900 \text{ g} \quad 1000 \text{ g}$$

$$\text{Diff} = 100$$

$$\therefore \text{P\%} = \frac{100}{900} \times 100 = 11\frac{1}{9}\%$$

$$40.2; \text{C.P. of } 1 \text{ kg} = 100$$

$$\text{S.P. of } 800 \text{ gms} = 110/- \text{ (as P = 10\%)}$$

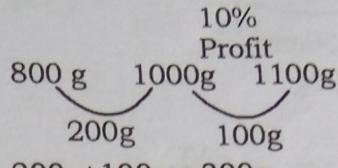
$$\text{S.P. of } 1000 \text{ g i.e. } 1 \text{ kg}$$

$$= \frac{110 \times 1000}{800} = \frac{1100}{8} /-$$

$$\text{P\%} = \frac{\text{P}}{\text{C.P.}} \times 100 = \frac{\frac{1100}{8} - 100}{100} \times 100$$

$$= \frac{300}{8} \times \frac{1}{100} \times 100 = \frac{300}{8} = 37\frac{1}{2}\%$$

40.2; Paramount Concept:-



$$\text{P\%} = \frac{300}{800} \times 100 = 37\frac{1}{2}\%$$

$$41.1; \text{Let C.P. of } 1000 \text{ gms} = 100$$

$$\text{S.P. of } 850 \text{ gms}$$

$$= 100 - L$$

$$= 100 - 5 = 95 \text{ (as } 5\% \text{ on } 100 = 5/-)$$

$$\text{S.P. of } 1000 \text{ gms} = \frac{1000 \times 95}{850}$$

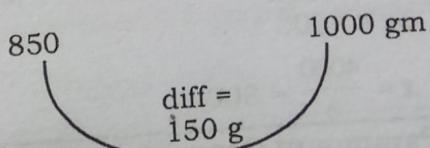
$$= \frac{1900}{17}$$

$$\text{P\%} = \frac{\text{P}}{\text{C.P.}} \times 100$$

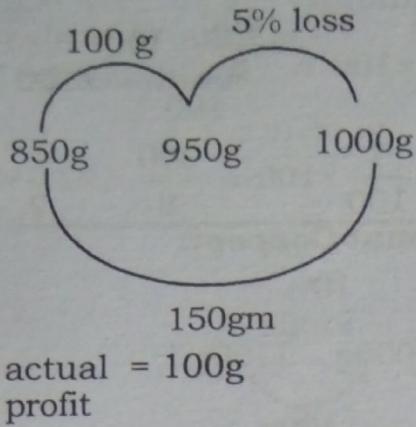
$$= \frac{\frac{1900}{17} - 100}{100} \times 100$$

$$= \frac{1900 - 1700}{17} = \frac{200}{17} = 11\frac{13}{17}\%$$

41.1; Paramount Concept:-



but
L = 5%
hence,



$$\therefore P\% = \frac{100}{850} \times 100 = 11\frac{13}{17}\%$$

42. 1; C.P. of 1000 gms = 1
S.P. of x gms = 1
S.P. of 1000 gms

$$= \frac{1000 \times 1}{x} = \frac{1000}{x}$$

$$P\% = 25\%$$

$$P\% = \frac{P}{C.P.} \times 100$$

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

$$25 = \frac{\frac{1000}{x} - 1}{1} \times 100$$

$$25 = \frac{1000 - x}{x} \times 100$$

$$\frac{25x}{100} = 1000 - x$$

$$\frac{x}{4} = 1000 - x$$

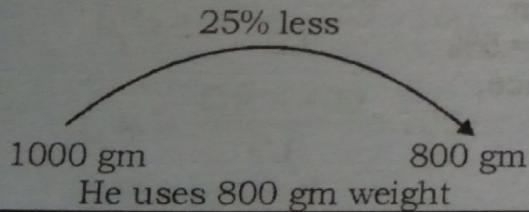
$$x = 4(1000 - x)$$

$$x + 4x = 4000$$

$$5x = 4000$$

$$x = \frac{4000}{5} = 800$$

42.1; Paramount Concept:-



42.1; Other method:-

$$\text{Here, } \frac{x}{(1000 - x)} \times 100 = 25$$

Now, go through the given options
We get $x = 200$

Thus, we can conclude that the shopkeeper uses 800 gm instead of 1000 gm.

43.2; Direct Formula:-

$$\begin{aligned} \% \text{ gain} &= \frac{\text{Error}}{\text{True value} - \text{Error}} \times 100 \\ &= \frac{50}{950} \times 100 = 5\frac{5}{19}\% \end{aligned}$$

44.2; Let the marked price = x

$$\text{S. P.} = x - \frac{25x}{200} \quad (\text{as discount is } 12\frac{1}{2}\%)$$

$$(\text{i.e. } \frac{25}{200} \times x)$$

$$\frac{175x}{200} = \frac{7}{8}x$$

$$P\% = 20\%$$

$$\text{C.P.} = \frac{100}{100 + P\%} \times \text{S.P.}$$

$$\text{C.P.} = \frac{100}{100 + 20} \times \frac{7}{8}x$$

$$\frac{100}{120} \times \frac{7}{8}x = \frac{35}{48}x$$

$$\text{If C.P.} = \frac{35}{48}x \quad \text{then, M.P.} = x$$

$$\text{If C.P.} = 210 \quad \text{then, M.P.} = \frac{210 \times x}{\frac{35}{48}x}$$

$$= \frac{210x}{1} \times \frac{48}{35x} = ₹ 288$$

44.2; Paramount Concept:-

Required marked price

$$\begin{aligned} &= \frac{210 \times (100 + 20)}{(100 - 12.5)} = \frac{210 \times 120}{87.5} \\ &= ₹ 288 \end{aligned}$$

Paramount Concept:-

$$12\frac{1}{2}\% = \frac{25}{200} = \frac{1}{8} \rightarrow \text{discount}$$

$$\therefore S.P. = M.R.P - \text{discount} = 8 - 1 = 7$$

$$20\% = \frac{1}{5} \rightarrow \text{profit}$$

$$S.P. = C.P. + P = 5 + 1 = 6$$

$$\begin{array}{lll} \underline{C.P.} & \underline{S.P.} & \underline{M.R.P.} \\ 5 & 7 \times 6 & 8 \times 6 \\ 7 \times & 7 \times & \\ & 6 & \Rightarrow \text{To make S.P. same} \end{array}$$

$$35 \quad 42 \quad 48$$

$$6 \times \left(\begin{array}{c} \downarrow \\ \text{₹}210 \text{ (given)} \end{array} \right) \quad \left(\begin{array}{c} \downarrow \\ \text{₹}288 \end{array} \right) \times 6$$

(35 when multiplied by 6 gives 210 hence 48 when multiplied by 6 gives 288)

$$45.4; \text{ Let } S.P. = ₹ 100/-$$

20% decrease in price means S.P.

$$= ₹ 80/-$$

If for 20/- 5 kgs more are bought then price of 1 kg = ₹ 4/-

the decreased C.P. = ₹ 4/- per kg
 \therefore the original C.P. = ?

$$\text{If quantity bought} = \frac{100}{4} = 25 \text{ kgs.}$$

\therefore Original quantity was 20 kg

$$\therefore \text{Original price was} = \frac{100}{20}$$

$$= ₹ 5/- \text{ per kg.}$$

Paramount Concept:-

Note:- Quantity and Cost have inverse relation

$$\begin{array}{lll} 20\% = \frac{1}{5} & & \text{New} \\ \text{Original} & : & \\ \text{Price} \quad 5 & : & 4 \\ \text{quantity} \quad 4 & : & 5 \end{array}$$

1 unit decreased

$$\times 5 \left(\begin{array}{c} \text{(as it is given 5 kg more is bought)} \\ 5 \text{ (given)} \end{array} \right)$$

\Rightarrow Original quantity = 4^{*5}
 $= 20 \text{ kg. (4 is also multiplied by 5)}$

$$\text{Original Cost} = \frac{₹100}{20 \text{ kg}} = ₹ 5/\text{kg.}$$

$$46.1; \text{ Price} = \frac{\text{old}}{100} : \frac{\text{new}}{132} \text{ (as cons}$$

$$\propto \frac{1}{\text{price}})$$

$$\frac{\text{Cons.}}{\text{Exp.}} = \frac{132}{13200} : \frac{100}{13200} \text{ (exp. remains same)}$$

but exp. is 10% more

$$\text{New exp.} = 13200 + 1320 = 14520$$

$$P \times \text{cons} = \text{exp.} \quad \therefore 132 \times x = 14520$$

$$\text{new consumption} = x = \frac{14520}{132} = 110$$

In her previous consumption was 132 kg then now it is 110 kg.

Paramount Concept:-

$$32\% = \frac{32}{100} = \frac{8 \rightarrow \text{increase}}{25 \rightarrow \text{original}}$$

$$\begin{array}{lll} \text{Price} & 25 & 33 \\ \text{Cons} & 33 & 25 \\ \text{Exp.} & 825 & 825 \end{array}$$

But new exp. = 907.50 (as 10% increase is there i.e. 110% of 825)

$$x \times 33 = 907.50$$

$$x = \frac{907.50}{33} = 27.5 \text{ kg}$$

if consumption was 33 then new consumption = 27.5
 consumption 10 then new consumption

$$= \frac{27.5 \times 10}{33} = 8\frac{1}{3} \text{ kgs.}$$

46.1; Other method:-

We know

Rate \times consumption = Expenditure

$$\begin{array}{ll} \text{Old} \quad ₹ 10/\text{kg} & \times 10 \text{ kg} = ₹ 100 \\ (\text{supposed}) & \\ & + 32\% \\ & + 10\% \end{array}$$

$$\text{New, } ₹ 13.20/\text{kg.} \times x = ₹ 110$$

$$\therefore x = \frac{110}{13.2} = \frac{110 \times 10}{132} = \frac{100}{12}$$

$$= 8\frac{1}{3} \text{ kg.}$$

47.1; C.P.₁ = 100
S.P.₁ = 110
C.P.₂ = 96

$$\text{S.P.}_2 = \frac{100 + P\%}{100} \times$$

$$\text{C.P.} = \frac{100 + 18\frac{3}{4}}{100} \times 96$$

$$= \frac{100 + 75}{100} \times 96$$

$$= \frac{475}{400} \times 96 = ₹ 114/-$$

If difference = 4/- then, C.P. = ₹ 100/-

$$\text{If difference} = 10/- \text{ then, C.P.} = \frac{100 \times 10}{4}$$

$$= ₹ 250/-$$

Note:- For short trick of 47, 48, 49, 50, and 51. Remember to proceed from left hand side arrow. Then see the diff. of new S.P. and old S.P. After that calculate it on the diff. given in the question.

47.1; Paramount Concept:-

$$\text{if C.P.} = 4\% \text{ less}$$

$$\text{new C.P.} = \frac{100}{100 - 4} = \frac{100}{96} = 100 \times \frac{100}{96} = 100 \times 1.0417 = 104.17$$

$$P\% = 18\frac{3}{4}\% = 18.75\%$$

$$\text{i.e. } 18/-$$

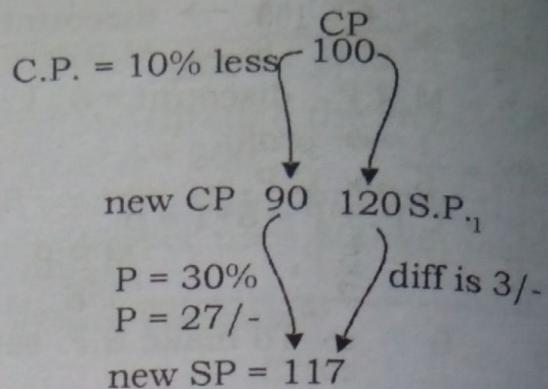
$$\text{SP}_2 = 104.17 \times 1.0417 = 114/-$$

When diff. = 4 then C.P. = 100

$$\text{When diff. is } 10/- \text{ then C.P.} = \frac{100 \times 10}{4}$$

$$= ₹ 250/-$$

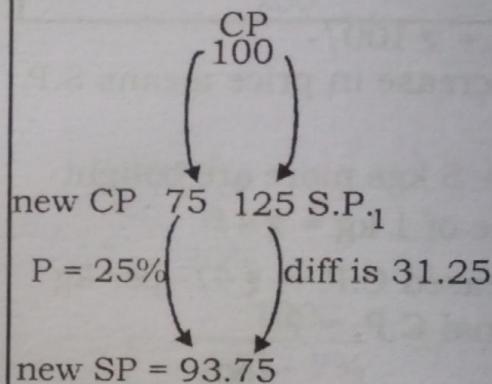
48.1; Paramount Concept:-



New
When diff = 3 then C.P. = 100
When diff = 12 then C.P.

$$= \frac{12 \times 100}{3} = ₹ 400/-$$

49.1; Paramount Concept:-



If diff = 31.25, C.P. = 100

$$\text{If diff} = 25, \text{C.P.} = \frac{100 \times 25}{31.25} = ₹ 80/-$$

50.1; Let the actual cost price = ₹ 100

Actual selling price at 10% profit
= ₹ 110

new cost price at 10% less = ₹ 90
selling price at 25% gain

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

$$\frac{100 + 25}{100} \times 90 = \frac{125}{100} \times 90 = ₹ 112.5/-$$

∴ the difference in the selling prices
= ₹ 112.5 - ₹ 110 = ₹ 2.5

If the difference is ₹ 2.5, the C.P. = ₹ 100

If the difference is ₹ 3, the C.P.

$$= \frac{100}{2.5} \times 3 = ₹ 120$$

54.4; Paramount Concept:-

Let the investment be ₹ 300 & ₹ 500

A.T.Q.

(i)	(ii)	Total
C.P. = ₹ 300	+ ₹ 500	= ₹ 800
+ 15% ↓	- 10% ↓	₹ 5 ↓
S.P. = ₹ 345	+ ₹ 450	= ₹ 795
⇒ Loss % = $\frac{₹ 5}{₹ 800} \times 100 = \frac{5}{8}\%$		

$$55.1; C.P_1 = x$$

$$C.P_2 = 840 - x$$

$$P\% = 16\%$$

$$S.P_1 = \frac{116}{100} \times x$$

$$S.P_2 = \frac{88}{100} \times (840 - x)$$

$$S.P_1 + S.P_2 = 840 \text{ (as there is no profit or loss)}$$

$$\frac{116x}{100} + \frac{73920 - 88x}{100} = 840$$

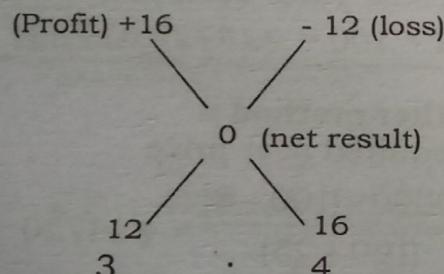
$$73920 + 28x = 84000$$

$$28x = 84000 - 73920$$

$$28x = 10080$$

$$x = \frac{10080}{28} = 360$$

Paramount Concept:-



(Ratio of the price of two articles)

∴ price of the watch sold at profit

$$= \frac{3}{7} \times ₹ 840 = ₹ 360$$

price of the watch sold at loss

$$= \frac{4}{7} \times 840 = ₹ 480$$

$$56.3; A \xrightarrow{P=20\%} B \xrightarrow{P=25\%} C = 225$$

Let $A = x$

$$C = \frac{100+25}{100} \times B = \frac{125}{100} \times B$$

$$B = \frac{100+20}{100} \times A = \frac{120}{100} \times A$$

$$C = \frac{125}{100} \times \frac{120}{100} \times A$$

$$C = \frac{120}{100} \times \frac{125}{100} \times A$$

$$i.e. \frac{120}{100} \times \frac{125}{100} \times x = 225$$

$$x = \frac{225 \times 100 \times 100}{120 \times 125} = ₹ 150/-$$

56.3; Paramount Concept:-

$$\text{Cost price for A} = \frac{225 \times 100 \times 100}{120 \times 125}$$

$$= ₹ 150/-$$

57.1; Without going into detail we can deduce from question part that 120% of 90% of 125% of $x = 27\%$

$$\frac{120}{100} \times \frac{90}{100} \times \frac{125}{100} \times x = 27$$

$$x = \frac{27 \times 100 \times 100 \times 100}{120 \times 90 \times 125} = ₹ 20/-$$

$$58.3; \frac{120}{100} \times \frac{110}{100} \times \frac{112.5}{100} \times x = 14.85$$

$$x = \frac{14.85 \times 100 \times 100 \times 100}{120 \times 110 \times 112.5} = ₹ 10/-$$

$$59.1; S.P_1 = S.P_2$$

$$\frac{85}{100} \times x = \frac{119}{100} \times (480 - x)$$

$$\text{or, } 85x = 119(480 - x)$$

$$\text{or, } 85x = 119 \times 480 - 119x$$

$$\text{or, } 204x = 119 \times 480$$

$$x = \frac{119 \times 480}{204} = 280$$

1st watch = 280/-

2nd watch = 480 - 280 = ₹ 200/-

Direct Formula:

C.P. of watch sold at loss

$$\frac{480 \times (100 + \% \text{ profit})}{(100 - 15) + (100 + 19)}$$

$$= \frac{480 \times 119}{204} = ₹ 280$$

∴ C.P. of watch sold at gain

$$= 480 - 280 = ₹ 200/-$$

60.3; M.P. = ₹ 480/-

Discount = 10%

$$\text{S.P.} = \frac{90}{100} \times 480 = ₹ 432/-$$

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

$$\text{C.P.} = \frac{100}{108} \times 432 = 400$$

If no discount is given then

$$\text{S.P.} = \text{M.P.}$$

i.e. S.P. = 480

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

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

$$\frac{80}{400} \times 100 = 20\%$$

60.3; Paramount Concept:-

If no discount is allowed then S.P.

$$= \text{M.P.}$$

$$= 480$$

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

$$\frac{480 - 400}{400} \times 100 = \frac{80}{400} \times 100 = 20\%$$

$$61.1; \quad \text{P}_2\% - \text{P}_1\% = 5\%$$

$$\frac{1010 - x}{x} \times 100 - \frac{1000 - x}{x} \times 100 = 5$$

$$\text{or } \frac{100}{x} (1010 - x) - (1000 - x) = 5$$

$$\text{or } \frac{100}{x} (1010 - x - 1000 + x) = 5$$

$$\text{or } \frac{100}{x} \times 10 = 5 \quad \therefore x = ₹ 200$$

Direct Formula:

$$\text{Cost Price} = \frac{100 \times \text{Diff in SP}}{\% \text{ Diff. in Profit}}$$

$$= \frac{100 \times 10}{5} = ₹ 200$$

62.2; M.R.P. of 27 pens = x

S.P. of 27 pens = x

$$\text{S.P.} = \frac{30x}{27} = \frac{10x}{9}$$

$$\text{P} = \frac{10x}{9} - x = \frac{x}{9}$$

$$\text{P\%} = \frac{x/9}{x} \times 100 = \frac{x}{9} \times \frac{1}{x} \times 100 = 11\frac{1}{9}\%$$

62.2; Paramount Concept:-

$$\text{P\%} = \frac{\text{P}}{\text{C.P.}} \times 100$$

3 P is gained on buying 27 p.

$$\text{P\%} = \frac{3}{27} \times 100 = \frac{100}{9} = 11\frac{1}{9}\%$$

63.4; Paramount Concept:-

Discount is calculated on selling price

hence,

$$1\% \text{ of } 40 = 40$$

$$\text{i.e. S.P.} = 40 - 0.4 = 39.60$$

$$= \text{P} = \text{S.P.} - \text{C.P.}$$

$$= 39.60 - 36 = 3.60$$

$$\text{P\%} = \frac{\text{P}}{\text{C.P.}} \times 100 = \frac{3.60}{36} \times 100 = 10\%$$

64.4; Follow Question 59.

$$\frac{120}{100} \times \frac{120}{100} \times \frac{120}{100} x = 345600$$

$$x = \frac{345600 \times 100 \times 100 \times 100}{120 \times 120 \times 120}$$

$$= ₹ 2,00,000$$

64.4; Paramount Concept:-

$$r = 20\% = \frac{1}{5} \rightarrow \text{profit}$$

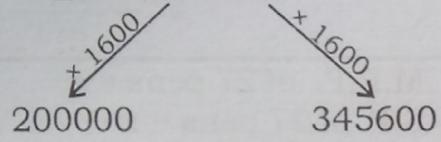
$$= \frac{1}{5} \rightarrow \text{C.P.}$$

Each middeman gained 20%. This means every time C.P. = 5 then S.P. = 6. This process is repeated thrice.

Thus, I. 5 - 6

II. 25 - 36

III. 125 - 216



$$216 \times 1600 = 345600 \text{ (given)}$$

Hence 125 is also multiplied by 1600

$$65.2; \text{ Total C.P.} = 30 \times 9.50 + 40 \times 8.50 \\ = 625$$

$$\text{Total S.P.} = 8.90 (30 + 40) \\ = 8.90 \times 70 = 623$$

$$L = 625 - 623 = 2/-$$

$$66.2; \text{ 2.5 kg of rice cost } ₹ 12.50$$

$$\therefore 9 \text{ kg of rice of } ₹ \frac{12.50}{2.5} \times 9 = ₹ 45$$

$$\text{Cost of 9 kg of rice} = \text{Cost of 4 kg of sugar} \\ = ₹ 45$$

$$\text{Cost of 4 kg of sugar} = ₹ 45$$

$$\therefore \text{Cost of 14 kg of sugar} = ₹ \frac{45}{4} \times 14 \text{ (Which is the cost of 1.5 kg tea)}$$

$$\text{Cost of 1.5kg. tea} = \frac{45 \times 14}{4}$$

$$\therefore \text{Cost of 2 kg of tea} = \frac{45 \times 14 \times 2}{4 \times 1.5} \\ = ₹ 210$$

$$(\text{When is the cost of 5 kg of coffee})$$

$$\text{Cost of 5 kg. of coffee} = 210/-$$

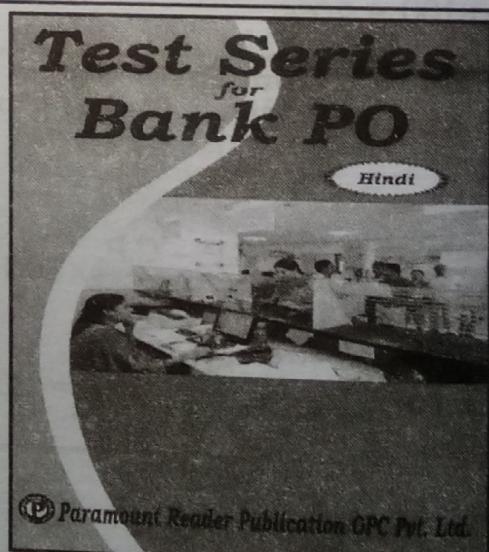
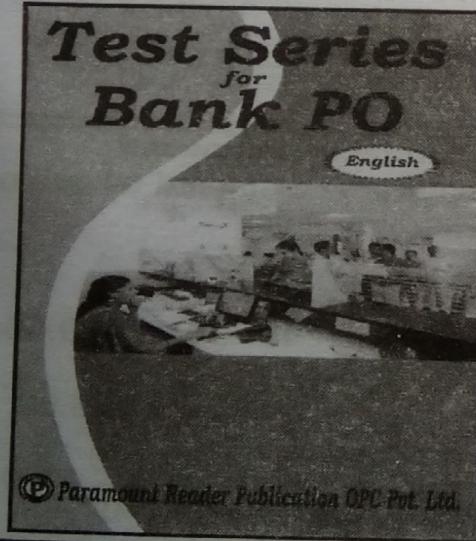
$$\therefore \text{Cost of 11 kg of coffee} = \frac{210}{5} \times 11 \\ = ₹ 462$$

66.2; Other method:-

write down the given information in the question part in following way :

₹ 12.50	= 2.5 kg. rice
9kg. rice	= 4 kg. sugar
14 kg. sugar	= 1.5kg. tea
2 kg. tea	= 5 kg. coffee
11 kg coffee	= ₹ x

$$\therefore x = \frac{12.5 \times 9 \times 14 \times 2 \times 11}{2.5 \times 4 \times 1.5 \times 5} = ₹ 462$$



Exercise