Answer the questions

(1) A shopkeeper gives 10% discount on all items. If the discounted price of a dining table is Rs. 18000, find the original price of the dining table.

(2) If 600 glasses are bought at the rate of Rs.12 each, and 480 are sold at rate of Rs.15 each. Find the overall profit/loss.

(3) A shopkeeper sold a racket at a loss of 21%. Had he sold it for Rs. 27 more, he would have gained 6%. Find the cost price of racket.

(4) Aditya sells his two cycles at the rate of Rs. 5 hundreds each. On one cycles he gains 6% while on other cycles he incurs a loss of 6%. Find his total loss/gain in whole transaction.

(5) A shopkeeper mixes two variants of rices in ratio 3:1. The first variety costs Rs.32 per kg, while other costs 36 per kg. If the mixed rice is sold at price of 28.05 per kg. Find the profit/loss incurred by shopkeeper.

(6) A shopkeeper sells two quality of tea at rate of Rs. 33 per kg. and Rs. 30 per kg, gaining 10% and 20% profit respectively. If he mixes the two variants in the ratio 3:2 and sells the mixture at Rs. 21 per kg., what is his gain or loss?

Choose correct answer(s) from given choice

(7) Due to 5% discount offered by a shop, price of a mobile phone reduces by Rs. 185. Find the discounted price of mobile phone.
   a. Rs. 3866       b. Rs. 2812
   c. Rs. 3515       d. Rs. 4218

(8) Sita purchased 240 glasses for her shop at Rs.8 each. During transportation 24 glasses got damaged, and she sold remaining glasses at price of Rs.12 each. Find overall profit/loss in %.
   a. 30% profit  
   b. 35% profit 
   c. 45% profit  
   d. 40% profit 

Fill in the blanks

(9) A shopkeeper buys 10 dining tables for Rs. 150000. If he sells them for a profit of 5%, the selling price of one dining table = Rs. ________.

(10) A shopkeeper provides two successive discount of 25% and 40% on selling an article. If the selling price is Rs. 180, the marked price of the article = Rs. ________.
Answers

(1) Rs. 20000

Step 1
Let us assume the original price of the dining table is $x$.

Step 2
The discount given by the shopkeeper on all items = 10%.
Thus, the discounted price of the dining table = $x - x \times \frac{10}{100}$

\[ = \frac{100x - 10x}{100} \]
\[ = \frac{90x}{100} \]

Step 3
According to the question, the discounted price of the dining table = Rs.18000.
Therefore, \[ \frac{90x}{100} = 18000 \]
\[ \Rightarrow x = \frac{18000 \times 100}{90} \]
\[ \Rightarrow x = 20000 \]

Step 4
Therefore, the original price of the dining table is Rs.20000.

(2) No profit and no loss

Step 1
According to the question, 600 glasses are bought at the rate of Rs.12 each.
Cost Price, C.P. = 600 \times 12 = Rs.7200

Step 2
Also, 480 are sold at the rate of Rs.15 each.
Selling Price, S.P. = 480 \times 15 = Rs.7200

Step 3
Since both cost price and selling price are equal, thus there is no profit and no loss

Step 4
Therefore, there is no profit and no loss.
Step 1
Let's assume the cost price of toy is Rs. x.

Step 2
If you read the question carefully, you will notice that the shopkeeper sold a racket at a loss of 21%.

or loss = \( x \times \frac{21}{100} \)

Step 3
The sale price of racket = cost price of toy - loss = \( x - x \times \frac{21}{100} \)

Step 4
If he sold it for Rs. 27 more, he would have gained 6%.

The sale price of racket = \( x - x \times \frac{21}{100} + 27 \) -----(1)

Gain = \( x \times \frac{6}{100} \)

Step 5
Now the sale price of racket = cost price of racket + gain = \( x + x \times \frac{6}{100} \) ----- (2)

Step 6
By comparing equation (1) and (2), LHS(Left Hand Side) are equal therefore the RHS(Right Hand Side) are also equal

\[ x + x \times \frac{6}{100} = x - x \times \frac{21}{100} + 27 \]

\[ \Rightarrow x + \frac{6x}{100} - x + \frac{21x}{100} = 27 \]

\[ \Rightarrow \frac{6x}{100} + \frac{21x}{100} = 27 \]

\[ \Rightarrow \frac{6x + 21x}{100} = 27 \]

\[ \Rightarrow 27x = 100 \times 27 \]

\[ \Rightarrow x = \frac{2700}{27} \]

\[ \Rightarrow x = 100 \]

Step 7
Therefore the cost price of racket is Rs. 100.
Step 1
Since ratio of two variants of rices is in ration 3:1, lets assume that shopkeeper bought 3p and p kgs of two variants respectively

Step 2
Cost Price, C.P. = (3p × 32) + (p × 36) = 132 p
Selling price, S.P. = (3p + p) × 28.05 = 112.2 p

Step 3
Loss = Cost Price - Selling Price
= 132p - 112.2p
= 19.8p

Step 4
Loss % = \( \left( \frac{\text{Loss}}{\text{C.P.}} \right) \times 100 \)
= \( \left( \frac{19.8p}{132p} \right) \times 100 \)
= 15

Step 5
Therefore, the loss is 15%.
Step 1
Let us assume the price of a mobile phone is \( x \).

Step 2
Discount offered = 5% of \( x \)

\[
= \frac{5 \times x}{100}
\]

\[
= \frac{5x}{100}
\]

Step 3
According to the question, the price of the mobile phone reduces by Rs.185.

Therefore,

\[
\frac{5x}{100} = 185
\]

\[
=> x = \frac{185 \times 100}{5}
\]

\[
=> x = 3700
\]

Reduced price = Original Price - Price Reduces

= 3700 - 185

= 3515

Step 4
Therefore, the discounted price of mobile phone is **Rs.3515**.
Step 1
According to the question, Sita purchased 240 glasses for her shop at Rs.8 each.
Cost Price, \( CP = 240 \times 8 = Rs.1920 \)

Step 2
During transportation 24 glasses got damaged.
Remaining glasses = 240 - 24 = 216

Step 3
She sold remaining 216 glasses at price of Rs.12 each.
Selling price, \( SP = 216 \times 12 = Rs.2592 \)

Step 4
Profit = \( SP - CP \)
= 2592 - 1920
= Rs.672

Step 5
Profit % = \( \frac{\text{Profit} \times 100}{CP} \)
= \( \frac{672 \times 100}{1920} \)
= \( \frac{67200}{1920} \)
= 35

Step 6
Therefore, there is 35% profit.
Step 1
The cost price of 10 dining tables = Rs.150000.
The cost price of 1 dining table = $\frac{150000}{10} = Rs.15000.$

Step 2
According to the question, the shopkeeper makes 5% profit on selling of dining tables.
We know that, selling price = $\frac{100 + \text{profit}\%}{100} \times \text{cost price}$

$\begin{align*}
&= \frac{100 + 5}{100} \times 15000 \\
&= \frac{105}{100} \times 15000 \\
&= 15750
\end{align*}$

Step 3
Therefore, the selling price of one dining table is Rs.$15750$. 
Step 1
Let the marked price of the article be $x$.

Step 2
According to the question, shopkeeper provides two successive discount of 25% and 40% on selling an article.
% Selling price for a discount of 25% = 100 - 25 = 75%,
Similarity, % Selling price for a discount of 40% = 100 - 40 = 60%

Step 3
Now selling price will be 60% of 75% of cost price. i.e.,
60% of 75% of $x = 180$
$\Rightarrow 60\% \text{ of } \left( \frac{75x}{100} \right) = 180$
$\Rightarrow \frac{60 \times 75 \times x}{100 \times 100} = 180$
$\Rightarrow x = \frac{180 \times 100 \times 100}{60 \times 75}$
$\Rightarrow x = \text{Rs.}400$

Step 4
Therefore, the marked price of the article is Rs.400.