**Profit, Loss and Discount**

Ans 1 : Option b

33.33% represents 1/3. If the CP is x, then the SP is 4/3x. According to the problem we have

(4/3)x-x = 45 or, x/3 = 45 or, x=135 Rs.

Ans 2 : Option b

The mistake that students make in such problems is that they consider it as 2 items free for the price of 3 items thus making it an effective discount of 66.66%.

This is a mistake as discount is always calculated on the marked price and not on the selling price. Thus it is 2 items free on the marked price of 5 items and therefore the discount offered is 40%.

Ans 3 : Option c

We can directly calculate the profit as the successive effect of the % mark-up and the % discount.

30-10-(300/100) = 20-3 = 17% profit.

Ans 4 : Option a

(1/5)\*-100 + (4/5)\*30

-20+24 = 4% profit.

Ans 5 : Option d

Loss incurred on selling the article for Rs.1200 is Rs.300.

The profit on selling it at Rs.X is 50% more than the loss incurred. The profit earned is Rs.450 and so the required selling price will be = 1500+450 = Rs.1950

Ans 6 : Option d

CP of 25 items = SP of 15 items

Profit% earned = ((25-15)/15)\*100 = 66.66%

Ans 7 : Option c

Let initial CP be x Rs and so the initial SP will be 0.8x

The CP increased by 30% and so will become 1.3x. The SP was increased by 30% and so the new SP will be 1.04x.

New profit % = ((1.04x-1.3x)/1.3x)\*100

=(-.26/1.3)\*100 = 20% loss

**Alternate Method :** Whenever the SP and the CP are both increased or both decreased by the same %, the overall % profit or loss remains the same as earlier.

Ans 8 : Option a

SP of 35 Kg – CP of 35 Kg = SP of 10 Kg

CP of 35 Kg = SP of 25 Kg = Rs.1400

SP per Kg = 1400/25 = 56 Rs.

Ans 9 : Option d

Total Cost Price of the Bananas = Rs.32

While selling 18 Bananas are sold at a price of Rs.12 per dozen.

Amount earned = Rs.18

Remaining Bananas are sold at the rate of Rs.4 per dozen. Since the remaining Bananas constitute half a dozen therefore the amount earned will be Rs.2.

Total selling price = Rs.20.

Therefore, ((20-32)/32)\*100 = -300/8 = -150/4 = 37.5% loss

Ans 10 : Option b

Let the CP of a horse and cow be x and y respectively.

4x+9y=13400

Profit earned = Rs.1880

Total SP=Rs.15280

Also, 4.4x+10.8y=15280

Solving for x and y we get x=2000 and y=600

Ans 11 : Option b

Rs.37.4 is the SP of 2 articles and so the SP per article is Rs.18.70/-. This is after a discount of 15% and so the SP represents 85% of the marked price.

MP x (85/100) = 18.7

MP x (17/20) = 18.7

MP = Rs.22

Ans 12 : Option a

The amount of discount offered = Rs.720-550.8 = Rs.169.2/-

The percentage discount offered = (169.2/720)\*100 = 23.5% discount.

The second discount offered must be 12%

Ans 13 : Option c

Ans 14 : Option d

Let the Marked Price be x Rs. The item is sold at 40% of the Marked Price ie the SP is 0.4x.

This results in a loss of 25%. Therefore,

CP x 75/100 = 0.4x

CP x 3/4 = 0.4x

CP = 1.6x/3

Ratio of the Marked Price to the Cost Price = 30:16 = 15:8

Ans 15 : Option d

One item is free with purchase of every 15 items.

Discount offered = (1/15)\*100 = (20/3) %.

Additional discount offered = 4%

Total discount offered = -20/3-4+80/300

= -32/3 + 4/15 = -160+4/15 = -10.4%

Let the mark-up be x%

x-10.4-(10.4x/100)=35

89.6x/100 = 45.4

x=(45.4 x 100)/89.6 = 50%

Ans 16 : Option a

Let us first find the mark-up.

-10+x-10x/100 = 20

90x/100 = 30

or, x=33.33%

If 20% discount is given then

33.33-20-(33.33\*20)/100

=13.33-6.66 = 6.67%

Ans 17 : Option b

Required answer is the % of Water added to Milk which will be (20/120)\*100 = 16.66% profit.

Ans 18 : Option b

If Water would have been free of cost, then the % of Water added would have been 25% but since the water added is not free of cost, therefore more amount of water is to be added to get the same profit.

Ans 19 : Option c

Since y is being calculated on a higher value, therefore to get the same effect, x has to be greater than y.

Ans 20 : Option a

Effective discount offered = -30-40+(1200/100) = -70+12 = -58%

MP x 42/100 = 840

or MP=2000/-

Discount offered = 2000-840 = Rs.1160.

Ans 21 : Option c

Since the profit is Rs.90 and the selling price is Rs.450, the cost price must be Rs.360.

The percentage profit = (90/360)\*100 = 25% profit.

This has to be increased by 50%. The value of the new percentage profit is 37.5%.

We need to calculate 37.5% of Rs.360.

= (37.5/100)\*360 = Rs.135.

New value of the selling price = 360+135 = Rs.495.

Ans 22 : Option a

He has purchased a total of 144 oranges ie 12 dozens at the rate of Rs.18 per dozen.

Total cost price of the oranges = 18 x 12 = Rs.216.

Total selling price of the oranges = Rs.237.60.

Percentage profit = ((237.6-216)/216)\*100

= 10%

Ans 23 : Option c

The man sold the item for Rs.600 at a profit of 20%. Let x be the cost price for the man.

Therefore, x (120/100) = 600

or, x=Rs.500.

He has spent a total of Rs.200 on it’s repairs and therefore the cost price of the product for the man must be Rs.300.

He got this after a discount of 20%.

Let the marked price of the product be Y.

Therefore, Y x (80/100) = Rs.300

or Y = Rs.375.

Ans 24 : Option b

CP of 1000 gms = SP of Z gms.

The profit percentage is 25%.

((1000-Z)/Z) \* 100 = 25

((1000-Z)/Z) \* 4 =1

4000-4Z = Z

or, 5Z=4000

or, Z = 800.

The 2 weights together add upto 800 gms.

Let one of them be x and therefore the other will be 50+x.

Now, x+50+x = 800

2x=750 gms

x=375 gms.

Ans 25 : Option d

50 litres of water is added to 250 litres of Milk and therefore the profit percentage due to addition of an impurity is 20%.

He sells it a mark-up of 25% and so the profit earned due to the mark-up will be 25%.

The combined profit will be the successive effect of the 2 values ie

20+25+(500/100) = 50% profit.

Ans 26 : Option b

The discount offered is 25% in order to achieve a profit of 15%.

x-25-(25x/100) = 15

75x/100 = 40

or, x= 160/3 = 53.33 %.

Ans 27 : Option b

CP of 20 m – SP of 20 m = SP of 4 m

CP of 20 m = SP of 24 m

Therefore, ((20-24)/24) \* 100

= 16.66 % loss.

Ans 28 : Option b

Let us look at option b ie giving 40% more quantity for the same price.

CP of 100 gms = SP of 140 gms.

Percentage discount offered = ((100-140)/140)\*100

= -200/7 = -28.56% ie discount of 28.56%.

Option b is a better choice.

Ans 29 : Option a

Let the marked price of the 2 articles be X and Y respectively.

The selling price of the 1st article will be = 0.875X

The selling price of the 2nd article will be = 0.9091Y

Since the price of the 2 articles are the same, therefore

0.875X = 0.9091Y

Therefore, X/Y = 80:77.

Ans 30 : Option a

Value of loss in rupee terms = (2 x 10 x 10 x 1980) / 10000-100

= (2 x 100 x 1980) / 9900

= Rs.40 loss

This problem could have been done in easier way. We know that the situation will definitely lead to a loss. Only option a can be a possible value.