Chapter - 7

Profit and Loss

Foundation

Solutions

1. (a); CP = Rs. 27.50, SP = Rs. 28.60
Then Gain = SP – CP = 28.60 – 27.50 = Rs. 1.10

Since, $\text{Gain\%} = \frac{\text{gain} \times 100}{\text{CP}}\%$

$\Rightarrow \quad \text{Gain\%} = \frac{1.10 \times 100}{27.50} = 4\%$

2. (b); CP = Rs. 490, SP = Rs. 465.50
Loss = CP – SP = 490 – 465.50 = Rs. 24.50

$\text{Loss\%} = \frac{\text{loss} \times 100}{\text{CP}}\% = \frac{24.50 \times 100}{490} = 5\%$

3. (b); $\text{SP} = \left[\frac{100 + \text{gain\%}}{100}\right] \times \text{CP}$

$\Rightarrow \text{SP} = \left[\frac{100 + 20}{100}\right] 56.25 = \text{Rs. } 67.50$

4. (c); $\text{SP} = \left[\frac{100 - \text{loss\%}}{100}\right] \times \text{CP}$

$\Rightarrow \text{SP} = \left[\frac{100 - 5}{100}\right] \times 80.40 = \text{Rs. } 76.38$

5. (a); $\text{CP} = \frac{100 \times \text{SP}}{100 + \text{gain\%}}$

$\Rightarrow \text{CP} = \frac{100 \times 40.60}{100 + 16} = \text{Rs. } 35$

6. (a); $\text{CP} = \frac{100 \times \text{SP}}{100 - \text{loss\%}}$

$\Rightarrow \text{CP} = \frac{100 \times 51.70}{100 - 12} = \text{Rs. } 58.75$

7. (c); Let the new SP be Rs. x then

$\frac{100 - \text{loss\%}}{\text{1st SP}} = \frac{100 + \text{gain\%}}{\text{2nd SP}}$

(CP is same in both case)

$\frac{100 - 5}{1140} = \frac{100 + 5}{x}, \quad x = \frac{105 \times 1140}{95} = \text{Rs. } 1260$

8. (d); Let SP = Rs. 100 then CP = Rs. 96
Profit = SP – CP = 100 – 96 = Rs. 4

$\text{Profit\%} = \frac{\text{profit}}{\text{CP}} \times 100\% = \frac{4}{96} \times 100 = 4.17\%$

9. (c); Here, True weight = 1000g.
False weight = 960g.
Error change = (1000 – 960)g. = 40g.

$\Rightarrow \text{Gain\%} = \frac{\text{Error change}}{\text{True weight} - \text{Error}} \times 100\%$

$= \frac{40}{1000 - 40} \times 100\% = \frac{25}{6}\%$

10. (d); Here, since both gain and loss percent is same, hence the resultant value would be loss percent only.

$\Rightarrow \quad \text{Loss\%} = \frac{a^2}{100} \quad [\text{where } a = 10\%]$

$= 1\%$

11. (c); Using net discount formula

$\Rightarrow \quad \left[a + b - \frac{ab}{100}\right]\%$

Here, a = 40%, b = 20%
Applying both values in above formula:

$\Rightarrow \quad \left[40 + 20 - \frac{40 \times 20}{100}\right]\% = 52\%$

12. (d); Using simple formula of
Profit = SP – CP = 9700 – 9450 = Rs. 250
[Total 5 watches]

$$\text{Profit on 1 watch} = \frac{\text{Rs. } 250}{5} = \text{Rs. } 50$$

13. (a); Here, cost of 12 chairs and 8 tables = Rs. 676
On dividing above equation by 4

$$\Rightarrow \text{Cost of 3 chairs and 2 tables} = \text{Rs. } 676 \times \frac{1}{4}$$

Now multiply it by 7

$$\Rightarrow \quad \text{Cost of 21 chairs and 14 tables}$$

$$= \text{Rs. } 676 \times \frac{7}{4} = \text{Rs. } 1183$$

14. (d); Let CP be Rs. 100
Then SP = Rs. 112. (12% more than CP)
$\Rightarrow$ Now if SP = Rs. 17696
Then by unitary method:

$$\Rightarrow \text{CP} = \frac{100}{112} \times 17696 = \text{Rs. } 15800$$

15. (b); Total SP given = Rs. 1220
Total CP of 13 chairs = Rs. 13 × 115 = Rs. 1495
$\Rightarrow$ Hence, CP > SP
$\Rightarrow$ Loss = CP – SP = Rs. 1495 – 1220 = Rs. 275

16. (a); Here, MP = Rs. 500
Now since we need discount of 20%

$$\Rightarrow \text{Amount paid} = \text{Rs.}\left[500 - 500 \times \frac{20}{100}\right] = \text{Rs. } 400$$

17. (a); Here, profit% = 20%

$$\Rightarrow \text{P\%} = \left[\frac{\text{SP} - \text{CP}}{\text{CP}}\right] \times 100\% \Rightarrow \frac{20}{100} = \frac{360 - \text{CP}}{\text{CP}}$$

$\Rightarrow$ CP = Rs. 300

18. (a); Here, profit = loss ...(i)
$\Rightarrow$ Here, profit = $(SP)_1 - (CP)$
and, Loss = $(CP) - (SP)_2$
Now putting these values in (i)
$(SP)_1 - (CP) = (CP) - (SP)_2$

$$\text{CP} = \frac{(\text{SP})_1 + (\text{SP})_2}{2} = \text{Rs.}\frac{1630 + 1320}{2} = \text{Rs. } 1475$$

19. (c); As, CP of 50 items = SP of 40 items
$\Rightarrow$ 50 × (CP of 1 item) = 40 × (SP of 1 item)

$$\Rightarrow \quad \frac{\text{CP of 1 item}}{\text{SP of 1 item}} = \frac{40}{50} = \frac{4}{5}$$

$$\text{Profit\%} = \frac{\text{SP} - \text{CP}}{\text{CP}} = \frac{5-4}{4} \times 100 = 25\%$$

20. (a); Cost of 1 banana = Rs. 1.25
Cos of 1 apple = Rs. 1.75
Cost of 2 dozen banana = Rs. 24 × 1.25 = Rs. 30
Cost of 3 dozen apple = Rs. 36 × 1.75 = Rs. 63
Total cost = Rs. (30 + 63) = Rs. 93

21. (d); The formula to determine MP of watch if we are given SP and discount% is:

$$\Rightarrow \quad \left[\frac{\text{SP}}{100 - \text{D\%}} \times 100 = \text{MP}\right]$$

$$\text{MP} = \frac{779}{76} \times 100 = \text{Rs. } 1025$$

22. (b); Let cost of 1 calculator be Rs. 'C'
and cost of 1 pen be Rs. 'P'
According to question:
3C + 4P = 2140 ...(i)
1C + 5P = 1355 ...(ii)
Solving (i) and (ii)
We get C = Rs. 480 [cost of 1 calculator]

23. (c); CP of 6 toffees = Rs. 1, CP of 1 toffee = Rs. $\frac{1}{6}$
SP of x toffees = Rs. 1
(where x is no. of toffees to sell)
SP of 1 toffee = Rs. $\frac{1}{x}$

$$\text{Gain\%} = \frac{20}{100} = \frac{\frac{1}{x} - \frac{1}{6}}{\frac{1}{6}} \Rightarrow \frac{1}{5} \times \frac{1}{6} = \frac{1}{x} - \frac{1}{6} \Rightarrow x = 5$$

24. (d); Using Net Loss formula $= \frac{a^2}{100}\%$ [when P% = L%]

$$= \frac{(10)^2}{100}\% = 1\% \text{ Loss}$$

25. (d); Let CP = Rs. 1

$$\text{SP} = \text{Rs.}\frac{4}{3}\text{(Given)}, \quad \text{Profit} = \frac{4}{3} - 1 = \frac{1}{3}$$

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

26. (b); Here, Net Loss% $= \left(\frac{a}{10}\right)^2\% = 1\%$ Loss
$\Rightarrow$ So, Loss of 1% on Rs. 10 lakh = Rs. 10,000

27. (d); Using net effective formula,

$$\Rightarrow \quad 10 - 20 - \frac{10 \times 20}{100} = 12\% \text{ Loss}$$

Hence, 12% Loss

28. (c); Total CP = 200 × 10 + 500 = Rs. 2500
Total SP = 1 × 200 × 12 = Rs. 2400

$$\%\text{loss} = \frac{100}{2500} \times 100 = 4\%$$

29. (b); CP of 11 Mangoes = Rs. 10

$$\Rightarrow \text{CP of 10 Mangoes} = \text{Rs.}\left[10 \times \frac{10}{11}\right] = \text{Rs.}\ \frac{100}{11}$$

SP of 10 Mangoes = Rs. 11

$$\%\text{profit} = \frac{11 - \frac{100}{11}}{\frac{100}{11}} \times 100\% = 21\%$$

30. (b); CP of 20 articles = SP of x articles
20 × CP of 1 article = x × SP of 1 article

$$\Rightarrow \quad \frac{\text{CP of 1 article}}{\text{SP of 1 article}} = \frac{x}{20}$$

$$\text{Profit}\% = \frac{25}{100} = \frac{SP - CP}{CP} \Rightarrow \frac{1}{4} = \frac{20 - x}{x}$$

x = Rs. 16

31. (b); Let profit be P
Now, SP – CP = P ...(i)
In given question, when SP is doubled, P get tripled

2SP – CP = 3P ...(ii)

On solving (i) and (ii)
We get CP = P and SP = 2P

$$\text{Profit}\% = \frac{2P - P}{P} \times 100 = 100\%$$

32. (d); CP of 6 articles = Rs. 5, CP of 5 articles = Rs. $\frac{25}{6}$

SP of 5 articles = Rs. 6

$$\%\text{gain} = \frac{6 - \frac{25}{6}}{\frac{25}{6}} \times 100 = \frac{11}{25} \times 100 = 44\%$$

33. (c); CP of 12 tables = SP of 16 tables

$$\frac{\text{CP of 1 table}}{\text{SP of 1 table}} = \frac{16}{12} = \frac{4}{3}$$

$$\%\text{Loss} = \frac{4 - 3}{4} \times 100 = 25\%$$

34. (c); Using net discount formula $= \left[a + b - \frac{ab}{100}\right]\%$

where a = b = 4%

$$\Rightarrow \quad \left[4 + 4 - \frac{4 \times 4}{100}\right]\% = 7.84\%$$

35. (b); Let CP for A be Rs. 100
A sells it to B at 20% profit
Rs. [100 + 20% of 100] = Rs. 120
Now B sells it to C at 25% profit
Rs. [120 + 25% of 120] = Rs. 150
If C buys at Rs. 150, A bought at Rs. 100
Hence, by unitary method,

$$\text{If C bought at Rs. 1500, A paid} = \text{Rs.}\left[\frac{100}{150} \times 1500\right]$$

= Rs. 1000

36. (d); Total CP = Rs. [70 + 17 + 0.5] = Rs. 87.50
SP = Rs. 100

$$\text{Profit}\% = \frac{12.50}{87.50} \times 100 = 14.3\%$$

37. (d); Let CP = Rs. 100, MP = Rs. 120

$$\text{The SP after discount} = 120 \times \frac{70}{100} = 84 \text{ Rs.}$$

[30% discount]

So loss = 16% [CP – SP]

38. (d); Using net discount formula

$$\left[40 + 30 - \frac{40 \times 30}{100}\right] = 58\%$$

39. (d); Given Loss% = 10%

$$\Rightarrow 10\% = \left(\frac{CP - SP}{CP}\right) \times 100$$

$$\frac{10}{100} = \frac{390 - SP}{390}, \text{ SP = Rs. 351}$$

40. (a); Here, Profit% = 10%

$$\Rightarrow \frac{10}{100} = \frac{SP - CP}{CP} \Rightarrow \frac{1}{10} = \frac{924 - CP}{CP}$$

11CP = 9240 $\Rightarrow$ CP = Rs. 840

Moderate

1. (b); 110% of SP = 616 (Rate of sales tax = 10%)

$$SP = \frac{616 \times 100}{110} = \text{Rs. } 560\ ,\ CP = \frac{100 \times SP}{100 + \text{gain\%}}$$

$$CP = \frac{100 \times 560}{100 + 12} = \text{Rs. } 500$$

2. (c); Let the total value be Rs x

then value of $\frac{2}{3}$rd $= \text{Rs. } \frac{2x}{3}$,

value of $\frac{1}{3}$rd $= \text{Rs. } \frac{x}{3}$

According to question

$$\frac{2}{3}x\left(\frac{5}{100}\right) - \frac{1}{3}x\left(\frac{2}{100}\right) = 400$$

$$\frac{x}{30} - \frac{x}{150} = 400$$

$$\frac{5x - x}{150} = 400 \Rightarrow x = \text{Rs. } 15000$$

3. (d); Let the CP of each article be Rs. 100

Then CP of 16 articles = Rs. (100 × 16) = 1600

$$\text{SP of 16 articles} = 1600 \times \frac{135}{100} = \text{Rs. } 2160$$

(1 article free)

$$\text{SP of each article} = \frac{2160}{15} = \text{Rs. } 144$$

If SP is Rs. 96, marked price = Rs. 100

If SP is Rs. 144, marked price

$$= \frac{100}{96} \times 144 = \text{Rs. } 150$$

Therefore marked price ≈ 50% above CP

4. (c); Let retail price = Rs. 100

then, Commission = Rs. 36

SP = retail price – concession = 100 – 36 = Rs. 64

But profit = 8.8%

$$CP = \frac{100 \times SP}{100 + \text{gain\%}} = \frac{100 \times 64}{100 + 8.8} = \text{Rs. } \frac{1000}{17}$$

New commission = Rs. 12 then

New SP = 100 – 12 = Rs. 88

$$\text{Gain} = 88 - \frac{1000}{17} = \text{Rs. } \frac{496}{17}$$

$$\text{Gain\%} = \text{gain} \times \frac{100}{CP} = \frac{\frac{496}{17}}{\frac{1000}{17}} \times 100 = 49.6\%$$

5. (a); Let the investments be Rs. 3x and Rs. 5x

Then total investment = 8x

Total receipt = 115% of 3x + 90%of 5x

$$= 115 \times \frac{3x}{100} + 90 \times \frac{5x}{100} = 7.95x$$

Loss = CP – SP = 8x – 7.95x = 0.05x

$$\text{loss\%} = 0.05x \times \frac{100}{8x} = 0.625\%$$

6. (d); Let CP be Rs. x

then, 900 – x = 2 (x – 450) [Profit = 2 Loss]

3x = 1800 $\Rightarrow$ x = Rs. 600

CP = Rs. 600, gain required = 25%

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

$$SP = (100 + 25) \times \frac{600}{100} = \text{Rs. } 750$$

7. (d); Here initially SP of some article = Rs. 35

Profit% = 40%

Now, finally SP of articles = Rs. x

Profit% = 60%

Here, CP is same in each case

$\Rightarrow (CP)_1 = (CP)_2$

$$\Rightarrow \frac{(SP)_1}{100 + P_1\%} = \frac{(SP)_2}{100 + P_2\%},\ \frac{35}{140} = \frac{x}{160},\ x = \text{Rs. } 40$$

8. (c); Let price of sugar per kg is x so

$$\frac{135}{x} - \frac{135}{1.2x} = 1.5 \quad \text{[as given in question]}$$

$$135\left(\frac{0.2}{1.2x}\right) = 1.5,\ x = \frac{135 \times 0.2}{1.2 \times 1.5} = \text{Rs. } 15 \text{ per kg}$$

Increased price = 15 × 1.2 = Rs. 18 per kg

9. (b); Total CP of mixture = 26 × 20 + 30 × 36

520 + 1080 = Rs. 1600, SP = 30 × 56 = Rs. 1680

$$\%\text{profit} = \frac{80}{1600} \times 100 = 5\%$$

10. (c); The SP of TV in chandigarh = Rs. x

The dealer bought it at delhi at = Rs. 0.8x

[Discount of 20%]

Total CP of TV set (including transportation cost)

Rs. 0.8x + 600

$$\text{Given Profit\%} = 14\frac{2}{7}\%$$

$$\frac{100}{7}=\left(\frac{(x)-(0.8x+600)}{(0.8x+600)}\right)\times 100$$

$$\frac{1}{7}=\left(\frac{0.2x-600}{0.8x+600}\right),\ \text{On solving, x = Rs. 8000}$$

11. (c); MP of chair = Rs. 800
After getting successive discount of 10% and 15% respectively

$$\Rightarrow \text{CP of chair} = \text{Rs.}\left[800\times\frac{90}{100}\times\frac{85}{100}\right] = \text{Rs. } 612$$

Total CP (including transportation cost)
612 + 28 = Rs. 640

$$\text{Profit\%} = \frac{800-640}{640}\times 100 = 25\%$$

12. (c); Let us assume that cost of the book is Rs. 100 and Market Price is Rs. 140
If we sell the book at half of MP

$$\text{then selling Price} = \frac{140}{2} = \text{Rs. } 70$$

So percent loss = (100 – 70) = 30% loss

13. (c); Price of 14 shirt = 14 × 45 = Rs. 630
25 pant = 25 × 55 = Rs. 1375
Total price of 39 items = Rs. 2005

$$\text{Price} = \frac{2005}{39}\times 1.40 \qquad [\text{Overall profit} = 40\%]$$

= 71.97 = Rs. 72 (Approx)

14. (a); Here, CP is same in both transactions
$(CP)_1 = (CP)_2$

$$\frac{(SP)_1}{100-x} = \frac{(SP)_2}{100+y} \qquad \begin{bmatrix}\text{Where } x = 4\%\ \text{Loss}\\ y = 8\%\ \text{Gain}\end{bmatrix}$$

$$(SP)_1 \text{ of 1 apple} = \text{Rs. } \frac{1}{36}$$

$$\Rightarrow \frac{\frac{1}{36}}{100-4} = \frac{(SP)_2}{100+8},\ (SP)_2 = \frac{108}{96}\times\frac{1}{36} = \text{Rs. } \frac{1}{32}$$

Hence, in a rupee, the person can sell 32 apples.

15. (a); Here, Aditya paid Rs. 59.40 for article
But before that there were 3 transactions of gain 20%, 10% and 12.5%
So, initially Ram would have bought article at Rs. x

$$\Rightarrow \quad x\times\frac{100+20}{100}\times\frac{100+10}{100}\times\frac{100+12.5}{100}$$

= Rs. 59.40

$$x = \frac{59.40\times 100\times 100\times 100}{120\times 110\times 112.5} = \text{Rs. } 40$$

16. (a); Let CP of whole fruit = Rs. A

He sold $\frac{3}{5}$th part at 10% profit and remaining $\frac{2}{5}$th part at 5% loss

Total profit = Rs. 1500

$$1500 = \left[\frac{3}{5}\times A\times\frac{10}{100} - \frac{2}{5}\times A\times\frac{5}{100}\right]$$

On solving above equation we get:
Total CP = A = Rs. 37,500

17. (b); Case – 1
Here, CP = Rs. 100, SP = Rs. 125
Profit of 1st shopkeeper = 25%
Case – 2
Here, CP = Rs. 125, SP = Rs. 100

$$\text{Loss of 2nd shopkeeper} = \left(\frac{125-100}{125}\right)\times 100\%$$

= 20%

18. (a); Here, the successive discounts given are 10% and x%

$$2400\times\frac{90}{100}\times\frac{(100-x)}{100} = 1836$$

$$100-x = \frac{1836\times 100\times 100}{2400\times 90} = 85$$

So discount = 100 – 85 = 15%

19. (b); Three successful discount equivalent to

$$\left[x+y+z-\frac{xy+yz+zx}{100}+\frac{xyz}{(100)^2}\right]\%$$

(where x = 10%, y = 12%, z = 15%)

$$\left[10+12+15-\frac{10\times 12+12\times 15+15\times 10}{100}+\frac{10\times 12\times 15}{(100)^2}\right]\%$$

37 – 4.50 + 0.18 = 32.68%

20. (d); Let the original price be Rs. x
$\Rightarrow$ Loss of 19% = Rs. (x – 0.19x)
= Rs. 0.81x (old price)
$\Rightarrow$ Profit of 17% = Rs. (x + 0.17x)
= Rs. 1.17x (new price)
(New price) – (Old price) = Rs. 162
[According to given question]

$$1.17x - 0.81x = 162,\quad x = \frac{162}{0.36} = \text{Rs. } 450$$

21. (b); Let CP = Rs. 100, Then SP = Rs. 123.5
Here discount of 5% is given
Let Mark Price be x Rs. then

$$x = \frac{123.50}{95} \times 100 = \text{Rs. } 130$$

So profit on Marked Price = 130 – 100 = 30%

22. (a); Let the original price bought by Aditya = Rs. 100

Aditya $\xrightarrow{10\% \text{ gain}}$ Nutan $\xrightarrow{20\% \text{ gain}}$ Manish
100 110 132

If Manish bought goods at Rs. 132
Initial CP = Rs. 100
Now, Manish bought goods at Rs. 1914

$$\text{Initial CP} = \text{Rs.}\left[\frac{100}{132} \times 1914\right] = \text{Rs. } 1450$$

23. (c); Initial CP = Rs. 9600

$$\text{SP after selling it at 12\% Loss} = \text{Rs. } 9600 \times \frac{88}{100}$$

New CP = Rs. 8448
Final SP after selling new CP price at 12% gain

$$\Rightarrow \text{Rs. } 8448 \times \frac{112}{100} = \text{Rs. } 9461.76$$

So, Total Loss = Initial CP – Final SP
= Rs. [9600 – 9461.76] = Rs. 138.24

24. (b); Total CP
= [CP of 30 dozen orange] + [CP of stall fee]
$\Rightarrow$ 8 × 30 + 500 = Rs. 740
Here, Nutan calculated that each glass needs 3 oranges and she wants to make 20% profit

$$\text{Per glass price} = \frac{740}{30 \times 12} \times 3 \times 1.20 = \text{Rs. } 7.40$$

25. (c); Let CP = Rs. 100
then total CP after repair = 100 + 15 = Rs. 115
after getting 20% profit
SP = 115 × 1.20 = 138 Rs.
but SP given is Rs. 1104

$$\text{so CP} = \frac{100}{138} \times 1104 = \text{Rs. } 800$$

26. (b); Let CP = Rs. 100
After 320% profit SP = Rs. 420
After increasing cost the,
CP = Rs. 125 [25% cost increase]
Profit = 420 – 125 = Rs. 295

$$\frac{295}{420} \times 100 = 70\% \text{ (Appx.)}$$

27. (b); CP of 1st item $= \frac{840}{1.2} = \text{Rs. } 700$ [gain of 20%]

CP of 2nd item $= \frac{960}{0.96} = \text{Rs. } 1000$ [loss of 4%]

Total CP = 700 + 1000 = Rs. 1700
SP = 840 + 960 = Rs. 1800

$$\%\text{profit} = \frac{100}{1700} \times 100 = 5\frac{15}{17}\%$$

28. (a); Given MP = Rs. 600
Hence on giving successive discounts of 10% and 20%,

$$\text{CP} = 600 \times \frac{90}{100} \times \frac{80}{100} = \text{Rs. } 432$$

$$\%\text{profit} = \frac{108}{432} \times 100 = 25\%$$

29. (a); CP of each kg mango $= \text{Rs. } \frac{21}{3} = \text{Rs. } 7$

SP of each kg mango $= \text{Rs. } \frac{50}{5} = \text{Rs. } 10$

Profit = SP – CP = Rs. 3
Here, Rs. 3 is profit earned for 1 kg
Similarly, Rs. 102 is profit earned for:

$$= \frac{1}{3} \times 102 = 34 \text{ kg}$$

30. (c); $\text{Old Profit\%} = \frac{15}{100} = \frac{(SP)_1 - CP}{CP}$ ...(i)

$\text{New Profit\%} = \frac{20}{100} = \frac{(SP)_2 - CP}{CP}$ ...(ii)

[Here, $(SP)_2$ = Rs. 600]
= From (ii), we get CP = Rs. 500
Divide (i) and (ii):

$$\frac{3}{4} = \frac{(SP)_1 - 500}{600 - 500}$$

Hence, $(SP)_1$ = Former Selling price = Rs. 575

31. (d); Let us assume payment order be Rs. 100
Case – 1: Successive discount of 10%, 10%, 30%

$$\Rightarrow 100 \times \frac{90}{100} \times \frac{90}{100} \times \frac{70}{100} = \text{Rs. } 56.7$$

Case – 2: Successive discount of 40%, 5%, 5%

$$\Rightarrow 100 \times \frac{60}{100} \times \frac{95}{100} \times \frac{95}{100} = \text{Rs. } 54.15$$

For Rs. 100, person can save Rs. (56.7 – 54.15)
= Rs. 2.55

Hence, for Rs. 10000, he can save

$= \text{Rs.}\ \frac{2.55}{100} \times 10000 = \text{Rs. } 255$

32. (b); CP of 1st article $= \frac{99}{1.10} = \text{Rs. } 90$ [Profit of 10%]

CP of 2nd article $= \frac{99}{0.99} = \text{Rs. } 100$ [Loss of 1%]

CP of both article together = 100 + 90 = Rs. 190

SP of both article together = 99 + 99 = Rs. 198

$\%\text{profit} = \frac{198-190}{190} \times 100 = 4\frac{4}{19}\%$

33. (c); Here, (100 + Profit)% of CP
= Rs. (MP – 10% of MP)
(100 + 35)% CP = Rs. (100 – 10)

(135%) CP = Rs. 90 $\Rightarrow$ CP = Rs. $\frac{200}{3}$

SP of article (at Rs. 30 less than MP) = Rs. 70

$\text{Profit}\% = \frac{70 - \frac{200}{3}}{\frac{200}{3}} \times 100 = 5\%$

34. (b); Let CP = Rs. 100
Then SP = Rs. 123.5

Let Marked Price be x Rs., then $x = \frac{123.50}{76} \times 100$

[on discount of 24%]

= Rs. 162.50
So profit on Marked Price = 162.50 – 100 = 62.50%

35. (b); $\text{Loss} = \frac{20}{100} = \frac{\text{CP} - 500}{\text{CP}}$

CP = Rs. 625

Now Profit $= \frac{20}{100} = \frac{\text{SP} - 625}{625}$, SP = Rs. 750

36. (d); Here, CP of 19 article = SP of 15 article

$\frac{\text{CP of 1 article}}{\text{SP of 1 article}} = \frac{15}{19}$

$\%\text{gain} = \frac{19-15}{15} \times 100 = 26\frac{2}{3}\%$

37. (b); Here, we need to determine only ratio of selling price only.
SP is directly proportional to profit%

$= \frac{(\text{SP})_1}{(\text{SP})_2} = \frac{x + 0.04x}{x + 0.06x} = \frac{1.04x}{1.06x} = 52 : 53$

38. (b); Let quantity sold at loss be x kg and let CP per kg be Rs. 1. Total CP = Rs. 24
Total SP = Rs. [120% of (24 – x) + 95% of x]

$= \text{Rs.}\left[\frac{6}{5}(24 - x) + \frac{19x}{20}\right] = \text{Rs.}\left[\frac{576 - 5x}{20}\right]$

$\frac{576 - 5x}{20} = 110\% \text{ of } 24,\ 576 - 5x = 528$

$5x = 48 \Rightarrow x = \text{Rs. } 9.6$

39. (a); Let Mark Price is Rs. 100
Selling Price = Rs. 90

Cost Price is $\frac{90}{1.5} = \text{Rs. } 60$

[on earning profit of 50%]

If discount is not given, Percentage Profit

will be $= \frac{100 - 60}{60} \times 100 \Rightarrow$ So, Profit = 66.67%

40. (a); If we are given 3 successive discounts of 15%, 10% and 5%,
So, the new reduced price after applying above discount on Rs. 10000

$= 10000 \times \frac{85}{100} \times \frac{90}{100} \times \frac{95}{100} = \text{Rs. } 7267.50$