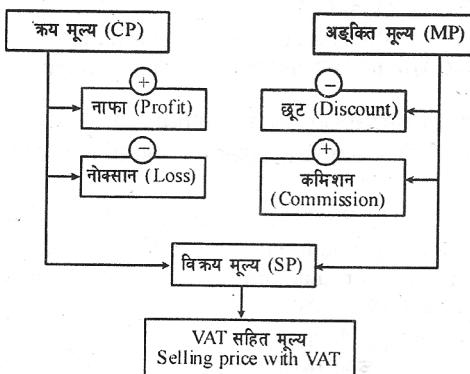


कर र मुद्रा विनियम

(Tax and Money Exchange)

2.1 मूल्य अमिवृद्धिकर (Value Added Tax)

केहि महत्वपूर्ण सुत्रहरू (Some important formulae)



■ नाफा र नोकसान (Profit and Loss):

नाफा = वि.मू. - क्र.मू. नोकसान = क्र.मू. - वि.मू.

Actual profit = SP - CP, Actual loss = CP - SP

$$\text{नाफा \%} = \frac{\text{वास्तविक नाफा} \times 100\%}{\text{क्रम मूल्य}}, \text{नोकसान \%} = \frac{\text{वास्तविक नोकसान} \times 100\%}{\text{क्रम मूल्य}}$$

$$\text{Profit \%} = \frac{\text{Actual Profit} \times 100\%}{\text{Cost price (C.P)}}, \text{Loss \%} = \frac{\text{Actual loss} \times 100\%}{\text{Cost price (CP)}}$$

$$\text{वि.मू.} = \frac{\text{क्रयमूल्य} \times (100 + \text{नाफा \%})}{100} \quad \text{वि.मू.} = \frac{\text{क्रयमूल्य} \times (100 - \text{नोकसान \%})}{100}$$

$$SP = \frac{CP \times (100 + \text{Profit \%})}{100}, \quad SP = \frac{CP \times (100 - \text{loss \%})}{100}$$

$$\text{क्र.मू.} = \frac{\text{वि.मू.} \times 100}{(100 - \text{नोकसान \%})}, \quad \text{क्र.मू.} = \frac{\text{वि.मू.} \times 100}{(100 - \text{नोकसान \%})}$$

$$CP = \frac{SP \times 100}{(100 + \text{profit \%})}, \quad CP = \frac{SP \times 100}{(100 - \text{loss \%})}$$

क्रय मूल्य (Cost price) = CP (क्र.मू.), विक्रय मूल्य (selling price = SP (वि.मू. नाफा = profit र नोकसान = loss भए,

यदि क्रय मूल्य = CP नाफा प्रतिशत = profit% र अंकति मूल्य = MP भए,

If cost price = CP Profit percent = Profit% and Marked price = MP

Marked price (MP) = CP + profit % of CP

$$MP = CP \left(1 + \frac{\text{profit}}{100} \right)$$

$$\therefore MP = \frac{CP \times (100 + \text{profit}\%)}{100}$$

यदि अंकित मूल्य = MP छुट प्रतिशत = d%

वास्तविक विक्रीमूल्य = SP भए

$$\text{वास्तविक विक्री मूल्य (SP)} = MP - MP \text{ को } \frac{\text{छुट \%}}{100} = MP \left(1 - \frac{d}{100}\right)$$

$$\therefore SP = \frac{MP (100 - d\%)}{100}$$

If marked price = MP, discount percent = d%

Actual selling price = SP

$$\therefore SP = MP - d\% \text{ of } SP = MP \left(1 - \frac{d}{100}\right)$$

$$\therefore SP = \frac{MP (100 - d\%)}{100}$$

■ यदि अंकित मूल्य = MP छुट रकम = d

छुट पद्धिको वास्तविक मूल्य = SP भए

$$\therefore \text{वास्तविक विक्री मूल्य (SP)} = \text{अंकित मूल्य (MP)} - \text{छुट रकम (discount amount)}$$

If marked price = Mp, discount amount actual Selling price = SP

$$\therefore SP = \text{marked price (MP)} - \text{discount amount (d)}$$

अंकित मूल्य = MP, छुटरकम = d र छुट प्रतिशत d%

$$\text{छुट रकम} \times 100\% \\ \text{छुट प्रतिशत (d\%)} = \frac{\text{अंकित मूल्य (MP)}}{100}$$

If marked price = MP, discount amount = d, and discount percent = (d%)

$$\therefore \text{discount \%} = \frac{\text{discount amount} \times 100\%}{\text{marked price (MP)}}$$

■ यदि अंकित मूल्य = MP, छुट पद्धिको वास्तविक विक्री मूल्य = SP भए

$$\text{छुट रकम} = \text{अंकित मूल्य (MP)} - \text{वि.मू. (SP)} = MP - SP$$

If marked price = MP After discount actual selling price = SP

discount amount = marked price (MP) – selling price (SP)

यदि अंकित मूल्य = MP र छुट प्रतिशत = d% भए छुट रकम = अंकित मूल्य × d%

$$= \text{अंकित मूल्य (MP)} \times \frac{d}{100}$$

$$\text{If marked price = MP and discount percent = D\%, discount amount} = d\% \text{ of MP} = MP \times \frac{d}{100}$$

■ छुट पद्धिको वास्तविक विक्री मूल्य = SP, VAT रकम भएमा, VAT पद्धिको विक्री मूल्य = SP₁ भए

If after discount actual selling price = SP

VAT amount and after VAT selling price = SP₁

$$\therefore SP_1 = \text{selling price (SP)} + \text{VAT amount}$$

यदि, छुट पद्धिको वास्तविक विक्री मूल्य = SP र VAT सहित विक्री मूल्य SP₁ भए

$$\therefore \text{VAT रकम} = SP_1 - SP$$

If after discount actual selling price = SP and selling price with VAT = sp,

$$\therefore \text{VAT amount} = SP_1 - SP$$

■ यदि छुट पद्धिको मूल्य = SP र VAT दर = VAT% भए

$$\text{VAT सहित विक्री मूल्य (SP}_1) = SP + SP \text{ को VAT\%} = SP \left(1 + \frac{\text{VAT}}{100}\right)$$

$$\therefore SP_1 = \frac{SP \times (100 + \text{VAT\%})}{100}$$

- यदि छुट प्रतिशत लगातार $d_1\%$, $d_2\%$ भए छुट पछिको विक्री मूल्य

$$SP = \frac{MP(100 - d_1\%) \times (100 - d_2\%)}{100}$$

If discount percent $d_1\%$ and $d_2\%$ respectively after discount actual selling price = SP

$$\therefore SP = \frac{MP(100 - d_1\%)(100 - d_2\%)}{100 \times 100}$$

Very Short Questions

Model 1:

- वास्तविक छुट र अंकित मूल्य दिइएको अवस्थामा छुट प्रतिशत पत्ता लगाउने सुन्न लेख्नुहोस्।

Write the formula for finding ratio of discount when discount amount and market price are given.

Solution: Here discount percent ($d\%$) = $\frac{\text{discount amount} \times 100\%}{\text{marked price(mp)}}$

Model 2:

- मूल्य अभिवृद्धि करको परिभाषा लेख्नुहोस्।

Write down the definition of value added Tax (VAT)

Solution:

Here, Value added tax is melterstage tax as it is levied in ever stage of distribution channels. The channel may be importer manufacture , whole seller and retailer . Which tax pay the selling price of the article)

Model 3:

- यदि कुनै वस्तुको विक्रय मूल्य रु. x र मूल्य अभिवृद्धि कर रु. y छ भने मूल्य अभिवृद्धि कर दर कति हुन्छ ? लेख्नुहोस्।

If the selling price of an article is Rs.x and value added tax is Rs. y what the rate of value added tax? Write it.

Solution:

Here, Selling price (sp) = Rs. x Value added tax = Rs. y

$$\text{VAT Rate} = \frac{\text{VAT added tax} \times 100}{Sp} = \frac{Rs. x \times 100}{Rs. y} = \frac{100 \times x}{y} \%$$

Model 4:

- यदि कुनै सामानको अंकित मूल्य रु. x ,छुट रकम रु. y मूल्य अभिवृद्धि कर सहित विक्रय मूल्य कति हुन्छ ? पत्ता लगाउनुहोस्।

If the marked price of an article is Rs x discount amount is Rs. y and the VAT amount is Rs. z then what is the selling price of the including VAT? Find it

Solution:

Marked price of article (MP) = Rs. x , discount amount= Rs. y

VAT amount = Rs. z

Selling price VAT (Sp₁) = Sp + VAT amoun = $(x - y) + z$.

Model 5:

- कुनै सामानको अंकित मूल्य रु. x छ । यदि यसमा रु. y छुट दिइयो भने छुट प्रतिशत कति हुन्छ ? लेख्नुहोस्।

The marked price of an article is Rs x. If discount amount of Rs.y is allowed on it. What is the discount percent ?Write it.

Solution:Here marked price of article (mp) = Rs. x discount amount = Rs. y

$$\text{discount percent (d\%)} = \frac{y \times 100}{x} \% = \frac{100y}{x} \%$$

Model 6:

VAT सहितको विक्रय मूल्य र VAT बाहेकको विक्रयमूल्य दिइएको अवस्थामा VAT को दर पत्ता लगाउने सुन्न लेख्नुहोस्। यसमा रु. y छुट दिइयो भने छुट प्रतिशत कति हुन्छ ? लेख्नुहोस्।

Write the formula for finding the VAT Rate when the selling price with VAT. and Selling without VAT are given

Solution: Selling price with VAT = sp_1 Selling price with out VAT = Sp

VAT = amount = $Sp_1 - Sp$

$$\therefore \text{VAT amount Rate} = \frac{\text{VAT amount}}{Sp} \times 100\%$$

Model 7:

क्य मूल्यमा नाफा जोड्दा कुन मूल्य आउँछ ? (Which price is obtained when profit is added cost price?)

Solution: Cost price = cp + profit amount are given:

$$Sp = cp + \text{profit}$$

Model 8:

रु. 1800 को विलमा 5% छुट दिदा कति रकम तिर्नुपर्ला ? Write the cash payment of bill amounting Rs. 1800 allowing a discount of 5%

Solution: marked price = (MP) = Rs. 1800 discount Rate = 5%

$$\text{discount amount} = 5\% \text{ of Rs } 1800 = \frac{5}{100} \times \text{Rs } 1800 = \text{Rs. } 90.$$

$$\text{Cash pay amount} = \text{Rs. } 1800 - \text{Rs. } 90 = \text{Rs. } 1710$$

Practice Yourself

- यदि VAT रकम र विक्रय मूल्य दिइएमा VAT दर निकाल्ने सून्न लेख्नुहोस्।
Write the formula of VAT percent when the VAT amount and selling price is given.
- यदि एउटा सामानको मूल्य रु 260 पर्दै। यदि 5% छुट दिइएमा छुट रकम कति होला ?
The price of an article with 15%VAT is Rs. 690. What will be the price excluding VAT.
- एउटा सामानको 15% VAT सहितको मूल्य रु. 680 छ भने VAT बाहेकको मूल्य कति होला ?
Write the formula for finding discount percent when discount amount and market price are given.
- एउटा वस्तुको अङ्गकित मूल्य रु 500 पर्दै। 50 % छुट पर्दै सो वस्तुको छुट रकम कति होला ?
The market price of an aetcile is Rs. 500, After allowing 50% discount what will be the discount amount.
- विक्रयमूल्य र VAT प्रतिशत दिइएमा VAT सहित विक्री मूल्य निकाल्ने सून्न लेख्नुहोस्।
Write the formula for the selling price with VAT amount when selling price and VAT% are given.
- वास्तविक नोक्सान रकम र क्यमूल्य दिइएमा नोक्सान प्रतिशत निकाल्ने सून्न लेख्नुहोस्।
Write the formula for loss percent when actual selling price and cost price are given.
- छुट पछिको विक्रयमूल्य र VAT सहित वि.मु. दिइएमा VATरकम निकाल्ने सून्न लेख्नुहोस्।
Write the formula for VAT amount when selling price after discount and selling price with VAT are given.
- एउटा वस्तुको विक्रयमूल्य रु 4400 छ। मूल्यमा 13% VAT लगाउदा VAT रकम कति होला ?
Selling price of an article is Rs. 4400. What will be VAT amount for 13% VAT on its price.
- एउटा सामान रु 500 मा बेच्दा रु 100 नाफा हन्दै भने क्यमूल्य पत्ता लगाउनु होस्।
If an article is sold for Rs. 500 there is profit Rs 100, find the cost price.
- रु 1000 मा किनिएको सामान रु 1200 मा बेच्दा कति नाफा वा नोक्सान हुन्दै ?
An article bought Rs 1000 is sold at Rs 1200 what will be profit or loss.
- छुट रकम र अंकित मूल्य दिइएको छ भने छुट दर निकाल्ने सून्न लेख्नुहोस्।
Write the formula for find the discount rate when discount amount and marked price are given.

12. 12% छुट पछि एउटा वस्तुको वास्तवीक मूल्य रु 1320 पर्छ भने अंकित मूल्य कति होला ?
 After 12% discount, the actual price of an article is Rs 1320 find marked price.
13. एउटा सामानको अंकित मूल्य रु. 1500 छ। यदि VAT रकम रु. 150 भए VAT सहितको विक्रय मूल्य कति होला ?
 Market price of an article Rs. 1500. If VAT amount Rs. 150, find selling price with VAT.

Short Questions

Model 1

एउटा घडीको विक्रय मूल्य रु 2700 छ। त्यसको अंकित मूल्यमा 10% छुट दिई विक्री गरिएको थियो भने त्यसको अंकित मूल्य कति थियो ?

The selling price of a watch is Rs 2700. If this watch was sold 10% discount from the marked price, what was the marked price?

Solution:

Here, After discount

$$\text{Selling price of watch (SP)} = \text{Rs. } 2700$$

$$\text{Discount percent (d\%)} = 10\%$$

Using formula

$$\therefore \text{SP} = \frac{\text{MP} (100 - d\%)}{100}$$

$$\text{or, } \text{Rs } 2700 = \frac{\text{MP} (100 - 10)}{100}$$

$$\text{or, } \text{Rs } 2700 = \frac{\text{MP} \times 90}{100}$$

$$\text{or, } \text{MP} = \frac{\text{Rs } 2700 \times 100}{90}$$

$$\therefore \text{MP} = \text{Rs } 3000$$

\therefore Marked price of watch is Rs 3000.

Model 2

एउटा सामानको 13% VAT सहितको मूल्य रु 1356 छ। उक्त सामानको VAT वाहेक को मूल्य कति हुन्छ ?

The price of an article including 13% VAT is RS 1356 find price of the article excluding VAT.

Solution:

Here, VAT rate = 13%

$$\text{Selling price with VAT (SP}_1) = \text{Rs } 1356$$

According to the formula,

$$\therefore (\text{SP}_1) = \frac{\text{SP}(100 + \text{VAT}\%)}{100}$$

$$\text{or, } \text{Rs. } 1356 = \frac{\text{SP} \times (100 + 13)}{100}$$

$$\text{or, } \text{Rs. } 1356 = \frac{\text{SP} \times 113}{100}$$

$$\text{or, } \text{SP} = \frac{\text{Rs } 1356 \times 100}{113}$$

$$\therefore \text{SP} = \text{Rs } 1200$$

Selling price without VAT is RS. 1200

Model 3

एउटा विजुलीको चिमको मूल्य रु 300 पर्छ। एउटा व्यापारीको उक्त मूल्यमा 10% छुट दिई बेच्दछ भने उसले त्यो चीम कतिमा बेच्दछ पत्ता लगाउनुहोस्।

The cost price of an electric bulb is Rs 300. If the shop keeper sells the bulb by allowing 10% discount what does he sell the bulb find it.

Solution:

Here, Price of bulb (MP) = Rs 300

discount percent (D%) = 10%

After discount

$$\text{Actual selling price (SP)} = \frac{\text{MP}(100 - d\%)}{100} = \frac{\text{Rs } 300(100 - 10\%)}{100} = \frac{\text{Rs } 300 \times 90}{100} = \text{Rs } 270$$

After 10% discount, price of bulb is Rs. 270

Model 4

रु 180 मूल्य भएको एउटा खेलौनामा किति प्रतिशत छुट दिवा केताले 160 मा किन्तु आउद्ध ?

What percent of discount should be given in a doll costing Rs 180 such that a customer has to buy it for Rs 160.

Solution:

Here, market price of doll (MP) = Rs 180

After discount

Selling price of doll (SP) = Rs 160

Discount amount = MP - SP = Rs 180 - Rs 160 = Rs 20

$$\text{discount \%} = \frac{\text{discount amount} \times 100\%}{\text{marked price (MP)}} = \frac{\text{Rs } 20 \times 100\%}{\text{Rs } 180} = 11\frac{1}{9}\%$$

$$\therefore \text{Discount percent} = 11\frac{1}{9}\%$$

Model 5:

एउटा वस्तुको वास्तविक मूल्यमा 15% बढाई अंकित मूल्य रु 1380 कायम गरियो सो वस्तुको वास्तवीक मूल्यमा पत्ता लगाउनुहोस् ।

The marked price of an article was fixed to Rs 1380 by increasing 15% in its actual price find the actual price.

Solution:

Here, let Actual price of article (CP) = x

Profit percent (Profit %) = 15%

Marked price of article (MP) = Rs 1380

$$\therefore \text{MP} = \frac{\text{CP}(100 + \text{Profit}\%)}{100}$$

$$\text{or, } \text{Rs } 1380 = \frac{x(100 + 15)}{100}$$

$$\text{or, } \text{Rs } 1380 \times 100 = x \times 115$$

$$\text{or, } x = \frac{\text{Rs } 1380 \times 100}{115}$$

$$\therefore x = \text{Rs } 1200$$

Actual price of article is Rs 1200.

Model 6:

एउटा टेब्लुको VAT बाहेकको मूल्य रु 3500 र VAT सहितको मूल्य रु 3850 रहेछ भने VAT दर पत्ता लगाउनुहोस् ।

The cost of a table without VAT is Rs 3500 and including VAT is Rs 3850. Find the rate of VAT.

Solution:

Here, Price of table without VAT (SP) = Rs 3500

Price of table with VAT (SP) = RS 3850

$$\begin{aligned} \text{VAT amount} &= \text{SP}_1 - \text{SP} \\ &= \text{Rs } 3850 - \text{RS } 3500 = \text{Rs } 350 \end{aligned}$$

$$\text{VAT Rate} = \frac{\text{VAT amount} \times 100\%}{\text{SP}} = \frac{\text{Rs } 350 \times 100\%}{\text{Rs } 3500} = 10\%$$

$$\therefore \text{VAT Rate} = 10\%$$

Model 7

एकजना पर्यटकले 13% VAT सहित प्रति टोपी रु 452 पर्ने 5 ओटा कालो टोपी किनेछ । उसले नेपाल छोडदा कति रुपैया पाउँछ ?

A tourist buy 5 pieces black cap at Rs 452 per cap including 13% VAT .How much will he receive while leaving Nepal.

Solution:

Here, selling price with 13% VAT per cap (SP_1) = Rs 452

Let selling price without VAT (SP) = x

$$\therefore SP_1 = \frac{SP(100 + VAT\%)}{100}$$

$$\text{or, } \text{Rs. } 452 = \frac{x \times 113}{100}$$

$$\text{or, } x = \frac{\text{Rs } 452 \times 100}{113}$$

$$\therefore x = \text{Rs. } 400$$

$$\text{VAT amount per cap} = SP_1 - SP = \text{Rs } 452 \times \text{Rs } 400 = \text{Rs } 52$$

$$\text{Tourist receive amount} = \text{Rs } 52 \times 5 = \text{Rs } 260$$

Model 8

अंकित मूल्य रु 1200 भएको एउटा कमिज मा 13% VAT लगाउदा चुक्ता मूल्य कति हुन्छ ?
Find the net selling price of a shirt market at Rs 1200 when VAT of 13% is leaved.

Solution:

Here, Market price of a shirt (MP) = Rs. 1200

VAT Rate = 13%

$\therefore SP$ market price of a shirt (MP) = Selling price of shirt (SP)

$$\therefore SP_1 = \frac{SP(100 + VAT\%)}{100}$$

$$= \frac{\text{Rs } 1200 + (100 + 13)}{100} = \frac{\text{Rs } 1200 \times 113}{100} = \text{Rs. } 1356$$

$$\text{Selling price with VAT (SP}_1\text{)} = \text{Rs. } 1356$$

Model 9:

रु. 3000 को सामानमा 13% मूल्य अधिवृद्धि कर जोहदा आउने मूल्य रु. 3612 भन्दा कतिले कम छ ? How much Less is Rs 3612 then the value inclaling 13% VAT in Rs. 3000?

Solution:

$$\text{Here, VAT amount} = 13\% \text{ of Rs. } 3000 = \frac{13}{100} \times \text{Rs. } 3000 = \text{Rs. } 390$$

$$\text{Selling price with VAT (sp}_1\text{)} = \text{Rs. } 3000 + \text{Rs. } 39 = \text{Rs. } 390.$$

$$\text{Selling price with VAT} = (\text{sp}) = \text{Rs } 3000 + \text{Rs. } 390 = \text{Rs. } 3390.$$

$$\text{difference amount} = \text{Rs. } 3612 - \text{Rs. } 3390 = \text{Rs. } 222.$$

Model 10:

एउटा वस्तुको मूल्य अभिवृद्धि कर सहितको मूल्य रु. 5763 छ भने मूल्य अभिवृद्धि कर रकम कति होला ? पत्ता लगाउनुहोस्।
The price of an object with 13% Value added tax is Rs. 5763. What will be the value added tax amount ? Find it.

Solution: Here Let the selling price without VAT be x.

VAT Rate = 13% Selling price with VAT (sp_1) = Rs. 5763

$$\therefore sp_1 = sp + \text{VAT\% of } sp$$

$$\text{or, } Rs. 5763 = x + 13\% \text{ of } x$$

$$\text{or, } Rs. 5763 = x + \frac{13}{100} \times x$$

$$\text{or, } Rs. 5763 = \frac{113x}{100}$$

$$\text{or, } x = \frac{Rs. 5763 \times 100}{113}$$

$$\text{or, } x = Rs. 5100$$

Selling price without VAT (sp) = Rs. 5100

$$\text{VAT amount} = SP_1 - Sp = Rs. 5763 - Rs. 5100 = Rs. 663.$$

Practice Yourself

- एउटा विजुलीको चिमको मूल्य रु 150 छ । एउटा व्यापारीले उक्त मूल्यमा 10% छुट दिई बेच्छ भने उसले यो चीम कतिमा बेच्छ ? पत्ता लगाउनुहोस् ।
The cost of an electric bulb is Rs 150. If a shop keeper sells the bulb by allowing 10% discount , find the actual selling price of the bulb.
(Ans: 135)
- गौरवले एउटा मोबाइल सेट 10% छुट पाएर रु 15750 मा किन्यो । उक्त मोबाइल सेट को मूल्य छुट भन्दा अगाडी कति थियो पत्ता लगाउनु होस् ।
Gaurav bought a mobile set for Rs 15750 after allowing 10% discount. Find the price of the mobile set before the discount.
(Ans: Rs 17500)
- रु 150 पर्ने एउटा खेलौनामा कति प्रतिशत छुट दिइएमा क्रेता ले सो वस्तु रु 130 मा किन्न पाँजद ? पत्ता लगाउनुहोस् ।
What percent of discount should be given in a doll costing Rs 150. So That a customer can purchases at Rs 130? Find it.
(Ans: $13\frac{1}{3}\%$)
- अंकित मूल्य रु 3000 भएको कमिजलाई 13% VAT लगाउदा जम्मा विक्रय मूल्य कति हुन्छ ।
Find the total selling price of a shirt marked at Rs 3000, when 13% VAT is levied? (Ans: 3390)
- एउटा सामानको मूल्य 13% VAT सहित रु.1356 पर्दछ । उक्त सामानको VAT वाहेकको मूल्य कति होला ? निकाल्नुहोस् ।
The price of an article with 13% VAT is Rs 1356. Find the price of the article excluding VAT.
(Ans: Rs 1200)
- रु 2000 छुट पछि एउटा सामानको रु 4000 मा खरिद गरियो भने कति प्रतिशत छुट रहेछ । पत्ता लगाउनुहोस् ।
A buyer bought an article for Rs 4000 after, the discount of Rs 2000, how much discount percent? Find it.
(Ans: $33\frac{1}{3}\%$)
- रु 1200 मा किनिएको सामानलाई अंकित मूल्य कति कायम गर्दा रु 300 छुट दिएर बेच्छ पनि 10% नाफा हुन्छ ?
An article bought for Rs 1200, At what marked price should be it was sold to profit 10% after Rs 300 discount.
(Ans: 1620)
- एउटा TV सेट लाई VAT वाहेक रु 32000 र VAT सहितको मूल्य रु 36000 पर्दछ भने VAT प्रतिशत पत्ता लगाउनुहोस् ।

A TV set costs Rs 32000 without VAT and Rs 36000 including VAT. Find out the VAT percent.

(Ans: $12\frac{1}{2}\%$)

9. रु 5000 मा 13% VAT जोड़दा रकम रु 5500 भन्दा कति रकमले बढि हुन्छ ?

How much more is Rs 5000 including 13% VAT on it than Rs 5500?

(Ans: 150)

10. एउटा सामान 40% नापा हुने गरी अंकित मूल्य निर्धारण गरयो । उक्त सामानमा रु 700 छुट दिए रु 700 नापा हुन्छ भने क्यमूल्य कति होता ।

A man fixed marked price of an article to make 40% profit allowing Rs 700 discount on it then was profit of Rs 700, find the cost price.

(Ans: 3500)

Long Questions

Model 1

एउटा सामानको अंकित मूल्यमा 10% छुट दिएर 13% VAT लगाउदा सो सामानको मूल्य रु 2034 हुन आउद्ध भने सो सामानको अंकित मूल्य पत्ता लगाउनुहोस् ।

The price of an article including 13% VAT after giving 10% discount on its marked price in Rs 2034, find the marked price of the article.

Solution:

Here Let the marked price of an article be x discount percent ($d\%$) = 10%

$$SP = \frac{MP(100 - d\%)}{100} = \frac{x(100 - 10)}{100} = \frac{90x}{100}$$

After 10% discount actual selling price

$$(SP) = \frac{90x}{100}$$

VAT Rate = 13%

Selling price including VAT (SP_1) = Rs 2034

$$\therefore SP_1 = \frac{SP(100 + VAT\%)}{100}$$

$$\text{or, } RS. 2034 = \frac{90x}{100}(100 + 13)$$

$$\text{or, } RS. 2034 = \frac{90x}{100}$$

$$\text{or, } RS. 2034 = \frac{90x \times 113}{100 \times 100}$$

$$\text{or, } RS. 2034 \times 10000 = 90x \times 113$$

$$\text{or, } x = \frac{RS2034 \times 10000}{90 \times 113}$$

$$\therefore x = RS. 2000$$

Marked price of article (MP) = Rs. 2000

Model 2

कुनै एउटा वस्तुको अंकित मूल्यमा 25% छुट दिई आउने रकम 13% VAT लगाउदा सो वस्तुको मूल्य रु 3390 कायम हुन्छ भने छुट रकम पत्ता लगाउनुहोस् ।

A discount of 25% was allowed on the marked price of an article and 13% VAT was levied on the remaining amount then the cost of article would Rs 3390. Find the amount of the discount.

Solution:

Here, Let the marked price (MP) of an article be x
discount percent ($d\%$) = 25%

$$\therefore SP = \frac{MP(100 - d\%)}{100} = \frac{x(100 - 25)}{100} = \frac{75x}{100}$$

After 25% discount selling price (SP) = $\frac{75x}{100}$

VAT Rate = 13%

Selling price including VAT (SP1) = Rs 3390

$$\text{Now } SP_1 = \frac{SP(100 + \text{VAT}\%)}{100}$$

$$\frac{75x}{100}(100 + 13)$$

$$\text{or, } \text{Rs. } 3390 = \frac{75x}{100}$$

$$\text{or, } \text{Rs. } 3390 = \frac{75x \times 113}{100 \times 100}$$

$$\text{or, } \text{Rs. } 3390 \times 10000 = 75x \times 113$$

$$\text{or, } x = \frac{\text{Rs. } 3390 \times 10000}{75 \times 113}$$

$$\therefore x = \text{Rs. } 4000$$

$$\text{discount amount} = \frac{25 \times 4000}{100} = \text{Rs. } 1000$$

Model 3

एउटा वस्तुको अंकित मूल्यमा 20% छुट दिई 13% VAT लगाउँदा सो वस्तुको मूल्य रु 16272 कायम भएको थियो भने कति रु 16272 कायम भएको थियो भने कति रकम VAT लगाइएको थियो ।

After allowing 20% discount on the marked price of an article and 13% VAT was levied on it. The price of the article was fixed to Rs 16272, what was amount of VAT levied.

Solution: Let the marked price (MP) of an article be x discount percent (d%) = 20%

$$\therefore SP = \frac{MP(100 - d\%)}{100} = \frac{x \times (100 \times 20)}{100} = \frac{80x}{100}$$

After 20% discount actual selling of an articles

$$(SP) = \frac{80x}{100}$$

VAT Rate = 13%

Selling price including VAT (SP1) = RS 16272

$$\text{or, } \text{Rs. } 16272 = \frac{\frac{80x}{100} \times (100 + 13)}{100}$$

$$\text{or, } \text{Rs. } 16272 = \frac{80x \times 113}{100 \times 100}$$

$$\text{or, } 16272 \times 10000 = 80x \times 113$$

$$\text{or, } x = \frac{\text{Rs. } 16272 \times 10000}{80 \times 113}$$

$$\text{or, } x = \frac{16272 \times 10000}{9040}$$

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

Marked price of article (MP) = Rs. 18000

$$\text{Actual selling price (SP)} = \frac{80x}{100} = \frac{80 \times \text{Rs. } 18000}{100} = \text{Rs. } 14400$$

$$\text{VAT amount} = \frac{SP \times \text{VAT}}{100} = \frac{14400 \times 13}{100} \text{ Rs. } 1872$$

Model 4

एउटा पर्यटकले 15% छुटमा नेपाली झण्डा किन्दछ, तर उसले 10% VAT पनि तिर्छ । यदि उनले तिरेको VAT रकम रु 170 छ भन,

- (i) झण्डाको अंकित मूल्य कति होला ? पत्ता लगाउनुहोस् ।
- (ii) झण्डा किन्दा उसले तिरेको रकम निकाल्नुहोस् ।

A tourist buys a Nepalese flag at a discount of 15% but pays 10% VAT. If he pays Rs 170 for VAT find.

- (i) marked price of the flag
- (ii) Amount he paid for the flag while paying .

Solution: Let the marked price of flag be x discount percent ($d\%$) = 15%

$$\therefore SP = \frac{MP(100 - d\%)}{100} = \frac{x \times (100 - 15)}{100} = \frac{85x}{100}$$

After 15% discount

$$\text{actual price of article (SP)} = \frac{85x}{100}$$

VAT Rate = 10%

VAT amount = R 170

$$\therefore \text{Rs } 170 = \frac{\frac{80x}{100} \times 15}{100}$$

$$\text{Rs. } 170 = \frac{80x \times 15}{100 \times 100}$$

$$\text{or, } \text{Rs. } 170 \times 10,000 = 80x \times 50$$

$$\text{or, } x = \frac{\text{Rs } 1700 \times 10000}{80 \times 50}$$

$$\therefore x = \text{Rs } 4250$$

\therefore The marked price of the flag (MP) = Rs 4250

$$\text{Selling price without VAT (SP)} = \frac{85x}{100} = \frac{85 \times \text{Rs } 4250}{100} = \text{Rs. } 3612.50$$

$$\text{Selling price with VAT (SP}_1\text{)} = \text{Rs. } 3612.50 + 170 = \text{Rs. } 3782.50$$

Model 5

एउटा सामानको अंकितमूल्य रु 2200 छ । यदि सो सामानमा केहि प्रतिशत छुट दिई 13% VAT लगाएर रु 2063.38 मा बेचिन्छ भने छुट प्रतिशत पत्ता लगाउनुहोस् ।

The marked price of an article is Rs 2200 after allowing a certain percent of discount with 13% VAT hevied the artrcle is sold at Rs 2063.38. find the discount percent.

Soltuion: The marked price of article (MP) = Rs 2200

Let the selling price with out VAT (SP) = x

Then VAT Rate = 13%

Selling price with VAT (SP)₁ = Rs 2063.38

$$\therefore SP_1 = \frac{SP(100 + VAT\%)}{100}$$

$$\text{or, } \text{Rs. } 2063.38 = \frac{x \times 113}{100}$$

$$\text{or, } x = \frac{\text{Rs } 2063.38 \times 100}{113}$$

$$\therefore x = \text{Rs. } 1826$$

\therefore The price of article (SP)= Rs. 1826

$$\text{Discount amount} = MP - SP = \text{Rs. } 2200 - \text{Rs. } 1826 = \text{Rs. } 374$$

$$\begin{aligned}\text{Discount \%} &= \frac{\text{discount amount} \times 100\%}{\text{MP}} \\ &= \frac{\text{Rs } 374 \times 100}{\text{Rs } 2200} \\ &= 17\% \\ \text{discount percent (D\%)} &= 17\%\end{aligned}$$

Model 6

एउटा वस्तुको अंकित मूल्य ₹ 2400 छ र यसमा पसलले 20% छुट दिएर VAT लगाउदछ । यदि उपभोक्ताले ₹ 2208 तिर्छ भने VAT दर पत्ता लगाउनुहोस् ।

The marked price of an article of Rs 2400 and the shopkeeper levied the VAT after allowing 20% discount if a customer pays it Rs 2034 what percentage of VAT was charged.

Solution:

Here, The marked price of an article (MP) = Rs 2400

discount percent (d%) = 20%

$$\begin{aligned}SP &= \frac{MP(100-d\%)}{100} = \frac{Rs. 2400 \times (100-20)}{100} = Rs. \frac{2400 \times 80}{100} \\ &= Rs. 1920\end{aligned}$$

After 20% discount selling price (SP) = Rs. 1920

Selling price including VAT (SP1) = Rs. 2208

$$VAT = (SP_1) - SP = Rs. 2208 - Rs. 1920 (SP) = Rs. 288$$

$$VAT \% = \frac{VAT \text{ amount} \times 100\%}{SP} = \frac{Rs. 288 \times 100\%}{Rs. 1920} = 15\%$$

$$\therefore VAT \text{ percent} = 15\%$$

Model 7

आचार्य सप्लाईशले एउटा मेशिन 13% VAT बाहेक ₹ 200000 मा राम सप्लाईशलाई विक्री गर्दै राम सप्लाईशले उक्त मेशिनलाई ₹ 4000 ढुवानी खर्च ₹ 3000 स्थानीय कर ₹ Rs. 5000 नाफा सहित उपभोक्तालाई विक्री गर्यो । अब उपभोक्ताले 13% VAT तिर्दा किंतु रकम किंतु रकम तिर्नुपर्ला र VAT सहित उपभोक्ता मूल्य पत्ता लगाउनुहोस् ।

Acharya suppliers sold a machine at Rs 20,0000 without 13% VAT to Ram suppliers Ram suppliers sold the machine including Rs 4000 froms as Rs 3000 local tax and Rs 5000 profit to consumer. If consumer pays 13% VAT how much pays VAT amount by consumer and find the final price for the consumer.

Solution:

Here,

For Acharya suppliers:

cost price of machine (CP) = Rs 2,00,000

VAT Rate = 13%

Selling price with VAT (SP1) = Rs 200000 + 13% of Rs 2,00,000

$$= Rs. 200000 + \frac{13}{100} \times Rs. 200000 = Rs. 200,000 + Rs. 26000 = Rs. 2,26000$$

For Ram suppliers

cost price of machine (CP) = Rs 2,26,000

transportation charge = Rs 4000

local tax = Rs 3000 profit amount = Rs 5000

VAT applicable amount = Rs 2,26,000 + Rs. 4000 + Rs. 30000 + Rs. 5000 = Rs. 238000

VAT amount = 13% of Rs. 238000

$$= \frac{13}{100} \times Rs. 238000 = Rs. 30940$$

Customer pays with VAT% = Rs. 2,38000 + Rs. 30940 = Rs. 268940

Practice Yourself

1. एउटा साइकलको मूल्य रु 3000 छ । साइकलमा 10% छुट दिई 13% VAT लगाउँदा साइकललाई ग्राहकले कति तिर्नुपर्ला ?
 The marked price of a cycle is Rs 3000, How much should be an consumer pay if 10% discount and 13% VAT is allowed?
 (Ans: 3051)
2. एउटा वस्तुको मूल्यमा 15% छुट गरी हुन आउने रकममा 13% VAT लगाउदा सो वस्तुको मूल्य रु 13447 हुन आयो भने उक्त वस्तुको मूल्य पत्ता लगाउनुहोस् ।
 After allowing 15% discount on the price of an article and 13% VAT added was levied the remaining amount then the price of the article becomes Rs 13447. Find the marked price.
 (Ans: Rs 14000)
3. एउटा मेशिनको अंकित मूल्यमा 18% छुट दिई 13% VAT लगाइएको थियो । यदि सो मेशिनको रु 18532 मा बेचिएको थियो भने मेशिनको अंकित मूल्य र छुट रकम कति हुन्छ निकाल्नुहोस् ।
 After allowing 18% discount on the marked price of a machine 13% VAT was levied on it. Find the marked price of the machine and discount amount.
 (Ans: Rs 20,000, Rs 3600)
4. एउटा वस्तुको अंकित मूल्यमा 16% छुट गरी 13% VAT लगाउदा सो वस्तुको मूल्य रु 9492 हुन्छ भने VAT रकम पत्ता लगाउनुहोस् ।
 After allowing 16% discount on the marked price of an article and 13% VAT then the price of the article becomes on Rs 9492. Find the VAT amount.
 (Ans: Rs 1092)
5. एकजना पर्यटकले अंकितमूल्यमा 15% छुट दिई 5% VAT तिरेर एउटा वस्तु किनेछ । यदि उसले VAT बराबरको मूल्य रु 850 तिर्छ भने उक्त वस्तुको अंकित मूल्य र VAT सहित विक्रम मूल्य पत्ता लगाउनुहोस् ।
 A tourist buys an article at 15% discount on the marked price that he pays 5% VAT. If the VAT amount to Rs 850, find the marked price and selling price including the VAT.
 (Ans: Rs 20,000 17850)
6. एउटा सामानको अंकितमूल्य रु 4000 छ । यदि 13% VAT पछिको मूल्य रु 3616 भए एक्त सामानमा दिईएको छुट प्रतिशत निकाल्नुहोस् ।
 The marked price of an article is Rs 4000 of the price of the article including 13% VAT is Rs 3616, find the discount percent given init.
 (Ans: 20%)
7. एउटा साइकलको अंकित मूल्यमा 25% छुट दिई सो रकममा 10% VAT जोडेर बेचियो । यदि छुट रकम Rs 750 थियो भने सो साइकलमा कति रकम VAT लगाइएको थियो ।
 After allowing 25% discount on the marked price and then levying 10% VAT a cycle is sold if the discount amount was Rs 750 how much VAT was levied on the price of cycle.
 (Ans: Rs 225)
8. एउटा व्यापारीले कुनै सामान रु 10,000 मा किन्नो र सो वस्तुको अंकित मूल्य क्रय मूल्य भन्दा 20% पछि राखिएको थियो । तर बेच्दा 15% छुट दिई 13% VAT लगाउँदा सो वस्तुको मूल्य कति पर्छ ?
 A shopkeeper buys an article at Rs 10,000 and keeps marked 20% above the cost price while selling he given 15% discount and adds 13% VAT to consumer. Find the price of the consumer buys for that article.
 (Ans: Rs 11,26)
9. 10% VAT सहित दीपाले एउटा वस्तु ममितालाई रु 440 मा बेचिन VAT वाहेक त्यहि वस्तु ममिताले यन्दिरालाई रु 500 मा बेचिन । VAT सहित ममिताले कति पाउँछिन रु उनले बुझाउन पर्ने र कुल नाफा प्रतिशत कति हुन्छ ? Dipa sells an article to mamita at Rs 440 including VAT of 10% mamita sells the same article to Indira at Rs 599 excluding VAT. How much does mamita get with VAT? How much VAT mamita pay and what is her profit.
 (Ans: Rs 550, Rs 10, Rs 100)
10. एकजना विदेशीले केहि निश्चित सामानहरू किनेछ । 10% छुटमा सामान किन्ता 13% VAT सहित रु 5085 तिरेछ भने उसले नेपाल छाड्दा कति रकम फिर्ता पाउछ रु छुट रकम पनि पत्ता लगाउनुहोस् ।

- A for eigener buys some goods. After allowing a discount 10% and then adding 13%. VAT he pays Rs 5085. How much does he get back while leaving Nepal? Also find the discount amount.
 (Ans: 585, 38L)
11. एकजना खुद्रा विकेताले केहि निश्चित नाफामा अंकित मूल्य निर्धारण गर्दछ । तब 20% छुट दिएर बेच्दा 12% नाफा हुन्छ । यदि 13% VAT सहित ₹ 5062.40 विक्री गरियो भने अंकित मूल्य क्यमुल्य भन्दा कति प्रतिशत बढि रहेछ ?
 A retailer marked price of ariatch acertain percent above cost price then he allowed 20%discount to make 12% profit. If the watch sold for Rs 5062.40 with 13%. VAT by what percent is the marked price above the cost price.
 (Ans: 40%)

2.2 मूल्य विनिमय (Money Exchange)

श्रृखला नियम (Chain Rule)

यदि $a = b, b = c \text{ र } c = x$ भए,

$$\therefore a \times b \times c = b \times c \times x$$

$$x = a$$

If $a = b$

$b = c$ and $c = x$ Then, $a \times b \times c = b \times c \times x$

$$\therefore x = a.$$

नियमहरू (Rules):-

- दिइएका राशीहरूलाई बीचमा = चिनहले प्रयोग गरी जोड्ने र दुई लहरलाई श्रृखला रूपमा राख्ने
 (Arrange the given variable in two columns making the chain of variable and putting = sign in between)
- मान पता लगाउनु पर्ने राशीलाई x ले जनाउने (Suppose x for the variable where value is to be found.)
- बायाँ पक्ष र दाया पक्षको गुणफल समीकरण निर्माण गरी हल गर्ने ।
 (Product of LHS and RHS by constructing equation solve it)

Very Short Questions

Model 1

नेपाली रुपैया 160 = भारती रुपैया 100 हुन्छ भने भारतीय रुपैया 500 को कति रुपैया नेपाली हुन्छ ।

If the Nepali rupees 160 = Indian rupees 100. Then find the Nepali rupees equal to Indian rupees 500.

Solution:

Here, Indian rupees 100 = Nepali rupees 160

Nepali rupees x = Indian rupees 500

Using chain rule

$$100 \times x = 160 \times 500$$

$$\text{or, } x = \frac{160 \times 500}{100}$$

$$\text{or, } x = 800$$

$$\therefore \text{Indian rupees } 500 = \text{Nepali rupees } 800$$

Model 2

यदि US \$ 1 = Rs 110, भए US \$ 500 बराबर रुपैयामा रुपान्तर गर्नुहोस् ।

If US \$ 1 = Rs 110, then convert US \$ 500 in to rupees.

Solution:

Here, US \$ 1 = Rs. 110x = US \$ 500

Using chain rule

$$\text{or, } \$ 1 \times x = \text{Rs } 110x = \$ 500$$

$$\therefore x = \text{Rs } 55000 \text{ US } \$ 500 = \text{Rs. } 55000$$

Model 3:

यदि £ 1 = 155.63 भए रु 81000 बराबर कति £ हुन्छ ।

If £ 1 = Rs 155.63. How much £ will be Rs 81000.

Solution:

Here, £ 1 = Rs 155.63

Rs 81000 = £ x (suppose)*

Using chain rule

or, £ 1 × Rs 81000 = Rs 155.63 × £ x

$$\text{or, } x = \frac{81000}{155.63}$$

$$\therefore x = \text{£} 520.47$$

Nepali rupees 81000 = £ 520.47

Model 4

यदि 10 जापनीज ऐन = रु 8.70 भए जापनीज ऐन 6840 को कति रूपैया हुन्छ ।

If 10 Japanese yen = Rs 8.70. How much Nepali rupees 6840 of Japanese Yen.

Solution:

Here, 10 Japanese yen = Rs 8.70

x = Japanese Yen 6840

Using Chian rule

or, 10 Yen × x = Rs 8.70 × Yen 6840

$$\text{or, } x = \frac{\text{Rs } 8.70 \times 6840}{10} = \text{Rs } 5950.8$$

∴ Japanese Yen 6840 = Rs. 5950.80

Model 5

यदि £ 1 = 3 swiss France, भए 24 swiss France बराबर कति पाउण्ड साटन सकिन्छ ।

If £ 1 = 3 swiss France, then how many pounds can be exchange with exchange 24 swiss France.

Solution:

Here, 3 swiss France = £ 1

Using the chain rule

∴ 3 swiss × x = £ 1 × 24 swiss

$$\text{or, } x = \frac{\text{£ } 1 \times 24}{3}$$

$$\text{or, } x = \text{£ } 8$$

$$\therefore x = \text{£ } 8$$

∴ 24 swiss France = £ 8

Practice Yourself

- यदि \$ 1 = N Rs. 105 भए N Rs. 76125 बराबर कति dollar सौटन सकिन्छ ।
If \$ 1 = N Rs. 105 how much dollar exchange Rs 76125 ? (Ans: £ 725)
- यदि £ 1 = N Rs. 131 भए £ 900 बराबर कति N Rs हुन्छ ।
If £ 1 = N R. 131, How much N Rs of £ 900 (Ans: Rs 17000)
- यदि AUD \$ 1 = N Rs. 82.00 भए AUD \$ 12000 मा कति N Rs हुन्छ ।
If AUD \$ 1 = N Rs. 82.00 then , How much N Rs of AUD \$ 12000. (Ans: Rs 984000)
- यदि EURO E 1 = N Rs. 118 भए N Rs 345000 मा कति EURO सौटन सकिन्छ ?
If EURO E 1 = N Rs. 118, How much Euro can be exchange with exchange of N Rs. 345000.
(Ans: EURO E 2923.72)

5. यदि CAD 1 dollar = N Rs. 118 भए N Rs 400000 मा कति CAD dollar साँटन सकिन्छ ?
 If CAD 1 dollar = N Rs. 80.00 then, how much exchange CAD dollar can be exchanged with N
 Rs. 4,00,000.
 (Ans: CAD \$ 5000)

Short Questions

Model 1

यदि US dollar £ = pound £ 3.5 र Rs 220 = US \$ 3 भए N Rs 4400 बराबर कति pound हुन्छ ?
 If US dollars \$ 6 = pound (£) 3.5 and N Rs 220 = \$ 3, how many pounds will be equal to Rs 4400
Solution:

Here,

$$\text{Pound (£)} 3.5 = \text{US \$} 6$$

$$\text{US (\$)} 3 = \text{N Rs} 220$$

$$\text{N Rs} 4400 = \text{Pound (£)} \times (\text{Suppose})$$

Using chain rule

$$\text{£} 3.5 \times \$ 3 \times \text{N Rs} 4400 = \$ 6 \times \text{N Rs} 220 \times x$$

$$\text{or, } x = \text{Pound (£)} \frac{3.5 \times 3 \times 4400}{6 \times 220}$$

$$\therefore x = \text{£} 35$$

$$\therefore \text{N Rs} 4400 = \text{Pound (£)} 35$$

Model 2

यदि £ 7 = \$2 = Rs 213 भए ? 1,17150 मा कति पाउण्ड साँटन सकिन्छ ?

If £ 7 = \$11 and \$2 = Rs 213 how many pounds can be exchanged for Rs 1,17150 ?

Let the required pounds be x

Solution:

Let the required pounds be x

By using chain rule we have

$$\text{Rs} 1,17150 = \text{£} x$$

$$\$ 2 = \text{Rs} 213$$

$$\therefore \text{Rs} 1,17150 \times \text{£} 7 \times \$ 2 = \text{£} x \times \$ 11 \times \text{Rs.} 213$$

$$\text{or, } x = \text{£} \frac{1,17150 \times 7 \times 2}{11 \times 213}$$

$$\therefore x = \text{£} 700$$

Hence, the required amount of pounds is £ 700

Model 3

यदि मुदै विनियममा 0.5% कमिशन लाग्छ भने दुरी 3200 मा कति रुपैया साँटन सकिन्छ ?

If the money exchanger charges a 0.5% commission find the Nepal rupees required to exchange 3200 with 1 euro = Rs 140.44

Solution:

Here, 1 Euro = Rs. 140.44

$$3200 \text{ euro} = \text{Rs.} 140.44$$

$$= \text{Rs.} 449408$$

Exchanger's commission = 0.5% of Rs 449408

$$= \text{Rs.} \frac{0.5}{100} \times 449408$$

$$= \text{Rs.} 2247.04$$

Required Nepali rupee = Rs. 449408 + Rs 2247.04

$$= \text{Rs.} 451655.04$$

Model 4

यदि रु 100 IC = रु 160 (NC) युरो = रु. 95 (NC) रु 9500 (IC) बराबर कति युरो हुन्छ ?

If Rs 100 (IC) = Rs. 160 (NC) and 1 euro = Rs.95 (NC) how many Euro will be equal to Rs 9500 IC ?

Solution:

Let Rs. 9500 (IC) be equal to x euro

Then, x Euro = Rs. 9500 (IC)

Rs 100 (IC) = Rs 160 (NC)

Rs 95(NC) = 1 Euro

By chain rule, we have

$$x \text{ euro} \times \text{Rs } 100 \text{ IC} \times \text{Rs. } 95(\text{NC}) = \text{Rs. } 9500 \text{ (IC)} \times \text{Rs. } 160 \text{ (NC)} \times 1 \text{ Euro}$$

$$x = \text{Euro} \frac{160 \times 9500 \times 1}{100 \times 95}$$

$$\therefore x = \text{Euro } 100$$

$$\therefore \text{Hence Rs. } 9500 \text{ (IC)} = 160 \text{ Euro}$$

Model 5

यदि 10 जापनीय योग = ने. रु. 628 छ भने जापानीज येत 35800 लाई नेपाली रुपैयामा रूपान्तरण गर्नुहोस् ।

If 10 jpanes yen = NC Rs 628 then convert japans yen 35800 into Nepali rupees.

Solution: Here, Let the required Nepali rupees be x 10 jpanes yen = NC Rs 6.28

$$\text{NC Rs } x = \text{japans yen } 35800$$

By chain rule

$$10 \text{ jpanes uex } x \text{ NC Rs } x = \text{NC Rs } 6.28 \times 35800$$

$$\therefore x = \text{Rs} \frac{6.28 \times 35800}{10} = \text{Rs } 2248.40$$

$$35800 \text{ jpanes yen} = \text{Rs } 2248.40.$$

Model 6

यदि £ 15 = \$ 20 र \$ 5 = Rs300 भए रु 31200 ले कति पाउण्ड साट्न सकिन्छ ?

If £ 15 = \$ 20 and \$ 5 = Rs300 hoe many pound can be exchanged for Rs 31200?

Solution:

Here, let the required pound be x

$$\text{Now, £ } 15 = \$ 20$$

$$\$ 5 = \text{Rs}300$$

$$\text{Rs } 31200 = \text{£ } x$$

By chain rule

$$\text{£ } 15 \times \$ 5 \times \text{Rs } 31200 = \$ 20 \times \text{Rs } 300 \times \text{£ } x$$

$$\text{or, } x = \text{£} \frac{15 \times 5 \times 31200}{20 \times 200}$$

$$\therefore x = \text{£ } 300$$

Hence, £ 300 can be exchanged for Rs 31200.

Model 7

एउटा दूयाङ्कीलाई जलप लगाउन रु 4030 लाग्दछ । यदि £ 1 = Rs 132 र £ 31 = \$ 65 विनिमयदर छ भने उक्त दूयाङ्कीलाई जलप लगाउन जम्मा कति खर्च \$ लाग्दछ ?

Find the cost to galvanize a tank if us dollar given that the exchange rate £ 1 = Rs 132 £ 31 = \$ 65 if the cost is Rs 4030.

Solution:

Here, let the total cost Us dollar be x £ 1 = Rs 132

$$\$65 = 31$$

$$\text{Rs. } 4030 = \$x$$

$$\therefore \text{£ } 1 \times \$65 \times \text{Rs. } 4030 = \text{Rs. } 132 \times \text{£ } 31 \times \$x$$

$$\text{or, } \$ = \frac{1 \times 65 \times 4030}{132 \times 31}$$

$$\text{or, } x = \frac{261950}{4092} = 64.01$$

Model 8

अमेरिका उच्चशिक्षा अध्ययन गर्न जानको लागि सोहनलाई \$3500 चाहिएको छ । यदि \$1. ने.रु. 10 छ र बैंकले यसको 2% कमिशन लिने गर्दछ भने सोहनलाई कति नेपाली रूपैयाँ आवश्यकता पर्दछ ? पत्ता लगाउनहोस्।

Shohan needs \$3500 for the higher study in America . If \$1 = NRs. 105 and the bank charge 2% commission how much Nepali rupees does the Shohan require ? Find it.

Solution: Here, \$ 1 = Rs. 105

$$\$ 2300 = \text{Rs. } 105 \times 3500$$

According to the questions,

$$\therefore \$ 3500 = 2\% \text{ of } \text{Rs. } 367500 + \text{Rs. } 367500 = \frac{2}{100} \times \text{Rs. } 367500 + \text{Rs. } 367500$$

$$= \text{Rs. } 7350 + \text{Rs. } 367500 = \text{Rs. } 374850$$

$$\therefore \$3500 = \text{NRs. } 374850.$$

Model 9

नेपाल राष्ट्र बैंकको मुद्रा विनीमयदर अनुसार खरिदार \$1 = \text{Rs. } 103.72^* \text{ र विक्रि दर } \\$1 = \text{Rs. } 104.32 \text{ छन् भने}

According to the many exchanger ratio of Nepal Rastra Bank, the purchasing \$ 1 = Rs. 103.72 and selling rate \$1 = 104.32 then

(i) नेपाली रु. 57378 सित कति अमेरिकी डलर साटन सकिन्छ ? पत्ता लगाउनहोस्।

How many America dollar can be exchanged with Rs. 573767 find it.

(ii) \$ 500 सित कति नेपाली रूपैया साटन सकिन्छ ?

Solution, Here According to the money exchange of Nepal Rastra Bank by selling Rate \$1 = Rs. 104.32

$$\text{NRs. } 57378 = \frac{\text{Rs. } 57378}{104.32} = \$ 550$$

We can exchange NRs 57378 = \$550

$$\text{Again } \$1 = \text{Rs. } 103.7, \$ 500 = \text{Rs. } 103.72 \times 500 = \text{Rs. } \frac{5}{860}$$

We can exchange \$500 = Rs. 51860

Model 10

अमेरिकी \$= Rs. 105 दिइएको छ । यदि सो दरमा नेपाली मुद्रा 10% ले अवमूल्यन भयो भने नेपाली रु. 173250 लिन कति अमेरिकी डलर साटन सकिन्छ ? निकालनुहोस्।

It is given that 1 = NRs. 105 if the Nepal Currency is devaluated by 1070 at this rate. How many American dollar can be exchanged with Rs. 173250 ? Find it.

Solution: Here, \$ 1 = Rs. 105 = NRs + 10 % of Rs. 105 = NRs $105 + \frac{10}{100} \times \text{Rs. } 105$

$$= \text{NRs. } 105 + \text{Rs. } 10.5 = \text{NRs. } 115.50$$

$$\text{Now, NRs. } 1 = \$ \frac{1}{115.50}$$

$$\text{NRs. } 173200 = \$ \frac{1}{115.560} \times 1732250 = \$ 1500.$$

Practice Yourself

1. यदि N Rs. 126 = £ 1 pound, 10 pound = 125 France भए N Rs 6300 को किति France हुन्छ ?
If N Rs. 126 = pound £ 1. pounds (£) 10 = 125 France how many France are equivalent to N Rs. 6300.
(Ans: 624 France)
2. US (\$) 5 = pound (£) 4 र N Rs 225 = \$ 3 भए N Rs 564 बराबर किति pounds हुन्छ ?
If \$ 5 = £ 4 and N Rs 225 = \$ 3 how many pounds (£) will be equal to N Rs 5625.
(Ans: £ 60)
3. US (\$) 176 = 100 pounds ₹ 1 pounds = N Rs 119 भए N Rs 8925 को किति dollar होला ?
Given that US (\$) 176 100 pounds and £ 1 = N Rs 119 find the dollars for N Rs 8925. (Ans: \$ 125)
4. यदि 10 जापानीज ऐन = ने ₹ 6.34 छ भने नेपाली रुपैया 22484.81 लाई जापानीज ऐनमा रुपान्तर गर्नुहोस् ।
If 10 Japanese Yen = N Rs 634 then convert N Rs 22484.81 into Japanese Yen.
(Ans: Japanese Yen 35465)
5. यदि IC 100 = N Rs 160 ₹ 1 dollars = N Rs 75 भए IC 75000 बराबर किति अमेरिकन dollars हुन्छ ?
If IC Rs 100 = N Rs 160 and 1 American dollars = N Rs 75 how much American dollars will be equal IC Rs 75000 ?
(Ans: \$ 600)
6. यदि N Rs 10,000 = 125 American dollars, 25 American dollars = 30 Euro, 10 Euro = 15 Singapur dollars 459 Singapur dollar लाई Nepali rupees रुपान्तर गर्नुहोस् ।
If N Rs 10,000 = 125 American dollars, 25 dollars = 30 Euro 10 Euro = 15 Singapur dollars, convert 450 Singapur dollars in Nepali rupees.
7. यदि US \$ 20 = pounds (£), pound (£) 10 = N Rs 1250 भए N Rs 187500 को किति US \$ हुन्छ ?
If US \$ 20 = pounds (£) 15, pounds (£) 10 = N Rs 1250 how many dollars \$ will be equal to N Rs 187500.
8. अस्ट्रेलिया जाई गरेको एकजना विद्यार्थीलाई 3000 अस्ट्रेलियन डलर आवश्यक पन्थ्यो । यदि 1 AUD = Rs 75 र वैडकलाई 2% कमिसन दिनुपर्छ । भने उसलाई किति नेपाली रुपैया आवश्यक पर्दछ ।
A student going to Australia need 3000 AD. If 1 AUD = NRs 75 and the bank charge 2% commission, how much Nepali ruppers does he need.
(And Rs 22,9500)
9. एउटा वैडकमा 1 Aud = NRs 80.20 खरिदार र 1 AuD = WRs 81.40 विक्रीदार छन् । यदि वैडकलाई किति अस्ट्रेलियन डलर किनेर वेच्दा NRs 6000 फाइदा होला ?
The buy rate 1 Aud = NRs 80.20 and selling dollar should be bought and sold by the bank to get M Rs 6000 profit.
10. यदि 10 dollar 4 pound सँग साठन सकिन्छ । 1 dollar ? 3.15 सँग साठन सकिन्छ भने ₹ 56.25 सँग किति रकम साठन सकिन्छ ?
If 5 dollar can be exchanged for 4 pounds and 3 dollar can be exchanged for Rs. 315, how many pounds can be exchanged for Rs 5625.

Long Questions

Model 1

अमेरिकी बजारबाट प्रति तोला डलर 525 मा किनिएको 20 तोला सुनलाई नेपाली बजारमा 20 % भन्सार शुल्क र 13 % VAT सहित विक्री गर्दा कम्तीमा बति रुपैया विक्री गर्नुपर्ला ।

20 tolla gold buying in American market at its rate of \$ 525 per tola will be sold in Neplai market adding 20 % custom charge and 13 % VAT. What will be the minimum selling price ? (\$1 = N Rs. 105.52)

Solution:

$$\text{Price of gold per tola} = \$ 525 = \text{N Rs } 525 \times 105.52 = \text{N Rs } 55398$$

$$20 \% \text{ Custom charge} = \frac{20}{100} \times \text{N Rs } 55398 = \text{N Rs } 11079.60$$

$$\text{Price of 20 \% with custom charge} = \text{N Rs } 11079.60 + 55398 = \text{N Rs } 66477.60$$

$$13 \% \text{ VAT of gold} = \frac{13}{100} \times \text{N Rs } 55398 = 7201.74$$

$$\text{Price of gold} = \text{Rs. } 55398 + \text{Rs. } 11079.60 + \text{Rs. } 7201.74 = \text{Rs. } 73679.34$$

$$\text{Price of 20 tola gold} = \text{Rs. } 73679.34 \times 20 = \text{Rs. } 147358.68$$

Model 2

नेपाली बजारमा ढाका टोपी रु 400 प्रति गोटा किनेर नियांत कर 5 % तिरेर 5000 ओटा विक्री गर्दा 150 % नाफा हुन्छ भने प्रत्येक टोपीको विक्री मूल्य कति पाउण्डस्टर्लिङ्ग हुन्छ ?

These is a profit of 150% when 5000 Dhaka Topi one sold in Britain after paying 5 % export Tax to the Dhaka Topi costing Rs 400 per cap in Neplai market. Find the selling price of each cap in pound (£ 1 = Rs 155.63 selling rate £ 1 = 153.51 buying rate.)

Solution:

Here, price of per cap = Rs. 400

$$5 \% \text{ export tax of per cap} = 5 \% \text{ of Rs } 400 = \frac{5}{100} \times \text{Rs } 400 = \text{Rs } 20$$

$$\text{Price of 5 \% export tax per cap} = \text{Rs. } 400 + \text{Rs. } 20 = \text{Rs. } 420$$

$$150 \% \text{ profit per cap} = \frac{150}{100} \times \text{Rs. } 420 = \text{Rs. } 630$$

$$\text{Now, price of per cap (SP)} = \text{Rs. } 630 + \text{Rs. } 420 = \text{Rs. } 1050$$

Pound (£) 1 = Rs 155.63 selling Rate

$$\text{Price of per cap (SP)} = \text{£} \frac{1050}{155.63} = \text{£} 6.75$$

Model 3

रमाले रु 50,000 मा केही जापनीज येन किनिन ? 5 दिन पछि जापानीज ऐनको तुलनामा नेपाली नेपाली मुद्रा 5 % ले अबमूल्यन भयो । उक्त दिनमा नेपाली रुपैया साँटन रमालाई कति नाफा वा नोक्सान हुन्छ ।

Rama bought some Japanese Yen of Rs 50,000 worth after 5 days Nepalese currency was devaluated by 5 % compayison to Japanese Yen. If Rama exchanged Japanese Yen to Nepali currency on the same day how much profit or loss did she get (10 Yen = Rs 8.82 selling Rate 50 Yen = Rs 8.77 Buying rate).

Solution:

Here,

Total amount Nepali = N Rs 50,000

According to the buying rate to Japanese Yen = N Rs 8.77

$$\text{Rs. } 50,000 = \text{Yen} \frac{10}{8.77} \times 50,000 = \text{Yen } 57012.54$$

After 5 days price of Nepali curren cy 5 % devaluated

$$10 \text{ Yen} = \text{N Rs } 8.77 + 5 \% \text{ of } 8.77 = \text{N Rs } 8.77 + 5 \% \text{ of } 8.77$$

$$= \text{N Rs } 8.77 + \frac{5}{100} \times 8.77 = \text{N Rs } 8.77 + 0.44 = \text{N Rs } 9.21$$

$$\therefore 10 \text{ Yen} = \text{N Rs } 9.21$$

$$\therefore 57012.54 \text{ Yen} = \frac{\text{N Rs } 9.21 \times 57012.54}{10} = \text{N Rs } 52508.55$$

$$\text{Profit amount} = \text{N Rs } 52508.55 - \text{N Rs } 50,000 = \text{N Rs } 2508.55$$

Practice Yourself

1. 500 ओटा नेपाली टोपीलाई रु 2,00000 मा नेपाली बजार मा किनेर 5 % नियात कर तिरेर UK मा वेच्दा 150 % नाफा भएको थियो । यदि £ 1 = N Rs 155.63 भए प्रति टोपी को मूल्य pound sterling मा पत्ता लगाउनुहोस् ।
500 Nepali caps bought for R s 200000 in Neplai market is sold in UK after paying 5 % export tax then 150% profit was made if £ 1 = N Rs 155.63. Find the selling price of each cap in pound sterling.
2. विनियम दर अनुसार US \$ 4750 किन्न पुग्ने नेपाली रूपैयाको 10 % अवमूल्यन पछि 3 % कमिशन समेत तिर्दा अवमूल्यन कर्ता (£किन्न सकिन्छ ।
According to foregin exchange rate how much pound sterling (£) can be bought by Nepali amount that can buy US \$ 4750 after 10 % devaluation and adding 3 % commission on Neplai rupees. £ 1 Rs 155.63 and US \$ = N Rs 105.52.
Ans: Rs 1436.47 pound)
3. श्यामले एउटा पुस्तक अनलाइन मार्फत किन्न चाहन्छ । उसले लण्डनमा सो किताब प्रकाशन बाट £15 मा किन्न पाउँछ । पुस्तक प्रकाशनले सितैमा यातायात उपलब्ध गराउँछ । त्याहि पुस्तकलाई New York को प्रकाशनले भने 2 % यातायात कर सहित \$17 मा उपलब्ध गराउने छ । अब उसले सो पुस्तक कुन प्रकाशन किन्छ होला ?
(£ 1 = NRs 132 and \$ 1 = N Rs 106.00)
Shayam wants to buy a book online, he finds a publisher in London selling book for £ 15. This publisher is of offering free transporotion on the producer he them finds the same book from a publisher in New York for \$ 17 with 2o % transportation fee, which publisher should he buy the book from (exchange rate £ 1 = N Rs 132, and \$ 1 = N Rs 106.00)
(Ans: London)
4. नेपाली एक जना व्यापारीले लण्डनमा £ 1000 को सामानहरू किन्नो । सामानहरूको मूल्य लाई NRs. मा पत्ता लगाउनुहोस् । जसमा विनियम दर अनुसार
$$\frac{1}{N} \text{Rs } 1.60 = IC \text{ Rs } 1 \text{ and } \frac{1}{E} 100 = IC \text{ Rs. } 10312$$

A Nepali trader by goods of £ 1000 at London. Find price of good in N Rs. Where are $\frac{1}{N} \text{Rs } 1.6 = IC \text{ Rs } ICRS 1$ $\frac{1}{E} 100 = IC \text{ Rs } 10312$.
(Ans: Rs 164992)
5. रामले केहि नेपाली सामानहरू रु 6000 को दरले किन्नो । यदि उसले 10% नियात कर तिरेर 100 वटा सामान 80% नाफामा USA मा वेच्यो भने उक्त सामानको मूल्य डलरमा निकालनुहोस् ।
Ram purcharged someNepali goods at Rs 600 each item. He paid 10% export tax and sold 100 items in the USA at 80% profit. Find the price of these items in US dollar (\$ 1 = Pσ 75).
(Ans: \$ 15840)