Book Name: Selina Concise

EXERCISE 1(A)

Solution 1:

Sale price of watch= Rs. 540

Rate of sales tax= 8%

Total amount paid by Rajat = Rs. 540 + 8% of Rs. 540

= Rs. 540 + $\frac{8}{100} \times 540$

= Rs. 540 + Rs. 43.20

= Rs. 583.20 Ans

Solution 2:

Sale price = Rs. 3,840

Sales tax paid = Rs. 345.60

∴ Rate of sales tax = $\frac{\text{sales tax}}{\text{sales price}} \times 100\%$

= $\frac{345.60}{3,840} \times 100\%$

= 9% Ans.

Solution 3:

Selling price of washing machine = Rs. 13,530

Rate of sales tax = 10%

∴ Cost Price = $\frac{\text{selling price} \times 100}{100 + \text{Rate of sales tax}}$

= $\frac{13530 \times 100}{100 + 10}$

= $\frac{1353000}{110}$

= Rs. 12,300

Solution 4:

Sale price of biscuits = Rs. 158

Rate of sales tax on biscuits = 6%

Amount paid for biscuits = Rs. 158 + 6% of Rs. 158

= Rs. 158 + $\frac{6}{100} \times 158$

= Rs. 158 + Rs. 9.48

= Rs. 167.48

Sale price of cosmetic goods = Rs. 354

Rate of sales tax = 9%

Amount paid for cosmetic goods = Rs. 354 + 9% of Rs. 354

= Rs. 35 + $\frac{9}{100}$ × 354

= Rs. 354 + Rs. 31.86

= Rs. 385.86

Total amount paid by Sarita = Rs. 167.48 + Rs. 385.86

= Rs. 553.34 Ans.

Solution 5:

Sale price of articles = Rs. 5,460

Rate of sales tax = 8%

Rate of central sales tax = 3%

Total amount paid by Hamid

= Rs. 5,460 + 8% of Rs. 5,460 + 3% of Rs. 5,460

= Rs. 5,460 + $\frac{8}{100}$ × 5,460 + $\frac{3}{100}$ × 5,460

= Rs. 5,460 + Rs. 436.80 + Rs. 163.80

= Rs. 6060.60 Ans

Solution 6:

Let the marked price of article A be Rs. x and article B be Rs. y.

The marked price of A and B together is Rs. 6,000.

⇒ x + y = 6,000 …….. (i)

The sales tax on article A is 8% and that on article B is 10%.

Also the total sales tax collected on selling both the articles is Rs. 552.

⇒ 8% of x + 10% of y = 552

⇒ 8x + 10 y = 55,200 …….. (ii)

Multiply equation (i) by 8 and subtract it from equation (ii) we get,

2 y = 7,200

⇒ y = 3,600

Substituting y = 3,600 in equation (i) we get,

x + 3,600 = 6,000

⇒ x = 2,400

The marked price of article A is Rs. 2,400 and article B is Rs. 3,600.

Solution 7:

(i) Let new sale price of coat = Rs. y

Rate of sales tax = 10%

Total amount paid= Rs3,600

According to question

Y + 10% of Y = Rs. 3,366

$\Rightarrow y + \frac{y}{10} =$ Rs. 3,366

$\Rightarrow \frac{11y}{10} =$ Rs. 3,366

$\Rightarrow y = \frac{3,366 \times 10}{11} =$ Rs. 3,060

Reduction needed in the price= Rs. 3,600 − Rs. 3,060 = Rs. 540 Ans.

(ii) Reduction % = $\frac{540 \times 100}{3600} = 15\%$

Solution 8:

(i) Total price paid for T.V. = Rs. 13,407

Rate of sales tax = 9%

Let sale price = Rs. y

According to question

Y + 9% of y = Rs. 13,407

$\Rightarrow y + \frac{9y}{100} =$ Rs. 13,407

$\Rightarrow \frac{109y}{100} =$ Rs. 13,407

$\Rightarrow y = \frac{13,407 \times 100}{109} =$ Rs. 12,300

If the sales is increased by 13% then 13% of 12300

= Rs. 12,300 + Rs. 1,599

= Rs. 13,899

More money paid = Rs. 13,899 – Rs. 13,407 = Rs. 492 Ans.

Solution 9:

Let sale price of article = Rs. y

Total price inclusive of sales tax = Rs.8,250

Rate of sales tax = 10%

According to question

Y + 10 % of y = Rs. 8,250

$\Rightarrow y + \dfrac{y}{100} = Rs.\,8,250$

$\Rightarrow \dfrac{11Y}{10} = Rs.\,8,250$

$\Rightarrow y = \dfrac{8,250 \times 10}{11} = Rs.\,7,500$

(i) New rate of sales tax = 15%

New total price = Rs. 7,500 + 15% of Rs. 7,500

= Rs. 7,500 + $\dfrac{15}{100} \times 7,500$

= Rs. 7,500 + Rs. 1,125 = Rs. 8,625

More money paid = Rs. 8,625 – Rs. 8,250 = Rs. 375 Ans.

(ii) New rate of sales tax = 6%

New total price= Rs. 7,500 + 6% of Rs. 7,500

= Rs. 7,500 + $\dfrac{6}{100} \times 7,500$

= Rs. 7,500 + Rs. 450 = Rs. 7,950

Less money paid = Rs. 8,250 – Rs. 7,950 = Rs. 300 Ans.

(iii) New rate of sales tax = (10 + 2)% = 12%

New total price = Rs. 7,500 + 12% of Rs. 7,500

= Rs. 7,500 + $\dfrac{12}{100} \times 7,500$

= Rs. 7,500 + Rs. 900 = Rs. 8,400

More money paid = Rs. 8,400 – Rs. 8,250 = Rs. 150 Ans.

(iv) New rate of sales tax = (10 − 3)% = 7%

New total price = Rs. 7,500 + 7% of Rs. 7,500

= Rs. 7,500 + $\dfrac{7}{100} \times 7,500$

= Rs. 7,500 + Rs. 525 = Rs. 8,025

Less money paid = Rs. 8,250 – Rs. 8,025 = Rs. 225 Ans.

Solution 10:

Price of bicycle inclusive of sales tax = Rs. 1,664

List price of bicycle = Rs. 1,600

(i) Sales tax = Rs. 1,664 – Rs. 1,600 = Rs. 64

$\therefore$ Rate of sales tax = $\dfrac{\text{sales tax}}{\text{sales price}} \times 100\% = \dfrac{64}{1,600} \times 100\% = 4\%$ Ans.

(ii) New rate of sales tax = (4 + 6)% = 10%

New total price = Rs. 1,600 + 10% of Rs. 1,600

= Rs. 1,600 + $\frac{10}{100}$ × 1,600

= Rs. 1,600 + Rs. 160

= Rs. 1,760 Ans.

Solution 11:

Let the list price of T.V. = y

Sales tax when the rate is 9% = $\frac{9}{100}$ Y

⟹ Sale price is y + $\frac{9y}{100}$

Sales tax when the rate is 6% = $\frac{6}{100}$ y

⟹ Sale price is y + $\frac{6}{100}$ y

Differences of sale prices

= y + $\frac{9y}{100}$ − $\left(y + \frac{6y}{100}\right)$

= y + $\frac{9y}{100}$ − y − $\frac{6y}{100}$

= $\frac{9y}{100}$ − $\frac{6y}{100}$

Savings for Geeta = 784.

Therefore, we have,

784 = $\frac{9y}{100}$ − $\frac{6y}{100}$

⟹ $\frac{3y}{100}$ = 78

⟹ y = $\frac{78 \times 100}{3}$

⟹ y = Rs. 26,000

Thus the list price of the T.V. is Rs. 26,000 Ans.

Solution 12:

Price of the article inclusive of sales tax = Rs. 21,384

Let y be the list price of the article

Rate of sales tax charged by the shopkeeper = 10%

According to the given statement, we have

21384 = y + y × $\frac{10}{100}$

⟹ y + $\frac{y}{10}$ = 21384

$\implies \frac{11y}{10} = 21384$

$\implies y = \frac{21384 \times 10}{11}$

$\implies y = $ Rs. 19440

When the sales tax is 8%, the actual sale price

$= 19440 + 19440 \times \frac{8}{100}$

$= $ Rs. 20,995.2

Extra profit = Sale price of the article charged by shopkeeper − Actual sale price

$\implies$ Extra profit = Rs. 21,384 - Rs. 20.995.2 = Rs. 388.80 Ans.

EXERCISE 1(B)

Solution 1:

Purchase price = Rs. 1,800

Expenditure = Rs. 600

Total price = Rs. 1,800 + Rs. 600 = Rs. 2,400

M.P. of article = Rs. 2,400 + 20% of Rs. 2400

$= $ Rs. $2,400 + \frac{20}{100} \times 2,400$

$= $Rs. 2,400 + Rs. 480 = Rs. 2,880

Cost price for customer = Rs. 2,880 + 12% of Rs. 2,880

$= $ Rs. $2,880 + \frac{12}{100} \times 2,880S$

$= $ Rs. 2,880 + Rs. 345.60

$= $ Rs. 3,225.60 Ans.

Solution 2:

C.P. of an article = Rs. 800

Expenditure = Rs. 100

Total C.P.= Rs. 800 + Rs. 100 = Rs. 900

Let sale price = Rs. y

Sale price inclusive of sales tax = Rs. 1,287

Rate of sales tax = 10%

Then y + 10% of y = Rs. 1,287

$\implies y + \frac{y}{10} = Rs. 1,287$

$\implies \frac{11y}{10} = Rs. 1,287$

$\implies y = $ Rs. $\frac{1,287 \times 10}{11} = Rs. 1,170$

His profit = Rs. 1,170 – Rs. 900 = Rs. 270

His profit% $= \frac{270}{900} \times 100\% = 30\%$ Ans

Solution 3:

Marked price of article = Rs. 6,000

Sale price after discount = Rs. 6,000 − 15% of Rs. 6,000

= Rs. 6,000 − Rs. 900

Rs. 5,100

Rate of sales tax = 10%

Cost price for customer = Rs. 5,100 + 10% of Rs. 5,100

= Rs. 5,100 + Rs. 510

= Rs. 5,610

Solution 4:

List price of T.V = Rs. 24,000

Discount % = 8 %

Season discount = 5%

∴ Sale price = Rs. 24,000 $\left(1 - \frac{8}{100}\right)\left(1 - \frac{5}{100}\right)$

= 24,000 × $\frac{92}{100}$ × $\frac{95}{100}$ = $Rs.\,20,976$

Rate of sales tax = 10%

Sales tax = Rs. 20,976 × $\frac{10}{100}$ = $Rs.\,2,097.60$

Final price for customer = Rs. 20,976 + 10% of Rs. 20,976

= Rs. 20,976 + $\frac{10}{100}$ × 20,976

= Rs. 20,976 + Rs. 2,097.60

= Rs. 23,073.60 Ans

Solution 5:

Cost price = Rs. 200

Marked price = Rs. 200 + 40% of Rs. 200

 = Rs.200 + Rs. 80 = Rs. 280

Discount = 20%

Sale price = 280 $\left(1 - \frac{20}{100}\right)$

  = 280 × $\frac{4}{5}$

Rate of sales tax = 10%

Price for customer = 224 + 10% of 224

   = 224 + $\frac{10}{100}$ × 224

$$= 224 + 22.4$$
$$= 246.4$$
$$= 246 \text{ (Approx)}$$

Solution 6:

Let printed price = Rs. y

Discount% = 12%

$\therefore$ Sale price = Rs. y $\left(1 - \dfrac{12}{100}\right) = y \times \dfrac{88}{100} =$ Rs. $\dfrac{22\,y}{25}$

Rate of sales tax = 12%

Purchase price= Rs. 591.36

According to question

Sale price + sales tax = Rs. 591.36

Rs. $\dfrac{22y}{25}$ + 12% of $\dfrac{22y}{25}$ = Rs. 591.36

$\Longrightarrow \dfrac{22y}{25} + \dfrac{66y}{625} =$ Rs. 591.36

$\Longrightarrow \dfrac{616y}{625} =$ Rs. 591.36

$\Longrightarrow y = \dfrac{591.36 \times 625}{616} =$ Rs. 600 Ans

Solution 7:

Catalogue price = Rs. 20,000

Two successive discounts = 15% and 10%

Sale price = 20,000 $\left(1 - \dfrac{15}{100}\right)\left(1 - \dfrac{10}{100}\right)$

$\qquad = 20,000 \times \dfrac{17}{20} \times \dfrac{9}{10}$

Rate of sales tax = 10%

Sales tax = 10% of 15,300

$= \dfrac{10}{100} \times 15,300 = Rs.\,1,530$

Final total price = Rs. 15,300 + Rs. 1,530 = Rs. 16,830

Solution 8:

Let the printed price = Rs. y

Discount% = 15%

Cost price = Rs. 1,700

∴ list price – discount = Rs. 1,700

$\implies$ y – 15% of y = Rs. 1,700

$\implies$ y - $\frac{3y}{20}$ = $Rs.$ 1,700

$\implies \frac{17y}{20} = Rs.$ 1,700

$\implies$ y = Rs. $\frac{1,700 \times 20}{17} = Rs.$ 2,000

New printed price = Rs. 2,000 + 20% of Rs. 2,000

= Rs. 2,000 + $\frac{20}{100}$ × 2,000

= Rs. 2,000 + Rs. 400 = Rs. 2400

Selling price inclusive of sales tax = Rs. 2,688

Sales tax = Rs. 2,688 – Rs. 2,400 = Rs. 288

(i) ∴ Rate of sales tax = $\frac{\text{sales tax}}{\text{sales price}}$ × 100%

= $\frac{288}{2,400}$ × 100% = 12%

(ii) Profit = Rs. 2,400 – Rs. 1,700 = Rs. 700

∴ Profit % = $\frac{\text{profit}}{\text{cost price}}$ × 100% = $\frac{700}{1,700}$ × 100% = 41 $\frac{3}{17}$ % Ans.

Solution 9:

Sale price including sales tax = Rs. 4,160

Let sale price = Rs. y

Rate of sales tax = 4%

∴ y + 4% of y = Rs. 4160

$\implies$ y + $\frac{y}{25}$ = $Rs.$ 4,160

$\implies \frac{26y}{25} = Rs.$ 4160

$\implies$ y = Rs. $\frac{4,160 \times 25}{26}$ = Rs. 4,000

Purchase price = Rs. 4,000 − 20% of Rs. 4,000

=Rs. 4,000 – Rs. 800= Rs. 3,200

Extra expense = Rs. 300

Then total cost price = Rs. 3,200 + Rs. 300 = Rs. 3,500

His profit = Rs. 4,000 – Rs. 3,500 = Rs. 500

∴ Profit% = $\frac{\text{profit}}{\text{cost price}}$ × 100%

= $\frac{500}{3,500}$ × 100% = $\frac{100}{7}$ % = 14$\frac{2}{7}$% Ans

Solution 10:

Let the printed price = Rs. y

Discount% = 20%

Cost price = Rs. 2,400

∴ List price – discount = Rs. 2,400

$\Rightarrow y - 20\%$ of y = Rs. 2,400

$\Rightarrow y - \dfrac{y}{5} = Rs.\,2,400$

$= \dfrac{4y}{5} = Rs.\,2,400$

$= y = Rs.\,\dfrac{2,400 \times 5}{4} = Rs.\,3,000$

New printed price = Rs. 3,000 + 10% of Rs. 3,000

= Rs. 3,000 + Rs. 300 = Rs. 3,300

Selling price inclusive of sales tax = Rs. 3,498

Sales tax = Rs. 3,498 – Rs. 3,300 = Rs. 198

(i) ∴ Rate of sales tax $= \dfrac{\text{sales tax}}{\text{sales price}} \times 100\%$

$= \dfrac{198}{3,300} \times 100\% = 6\%$

(ii) Profit = Rs. 3,300 – Rs. 2,400 = Rs. 900

∴ Profit% $= \dfrac{\text{profit}}{\text{cost price}} \times 100\% = \dfrac{900}{2,400} \times 100\% = 37.5\%$ Ans.

EXERCISE 1(C)

Solution 1:

Purchase price for shopkeeper = Rs. 6,200

Sale price for shopkeeper = Rs. 8,500

Tax paid by the shopkeeper = 8% of 6,200

$= \dfrac{8}{100} \times 6,200 = Rs.\,496$

Tax charged by the shopkeeper = 8% of 8,500

$= \dfrac{8}{100} \times 8,500 = Rs.\,680$

Then VAT paid by the shopkeeper = Rs. 680 – Rs. 496 = Rs. 184 Ans.

Solution 2:

Purchase price for A = Rs. 3,600

Tax paid by A = 10% of Rs. 3,600

$= \dfrac{10}{100} \times 3,600 = Rs.\,360$

Purchase price for B = Rs. 4,800

Tax paid by B to A = 10% of Rs. 4,800

$= \frac{10}{100} \times 4,800 = Rs.\,480$

Purchase price for C = Rs. 5,500

Tax paid by C to B = 10% of Rs. 5,500

$= \frac{10}{100} \times 5,500 = Rs.\,550$

VAT paid by A = Rs. 480 – Rs. 360 = Rs. 120 Ans.

VAT paid by B = Rs. 550 – Rs. 480 = Rs. 70 Ans.

Solution 3:

Purchase price for manufacture = Rs. 60,000

Tax paid by manufacturer = 4% of Rs. 60,000

$= \frac{4}{100} \times 60,000 = Rs.\,2,400$

Sale price for manufacturer = Rs. 92,000

Tax charged by manufacturer = 12.5% of Rs. 92,000

$= \frac{12.5}{100} \times 92,000 = Rs.\,11,500$

VAT paid by manufacturer= Rs. 11,500 – Rs. 2,400

= Rs. 9,100 Ans.

Solution 4:

Cost price for distributor = Rs. 6,000

Tax paid by distributor = 12.5% of Rs. 6,000

$= \frac{12.5}{100} \times 6000 = Rs.\,750$

Sale price for distributor = Rs. 7,500

Tax charged by distributor = 12.5% of Rs. 7,500

$= \frac{12.5}{100} \times 7,500 = Rs.\,937.50$

VAT paid by distributor = Rs. 937.50 – Rs. 750

= Rs. 187.50 Ans.

Sale price for trader = Rs. 8,000

Tax charged by trader = 12.5% of Rs. 8,000

$= \frac{12.5}{100} \times 8,000 = Rs.\,1,000$

VAT paid by trader = Rs. 1,000 – Rs. 937.50 = Rs. 62.50 Ans

Solution 5:

Printed price of an article = Rs. 2,500

Sale price for wholesaler = Rs. 2,500 − 20% of Rs. 2,500

= Rs. $2,500 - \frac{20}{100} \times 2,500$

= Rs. 2,500 – Rs. 500 = Rs. 2,000

Tax charged by wholesaler = 10% of Rs. 2,000

$= \frac{10}{100} \times Rs. 2000 = Rs. 200$

Cost price for retailer = Rs. 2,000 + Rs. 200 = Rs. 2,200 Ans.

Tax charged by retailer = 10% of Rs. 2,500

$= \frac{10}{100} \times Rs. 2500 = Rs. 250$

VAT paid by retailer = Rs. 250 – Rs. 200 = Rs. 50 Ans

Solution 6:

Cost price for retailer = Rs. 800

Sales tax paid by retailer = 8% of Rs. 800

$= \frac{8}{100} \times Rs. 800 = Rs. 64$

Sale price for retailer = Rs. 1,000

Tax charged by retailer = 8% of Rs. 1,000

$= \frac{8}{100} \times Rs. 1,000 = Rs. 80$

Price paid by customer = Rs. 1,000 + Rs. 80 = Rs. 1,080 Ans.

VAT paid by retailer = Rs. 80 – Rs. 64 = Rs. 16 Ans

Solution 7:

Cost price of 15 articles = Rs. 840

Then cost price of 6 articles $= \frac{840 \times 6}{15} = Rs. 336$

Sales tax paid by shopkeeper for 6 articles

= 8% of Rs. 336

$= \frac{8}{100} \times Rs. 336 = Rs. 26.88$

Sale price of 6 articles= 6 x Rs. 65 = Rs. 390

Tax charged by shopkeeper = 8% of Rs. 390

$= \frac{8}{100} \times Rs. 390 = Rs. 31.20$

VAT paid by shopkeeper = Rs. 31.20 – Rs. 26.88 = Rs. 4.32 Ans

Solution 8:

Sale price of an article for retailer = Rs. 900

Tax charged by retailer = 6% of Rs. 900

$= \frac{6}{100} \times Rs.\,900 = Rs.\,54$

VAT paid by retailer = Rs. 4.80

∴ VAT paid = tax charged − Tax paid

⟹ Rs. 4.80 = Rs. 54 – Tax paid

⟹ Tax paid = Rs. 54 – Rs. 4.80 = Rs. 49.20

Let cost price = Rs y

∴ 6% of y = Rs. 49.20

$\Longrightarrow \frac{6}{100} \times y = Rs.\,49.20$

$\Longrightarrow y = Rs.\ \frac{49.20 \times 100}{6} = Rs.\,820$

Purchase price for retailer = Rs. 820 + Rs. 49.20 = Rs. 869.20 Ans.

Solution 9:

Marked price of an article = Rs. 5,000

Sale price for manufacturer = Rs. 5,000 − 25% of Rs. 5,000

$= Rs.\,5,000 - \frac{25}{100} \times Rs.\,5000$

= Rs. 5,000 – Rs. 1,250 = Rs. 3,750

Tax paid by wholesaler = 8% of Rs. 3,750

$= \frac{6}{100} \times 3,750 = Rs.\,300$

Sale price for wholesaler = Rs. 5,000 − 15% of Rs. 5,000

$= Rs.\,5,000 - \frac{15}{100} \times Rs.\,5000$

= Rs. 5,000 – Rs. 750 = Rs. 4,250

Tax paid by retailer = 8% of Rs. 4,250

$= \frac{8}{100} \times 4,250 = Rs.\,340$

Sale price for retailer = Rs. 5,000

Tax paid by customer = 8% of Rs. 5,000

$= \frac{8}{100} \times 5,000 = Rs.\,400$

VAT paid by wholesaler = Rs. 340 – Rs. 300 = Rs. 40 Ans.

VAT paid by retailer = Rs. 400 – Rs. 340 = Rs. 60 Ans.

Solution 10:

Printed price of an article = Rs. 2,500

Purchase price for shopkeeper = Rs. 2,500 − 30% of Rs. 2,500

$= Rs.\,2,500 - \frac{30}{100} \times Rs.\,2,500$

= Rs. 2,500 – Rs. 750 = Rs. 1,750

Tax paid by the shopkeeper = 8% of Rs. 1,750

$= \frac{8}{100} \times Rs.\ 1,750 = Rs.\ 140$

Price paid by shopkeeper = Rs. 1,750 + Rs. 140 = Rs. 1,890 Ans.

Sale price for shopkeeper = Rs. 2,500

Tax paid by customer = 8% of Rs. 2,500

$= \frac{8}{100} \times Rs.\ 2,500 = Rs.\ 200$

Price paid by the customer = Rs. 2,500 + Rs. 200 = Rs. 2,700 Ans.

VAT paid by the shopkeeper = Tax charged − Tax paid

= Rs. 200 – Rs. 140 = Rs. 60 Ans

Solution 11:

Sale price of an article for retailer = Rs. 3,000

Tax charged by retailer = 12% of Rs. 3,000

$= \frac{12}{100} \times Rs.\ 3,000 = Rs.\ 360$

VAT paid by retailer = Rs. 72

∴ VAT paid = Tax charged – Tax paid

⟹ Rs. 72 = Rs. 360 – Tax paid

Tax paid=Rs 360 - Rs 70 = Rs. 288

Let cost price = Rs. y

∴ 12% of y = Rs. 288

$\Rightarrow \frac{12}{100} \times y = Rs.\ 288$

$\Rightarrow y = Rs.\ \frac{288 \times 100}{12} = Rs.\ 2,400$

Purchase price for retailer = Rs. 2,400 + Rs. 288 = Rs. 2,688 Ans

Solution 12:

Marked price of an article = Rs. 10,000

Sale price for manufacturer

= 10,000 – 40% of 10,000

$= 10,000 - \frac{40}{100} \times 10,000$

= 10,000 – 4,000

= 6,000

Tax paid by wholesaler

= 12% of 6,000

$= \frac{12}{100} \times 6,000$

= 720

Sale price for the wholesaler

$= 10,000 - 20\%$ of $10,000$

$= 10,000 - \dfrac{20}{100} \times 10,000$

$= 10,000 - 2,000$

$= 8,000$

Tax paid by the retailer

$= 12\%$ of $8,000$

$= \dfrac{12}{100} \times 8,000$

$= 960$

Sale price for the retailer

$= 10,000 - 10\%$ of $10,000$

$= 10,000 - \dfrac{10}{100} \times 10,000$

$= 10,000 - 1,000$

$= 9,000$

Tax paid by the customer $= 12\%$ of $9,000$

$= \dfrac{12}{100} \times 9,000$

$= 1,080$

VAT paid by wholesaler $=$ Rs. $960 -$ Rs. $720 =$ Rs. 240

VAT paid by retailer $=$ Rs. $1080 -$ Rs. $960 =$ Rs. 120

EXERCISE 1(D)

Solution 1:

Let the marked price be Rs. x.

Rebate $= 10\%$

price after rebate $=$ X $- 10\%$ X

$$= x - \dfrac{10}{100}x$$

$$= \dfrac{9x}{10}$$

Sales tax $= 6\%$

$\therefore$ total money paid $= \dfrac{9x}{10} + 6\%$ of $\dfrac{9x}{10}$

$\Rightarrow 47,700 = \dfrac{9x}{10} + \dfrac{6}{100} \times \dfrac{9x}{10}$

$\Rightarrow 47{,}700 = \dfrac{9x}{10} + \dfrac{54x}{1000}$

$\Rightarrow 47{,}700 = \dfrac{954x}{1000}$

$\Rightarrow x = 50{,}000$

The marked price of the computer is Rs. 50,000

Solution 2:

Let the printed price be Rs. x.

Discount = 10%

Sale price for the wholesaler = Rs. 2,700

$\therefore$ x – 10% of x = 2,700

$\Rightarrow \dfrac{9x}{10} = 2{,}700$

$\Rightarrow x = 3{,}000$

Print price by retailer = 3,000 + 15% of 3,000

$= 3{,}000 + \dfrac{15}{100} \times 3{,}000$

$= 3{,}000 + 450$

$= 3{,}450$

Sale price by retailer = Rs. 3,657

Sales tax charged by retailer = Rs. 3,657 − Rs. 3,450 = Rs. 207

Rate of sales tax $= \dfrac{sales\ tax}{print\ price} \times 100\%$

$= \dfrac{207}{3{,}450} \times 100\%$

$= 6\%$

Profit made by retailer = Rs. 3,450 – Rs. 2,700 = Rs. 750

Profit% $= \dfrac{profit}{cost\ price} \times 100\%$

$= \dfrac{750}{2{,}700} \times 100\%$

$= 27.78\%$

Solution 3:

Let the printed price be Rs. x

Rate of sales tax = 10%

Selling price inclusive of sales tax = Rs.7,040

$\therefore$ x + 10% of x = 7,040

$\Rightarrow X + \dfrac{10}{100} \times x = 7{,}040$

$\Rightarrow \dfrac{11x}{10} = 7{,}040$

$\Rightarrow x = 6,400$

Cost price for shopkeeper = 70% of 6,400

$$= \frac{70}{100} \times 6,400$$

$$= 4,480$$

Expense on transportation = Rs.40

Actual cost price = Rs. 4,480 + Rs. 40 = Rs. 4,520

Profit taken by shopkeeper = Rs. 6,400 − Rs. 4,520 = Rs. 1,880

Profit% $= \frac{profit}{cost\ price} \times 100\%$

$$= \frac{1,880}{4,520} \times 100\%$$

$$= 41.59$$

$$= 42 \text{ (nearest integer)}$$

Shopkeeper's makes a profit of 42%

Solution 4:

Selling price inclusive of sales tax = Rs. 9,275

Rate of sales tax = 6%

Let reduced price be Rs. x

x + 6% of x = 9,275

$\Rightarrow \frac{106x}{100} = 9,275$

$\Rightarrow x = 8,750$

Price reduction needed in the marked price

= Rs. 9,375 − Rs. 8,750 = Rs. 625

Solution 5:

Catalogue price of T.V.= Rs. 18,000

Selling price for the shopkeeper

Two discount = 20% and 10%

$$= 18,000 \times \left(1 - \frac{20}{100}\right)\left(1 - \frac{10}{100}\right)$$

$$= 18,000 \times \frac{80}{100} \times \frac{90}{100}$$

$$= 12,960$$

Rate of sales tax = 10%

Sales tax paid by customer = 10% of 12,960

$= \frac{10}{100} \times 12,960$

The sales tax amount the customer has to pay is Rs. 1,296.

Final price paid by customer = Rs. 12,960 + Rs. 1,296

= Rs. 14,256

The final price he has to pay for the Rs. 14,256

Solution 6:

Cost price = Rs. 7,500

Let the marked price by the shopkeeper be = Rs. x

Rate of sales tax = 9%

Sale price inclusive of sales tax = Rs. 9,156

∴ x + 9 % of x = 9,156

$\Rightarrow \frac{109x}{100} = 9,156$

$\Rightarrow x = 8,400$

Price increased by shopkeeper = Rs. 8,400 – Rs. 7,500 = Rs. 900

Increase % = $\frac{increase}{cost\ price} \times 100$

$= \frac{900}{7,500} \times 100$

= 12

The shopkeeper increases the price of the article by 12%.

Solution 7:

Marked price of an article = Rs. 500

Discount given by the wholesaler = 20%

Sale price for the wholesaler = 500 – 20% of 500

= 500 − 20 100 ×500

= 500 – 100

= 400 Sales tax charged by the wholesaler = 12.5% of 400

$= \frac{12.5}{100} \times 400$

= 50

Sales tax paid by the retailer = Rs. 50

Sale price for the retailer = Rs. 500

Sales tax charged by the retailer = 12.5% of 500 $= \frac{12.5}{100} \times 500$

= 62.50

Price paid by the customer = Rs. 500 + Rs. 62.50 = Rs. 562.50

VAT paid by the retailer = Rs. 62.50 − Rs. 50 = Rs. 12.50

Solution 8:

Selling price for the trader = Rs. 4,500
Sales tax charged by trader = 6% of 4,500

$$= \frac{6}{100} \times 4,500$$
$$= 270$$

VAT paid by trader = Rs. 81
∴ VAT paid by trader = tax charged – tax paid
$\Rightarrow$ 81 = 270 – tax paid
$\Rightarrow$ Tax paid = 270 – 81 = 189
Let purchase price for trader = Rs. x
∴ 6% of x = 189
$\Rightarrow$ x = 3,150
Discount in price = Rs. 4,500 – Rs. 3,150 = Rs. 1350

$$\text{Discount\%} = \frac{discount}{marked\ price} \times 100$$
$$= \frac{1,350}{4,500} \times 100$$
$$= 30$$

The trader get 30% article.
Money paid by the trader = Rs. 3,150 + Rs.189 = Rs. 3,339.

Solution 9:

Selling price for the retailer inclusive of sales tax = Rs. 5,350
Rate of sales tax = 7%
Let sale price (list price) for the retailer be Rs. x
∴ x + 7% of x = 5,350
$\Rightarrow \frac{107x}{100} = 5,350$
$\Rightarrow$ x = 5,000
Let purchase price for retailer = Rs. a
Profit % = 25%
∴ a + 25% of a = 5,000
$\Rightarrow a + \frac{125a}{100} = 5,000$
$\Rightarrow$ a = 4,000
Discount = Rs. 5,000 – Rs. 4000 = Rs. 1,000

$$\text{Dicount\%} = \frac{discount}{marked\ price} \times 100$$
$$= \frac{1,000}{5,000} \times 100$$
$$= 20$$

The retailer gets a discount of 20%

Solution 10:

Printed price of an article = Rs. 9,600
Discount % = 20%
Sale price of article = 9,600 − 20% of 9,600
$\qquad\qquad\qquad$ = 9,600 − 1,920
$\qquad\qquad\qquad$ = 7,680
Expense on transportation = Rs. 120
Cost price for the shopkeeper = Rs. 7,680 + Rs. 120 = Rs. 7,800
Rate of sales tax =10%
Tax charged paid by the shopkeeper = 10% of 7,680
$\qquad\qquad\qquad\qquad\qquad\qquad = \frac{10}{100} \times 7,680$
$\qquad\qquad\qquad\qquad\qquad\qquad = 768$
Total money paid by the shopkeeper = Rs. 7,800 + Rs. 768
$\quad$ = Rs. 8,568
Selling price for the shopkeeper = Rs. 9,600
Tax charged by the shopkeeper = 10% of Rs. 9,600 = Rs. 960
VAT paid by the shopkeeper = Rs. 960 − Rs. 768 = Rs. 192
Profit made by the shopkeeper = Rs. 9,600 − Rs. 7,800 = Rs. 1,800

Solution 11:
Printed price of camera = Rs. 1,600
Discount% = 20%
Print price by wholesaler = 1,600 – 20 % of 1,600
$\qquad\qquad\qquad\qquad = 1,600 - \frac{20}{100} \times 1,600$
$\qquad\qquad\qquad\qquad = 1,600 - 320$
$\qquad\qquad\qquad\qquad = 1,280$
Tax charged by the wholesaler = 6% of 1,280
$\qquad\qquad\qquad\qquad\qquad = \frac{6}{100} \times 1,280$
$\qquad\qquad\qquad\qquad\qquad = 76.80$
Purchase price for the shopkeeper
= Rs. 1,280 + Rs. 76.80 = Rs. 1,356.80
Selling price for the shopkeeper = Rs. 1,600
Tax charged by the shopkeeper = 6% of 1,600
$\qquad\qquad\qquad\qquad\qquad = \frac{6}{100} \times 1,600$
Purchase price for a customer = Rs. 1,600 + Rs. 96
$\quad$ = Rs. 1,696
The price at which the camera can be bought from the shopkeeper is Rs. 1,696.
VAT paid by the shopkeeper = Tax charged - Tax paid
$\quad$ = Rs. 96 – Rs. 76.80= Rs. 19.20
The VAT (Value Added Tax) paid by the shopkeeper is Rs. 19.20.

Solution 12:

Purchase price for = Rs. 8,000
Expense on transportation = Rs. 1,000
Cost price for Tarun = Rs. 8,000 + Rs. 1,000 = Rs. 9,000
Marked price by Tarun = Rs. 11,700
Sales tax charged by tarun = 10% of 11,700

$$= \frac{10}{100} \times 11,700$$
$$= 1,170$$

The customer's price = Rs. 11,700 + Rs. 1,170 = Rs. 12,870
Profit made by Tarun = Rs. 11,700 - Rs. 9,000 = Rs. 2,700

Profit % $= \frac{profit}{cost\ price} \times 100$

$$= \frac{2,700}{9,000} \times 100$$

Tarun's profit is 30%