Sales Tax And Value Added Tax

Q1. Gauri buys garments worth Rs. 1730. if the sales tax is charged at the rate of 5%, find the amount she has to pay for the garments.

Sol.

Selling price of garments = 1730

Rate of Sales tax = 5%

Amount of sales tax = $\frac{1730 \times 5}{100} = \frac{8650}{100}$ = Rs. 86.50

total price = 1730 + 86.50 = 1816.50

Q2. The list price of a washing machine is Rs. 17650. if the sales tax is chargable at the rate of 8% find the amount the buyer has to pay for it.

Sd.

list price = 17650

Rate of Sales tax = $\frac{17650 \times 8}{100}$ = Rs. 1412

Total price of washing machine = 17650 + 1412 = Rs. 19062.

Q3. Tinku purchased the following stationery goods from a shop:

Items	Quantity	Rate
Pens	6	Rs 5.50 each
Pencils	2 dozens	Rs. 22 per dozen
Copies	3 dozens	Rs. 108 per dozen
Rubbers	10	Rs. 1.08 each

If the sales tax is charged at 6%, find the total amount paid by him.

Sol. price of 6 pens $= 6 \times 5 \cdot 50 =$ Rs. 33

price of 2 dozen pencils $= 22 \times 2 = 44$

price of 3 dozen copies $= 108 \times 3 = 324$

price of 10 rubbers $= 0.08 \times 10 = 10.80$

$\qquad\qquad\qquad\qquad 1.08 \times 10 = 10.8$

total amount $= 33 + 44 + 324 + 10.8 = 411.80$

Rate of sales tax $= 6\%$

total sales tax $= 411 \cdot 8 \times \dfrac{6}{100} =$ Rs. $24 \cdot 71$

total amount to be paid $= 411 \cdot 8 + 24 \cdot 71 =$ Rs. $436 \cdot 51$

Q4. Ritu buys the following goods from a departmental store:

Crockery worth   Rs. 2375

Readymade garments worth   Rs. 1450

Utensils worth   Rs. 685

Eatables worth   Rs. 245

If the sales tax is chargeable at the rate of 10% on crockery, 6% on garments, 5% on utensils and eatables are exempted from sales tax, find the total amount to be paid by Ritu.

Sol. (i) price of crockery $= 2375$

Rate of sales tax $= 10\%$

Amount of sales tax $= 2375 \times \dfrac{10}{100} =$ Rs. $237 \cdot 50$

total price of crockery $= 2375 + 237 \cdot 50 =$ Rs. $2612 \cdot 50$

(ii) price of garments $=$ Rs. 1450

Rate of sales tax $= 6\%$

Amount of sales tax $= 1450 \times \dfrac{6}{100} =$ Rs. 87

total price $= 1450 + 87 =$ Rs. 1537.

(iii) price of utensils = 685

Rate of sales tax = 5%

Amount of Sales tax = $685 \times \frac{5}{100}$ = Rs. 34.25

total price = 685 + 34.25 = Rs. 719.25

(iv) price of eatables = Rs. 245

total amount of the bill = 2612.50 + 1531 + 719.25 + 245

= Rs. 5113.75

Q5. Atul purchased a motor cycle which was quoted at Rs. 23500. The shopkeeper charged sales tax at the rate of 10%. As atul wanted to take the motor cycle outside the state, the shop keeper charged 2% extra as central sales tax. find the amount Atul had to pay for the motorcycle.

Note: central sales tax is charged on the list price.

Sol.

list price of motor cycle = Rs. 23500

Rate of Sales tax = 10%

Rate of central sales tax = 2%

total sales tax = $23500 \times \frac{12}{100}$ = Rs. 28,20

total price of the motor cycle = 23500 + 2820 = Rs. 263260

Q6. Swaran paid Rs. 20 as sales tax on a pair of shoes worth Rs. 250. find the rate of Sales tax.

Sol.

Sales tax on Rs. 250 = Rs. 20

Sales tax on Rs. 100 = $\frac{20}{250} \times 100$ = 8

Rate of Sales tax = 8%

Q7. A Colour T.V. is available for Rs. 13440 inclusive of sales tax. If the original cost of T.V. is Rs. 12000, find the rate of sales tax.

Sol.
original price = 12000
Sales price = 13440

Amount of Sales tax = 13440 − 12000 = Rs. 1440

Sales tax on Rs. 12000 = Rs. 1440

Sales tax on Rs. 100 = $\frac{1440}{12000} \times 100$ = Rs. 12

Rate of Sales tax = 12%

Q8. The price of a T.V. set inclusive of sales tax is Rs. 13161. if the rate of sales tax is 7%. find its basic price.

Sol.
let basic price = Rs. 100

Selling price = 100 + 7 = Rs. 107

If selling price is Rs. 107 then basic price = Rs. 100

and if selling price is Rs. 13161, then basic price =

$= \frac{13161 \times 100}{107}$ = Rs. 12300

Q9. The price of a washing machine inclusive of sales tax is Rs. 13530 if the sales tax is 10%. find its basic price.

Sol.
let the basic price = Rs. 100.

Sales tax = Rs. 10

Selling price = 100 + 10 = 110

If the selling price is Rs. 110, then basic price = Rs. 100

and if the selling price is Rs. 13530, then basic price

$= \frac{100 \times 13530}{110}$

= Rs. 12300

Q10. A refrigerator is marked for sale at Rs. 17600 inclusive of sales tax. If the rate of sales tax is 10%, calculate:

(i) The list price of the refrigerator

(ii) The amount of sales tax.

Sol. (i) let the list price = Rs. 100

Sales tax = 10

Selling price = 100 + 10 = 110

If selling price is Rs. 110, then list price = Rs. 100

If selling price is Rs. 17600, then list price

$$= \frac{100 \times 17600}{110} = Rs. 16000$$

(ii) Amount of sales tax = 17600 - 16000 = Rs. 1600

Q11. Sadhvi bought a set of cosmetic items for Rs. 345 including 15% salestax and a pursue for Rs. 110 including 10% sales tax. What is the total amount of sales tax charged on the whole transaction?

Sol. Selling price of cosmetic items = Rs. 345

Rate of Sales tax = 15%

let list price = x

Selling price = $x + \frac{15x}{100} = \frac{115x}{100}$

$\therefore \frac{115x}{100} = 345 \Rightarrow x = \frac{345 \times 100}{115} = Rs. 300$

amount of sales tax = 345 - 300 = Rs. 45

(ii) let list price of purse = x and sales tax = 10%

Sales price of purse = $x + \frac{10x}{100} = \frac{110x}{100}$

$\therefore \frac{110x}{100} = 110 \Rightarrow x = 100$

amount of sales tax = 110 - 100 = Rs. 10

Total sales tax = 45 + 10 = Rs. 55.

Q12. list price of a washing machine is Rs. 9000. The dealer allows a discount of 5% on the cash payment. How much money will a customer pay to the dealer in cash, if the rate of sales tax is 10% ?

Sol. List price of machine = Rs. 9000

Rate of discount = 5%

Net sales price = $\dfrac{9000 \times (100-5)}{100} = \dfrac{9000 \times 95}{100} = $ Rs. 8550

Rate of sales tax = 10%

Amount of sales tax = $8550 \times \dfrac{10}{100} = $ Rs. 855

The customer will pay = 8550 + 855 = Rs. 9405

Q13. Sarita buys goods worth Rs. 5500. she gets a rebate of 5% on it. after getting the rebated, if sales tax is charged at 5%. find the amount she has to pay for the goods.

Sol. List price of goods = 5500

Rate of rebate = 5%

total rebate = $\dfrac{5}{100} \times 5500 = $ Rs. 275

Net Sale price = 5500 − 275 = Rs. 5225.

Rate of Sales tax = 5%

Sales tax = $\dfrac{5}{100} \times 5225 = $ Rs. 261.25

She had to pay = 5225 + 261.25 = Rs. 5486.25

Q14. Raman went to a shop to buy a fan costing Rs. 750. The rate of sales tax is 6%. He requests the shopkeeper to reduce the price of the fan to such an extent that he has to pay Rs. 742, inclusive of the sales tax. find the reduction needed to in the price of the fan.

Sol.

List price of fan = 750

Rate of Sales tax = 6%

Actual sale price = 742

$$\text{Sale price} = \frac{742 \times 100}{100+6} = \frac{742 \times 100}{106} = Rs. 700$$

Amount of reduction = 750 − 700 = Rs. 50.

Q15. John goes to a shop to buy a bicycle quoted at Rs. 1000. the rate of Sales tax is 12% on it. He asks the shopkeeper for a rebate on the price of the bicycle to such an extent that he has to pay Rs. 1008 inclusive of sales tax. find the rebated percentage on the price of the bicycle.

Sol.

List price of fan = Rs. 1000

Rate of Sales tax = 12%

Sale price including Sales tax = Rs. 1008

let sale price = x

Sales tax = 12%

$$\text{Sale price} = x + \frac{12x}{100} - \frac{112x}{100}$$

$$\therefore \frac{112x}{100} = 1008 \Rightarrow x = \frac{1008 \times 100}{112} = Rs. 900$$

But list price = Rs. 1000

Amount of reduction = 1000 − 900 = Rs. 100

$$\text{Rate of reduction} = \frac{100 \times 100}{1000} = 10\%$$

Q16. Kiran purchases an article for Rs. 5400 which includes 10% rebate on the marked price and 20% Sales tax on the remaining price. find the marked price of the article.

Sol.

Cost of articles = 5400

Including 10% rate and 20% Sales tax on remaining price.

let marked price = x

$$\frac{20}{100} \times x = \frac{x}{5}$$

$x + \frac{x}{5} = \frac{6x}{5}$ after sales tax

10% update $= \frac{10}{100} \times \frac{6x}{5} = \frac{12x}{100}$

$$\frac{6x}{5} - \frac{12x}{100} = \frac{120x - 12x}{100} = \frac{108x}{100}$$

$$\therefore \frac{108x}{100} = 5400 \Rightarrow x = \frac{5400 \times 100}{108} = 5000$$

Q17. The catalogue price of a computer set is Rs. 45000. the shopkeeper gives a discount of 7% on the listed price. He further gives an off-season discount of 4% on the balance. However, sales tax at 8% is charged on the remaining price. find: (i) The amount of sales tax a customer has to pay. (ii) the final price he has to pay for the computer set.

Sol.

M.P = 45000

Discount given = 7%

$= \frac{7}{100} \times 45000 = 3150$

$45000 - 3150 = 41850$

on more discount of 4% $= \frac{4}{100} \times 41850 = Rs. 1074$

$41850 - 1074 = Rs. 40176$

(i) sales tax = 8%

$= \frac{8}{100} \times 40176 = Rs. 3214.08$

(ii) final price $= 40176 + 3214.08$

$= 43392.08$

Q18. The catalogue price of a colour T.V. is Rs. 24000. the shopkeeper gives a discount of 8% on the listed price. He gives a further off-season discount of 5% on the balance. But sales tax at 10% is charged on the remaining amount. find :

(i) The sales tax amount a customer has to pay.

(ii) The final price he has to pay for the colour T.V.

Sol.

$\qquad$ List price of T.V = Rs. 24000

$\qquad$ first discount = 8%, second discount = 5%

Remaining price of T.V after discount

$$= 24000 \times \frac{(100-8)}{100} \times \frac{(100-5)}{100}$$

$$= 24000 \times \frac{92}{100} \times \frac{95}{100}$$

$$= Rs. 20976.$$

Rate of Sales tax = 10%

(i) Amount of Sales tax $= 20976 \times \frac{10}{100} = Rs. 2097.60$

(ii) final price to be paid $= 20976 + 2097.60$

$$= Rs. 23073.60$$

Q19. The printed price of an article is Rs. 1200. A shopkeeper marked up the printed price of the article by 15%. in request, he gives a discount of 5% on the marked up price. find the price of the article which a customer has to pay for the article, if sales tax is charged at 6%.

Sol.

$\qquad$ The printed price of the article = Rs. 1200

As the price is marked up by 15% on the printed price.

$\therefore$ marked up price $= 1200 \times \left(1 + \frac{15}{100}\right)$

$$= 1200 \times \frac{115}{100} = Rs. 1380$$

on request, he gave discount = 5%

$\therefore$ Net sale price $= \dfrac{1380 \times (100-5)}{100}$

$= \dfrac{1380 \times 95}{100}$

$=$ Rs. 1311

Rate of Sales tax = 6%

Sales tax $= 1311 \times \dfrac{6}{100} =$ Rs. 78·66

$\therefore$ The customer has to pay $= 1311 + 78·66$

$=$ Rs. 1389·66

Exercise - 2.2

Q1. A manufacturing company sells a T.V. to a trader A for Rs. 18000. Trader A sells it to a trader B at a profit of Rs. 750 and trader B sells it to a Consumer at a profit of Rs. 900. If the rate of Sales tax (under VAT) is 10%. find

(i) The amount of tax received by the government
(ii) The amount paid by the consumer for the T.V.

Sol.

(i) Amount of tax collected by manufacturer
$$= 10\% \text{ of } 18000 = 1800.$$

Since the trader A earns a profit of 750, the value added by dealer A = 750

Amount of VAT to be paid by A = 10% of 750 = Rs. 75

As the trader B earns a profit of Rs. 900, the value added by dealer B = 10% of 900 = Rs. 90.

(i) Amount of tax received by Government = 1800 + 75 + 90 = Rs. 1965

(ii) The value of TV paid by the Consumer = The charge by manufacturer + profit of A + profit of B.
$$= 18000 + 450 + 900 = Rs. 19650$$

Tax paid by the consumer = 10% of Rs. 19650
$$= \frac{10}{100} \times 19650 = Rs. 1965.$$

Amount paid by consumer for the T.V = 19650 + 1965 = Rs. 21615.

Q2. 'A' manufactures motorbikes at a cost price of Rs. 30600 each. He sells a motorbike to a dealer B, B sells it to a dealer C, C sells it to D and D sells it to a consumer. If the profit at each stage of the selling chain is Rs. 1000 and the rate of VAT is 12.5%. find

(i) the total amount of VAT paid..
(ii) The amount which the consumer pays for the motorbike.

Sol.
A (manufacturer)

$\downarrow$ cost price = 30600, P = 1000

B

$\downarrow$ 30600 + P = 1000

c (dealer)

$\downarrow$ P = 1000

D

$\downarrow$ P = 1000

Consumer

Total amount of VAT = $\frac{12.5}{100}$ (30600 + 1000 + 1000 + 1000 + 1000)

$= Rs. 4325$

Amount = VAT + total value = 4325 + 34600 = Rs. 38925.

Q3) A manufacturer buys a raw material for Rs. 40000 and pays Sales tax at the rate of 4%. He sells the ready stock for Rs. 78000 and charges sales tax at the rate of 7.5%. find the VAT paid by the manufacturer.

Sol.
Raw material = 40000

tax = 4%

Input tax = $\frac{4}{100}$ × 40000 = Rs. 1600

Ready stock = 78000 , tax = 7.5%

output tax = $\frac{75}{100}$ × 78000 = Rs. 5850

Tax liability = output tax - Input tax

$= 5850 - 1600$

$= Rs. 4250$

Q4. A shopkeeper buys a camera at a discount of 20% from the wholesaler, the printed price of the camera being Rs. 1600 and the rate of sales tax is 6%. The shopkeeper sells it to the buyer at the printed price and charges sales tax at the same rate. find

(i) The price at which the camera can be bought.

(ii) The VAT paid by the shopkeeper.

sol.

Marked price of the camera = Rs. 1600

Rate of discount = 20%

Cost price of the camera = $\frac{100-20}{100} \times 1600$ = Rs. 1280

Now, rate of sales tax = 6%

total cost of the camera = $\frac{100+6}{100} \times 1280$ = Rs. 1356.80
(price)

Thus the price at which camera can be bought is Rs. 1356.80

Total sales tax = 1356.80 − 1280 = 76.80

Again, selling price of the camera = Rs. 1600

Rate of sales tax = 6%

total sales tax = $\frac{6}{100} \times 1600$ = Rs. 96.

thus the VAT paid by the shopkeeper = 96 − 76.80 = Rs. 19.20

Q5. A shopkeeper bought a washingmachine at a discount of 20% from the wholesaler. the printed price of the washing machine being Rs. 12000 the shopkeeper sells it to a consumer at the printed price. If the rate of sales tax is 7.5%. find

(i) The amount of VAT paid by the wholesaler.

(ii) The amount of VAT paid by the shopkeeper

(iii) The amount at which the consumer bought the washing machine.

Sol. whole saler

$\downarrow$ sales tax $= 7.5\%$, $d\% = 20\%$, $MP = 12000$

shopkeeper

$\downarrow MP = 12000$

Consumer

(i) Amount paid as VAT by the whole saler $= SP \times \dfrac{75}{1000}$

$= \dfrac{80}{100} \times 12000 \times \dfrac{75}{1000} = Rs.\ 720$

(ii) CP for shopkeeper $= \left(1 - \dfrac{d}{100}\right) MP = \left(1 - \dfrac{20}{100}\right) 12000$

$= Rs.\ 9600$

$Sp = 12000$

profit $= Sp - Cp = Rs.\ 2400$

VAT paid by Shopkeeper $= \dfrac{75}{1000} \times 2400 = Rs.\ 180$

(iii) Amount paid by consumer $= Rs.\ 12000 + VAT$

$= 12000 + \left(\dfrac{75}{100} \times 12000\right) = Rs.\ 12900$

Q6. A shopkeeper sold an article to a consumer at list price of Rs. 450 and charged sales tax on it at the prescribed rate of 6%. if the shopkeeper has to pay VAT of Rs. 2.40, what was the sum inclusive of sales tax which the shop keeper paid to the whole saler?

Sol. whole saler $ST = 6\%$

$\downarrow x$

shopkeeper $\to$ pay VAT $= Rs.\ 2.40$

$\downarrow SP = Rs.\ 450$

Customer

VAT paid by shopkeeper $= Rs.\ 2.40$ @ $ST = 6\%$

let value added by shopkeeper $= x$

$VAT = \dfrac{6x}{100} = 2.40$

$\Rightarrow 6x = 240 \Rightarrow x = Rs.\ 40$

$$SP = 450$$

profit $= x = Rs. 40$

$$CP = SP - p = 450 - 40 = 410$$

Sum inclusive of ST which shopkeeper paid to wholesaler

$$= 410 + \left(410 \times \frac{6}{100}\right) = 410 + 24.60 = 434.60$$

Q7. A shopkeeper buys an article whose list price is Rs. 800 at some rate of discount from a wholesaler. He sells the article to a consumer at the list price and charges sales tax at the prescribed rate of 7.5%. If the shopkeeper has to pay a VAT of Rs. 6, find the rate of discount at which he bought the article from the wholesaler.

Sol.

wholesaler $\qquad ST = 7.5\%$

$\downarrow MP = 800 \qquad VAT_{shopkeeper} = Rs. 6$

$\downarrow d\% = ?$

Shopkeeper has to pay a VAT $\Rightarrow \frac{7.5}{100} \times profit = Rs. 6$

$$\Rightarrow P = \frac{1000 \times 6}{75} = 80$$

$\downarrow MP = 800$

consumer

$SP_{shopkeeper} = 800 , P = 80$

$CP_{shopkeeper} = 800 - 80 = 720$

$\Rightarrow \left(1 - \frac{d}{100}\right) MP = 720$

$\Rightarrow 720 = 800 \left(1 - \frac{d}{100}\right)$

$\Rightarrow \frac{720}{800} \times 100 = (100 - d)$

$\Rightarrow 90 = 100 - d$

$\Rightarrow d = 10\%$

Q8. A manufacturing company P sells a desert cooler to a dealer A for Rs. 8100 including sales tax under VAT. The dealer A sells it to a dealer B for Rs. 8500 plus sales tax and the dealer B sells it to a consumer at a profit of Rs. 600. If the rate of sales tax (under VAT) is 8% find

(i) The cost price of the cooler for the dealer A.

(ii) The amount of tax received by the government.

(iii) The amount which the consumer pays for the cooler.

Sol.

manufacturer   VAT = 8%

$\downarrow$ 8100
+ ST

A → 8500 + ST

$\downarrow$ 8500

B

$\downarrow$ P = 600

Consumer

Manufacturing Cost = x ⇒ $\dfrac{8x}{100} + x = 8100$

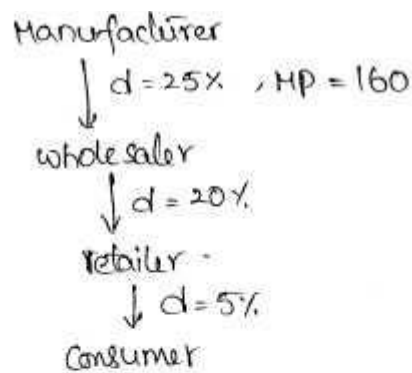⇒ $x = \dfrac{8100 \times 100}{108} = 7500$

CP of the cooler for A = 7500

Q9. A manufacturer listed the price of his goods at Rs. 160 per article. He allowed a discount of 25% to a wholesaler who in his turn allowed a discount of 20% on the listed price to a retailer. The rate of sales tax on the goods is 10%. If the retailer sells one article to a consumer at discount of 5% on the listed price, then find

(i) The VAT paid by the wholesaler.

(ii) The VAT paid by the retailer

(iii) The VAT received by the government.

Sol.

Manufacturer
$$\downarrow d = 25\%, \quad MP = 160$$
whole saler
$$\downarrow d = 20\%$$
retailer :
$$\downarrow d = 5\%$$
Consumer

$$CP_{whole\,saler} = \left(1 - \frac{25}{100}\right) 160 = Rs.\ 120$$

$$SP_{whole\,saler} = \left(1 - \frac{20}{100}\right) 160 = Rs.\ 128$$

(ii) VAT paid by retailer $= (152 - 128)\frac{10}{100} = 2.40$

(iv) VAT paid by whole saler $= \frac{10}{100} \times 8 = 0.80$

(iii) VAT received by government $= \frac{10}{100}\left(\frac{15}{100} \times 160\right) = Rs.\ 15.20$

Q10 In a particular tax period, Mr. Sunderdass, a shopkeeper purchased goods worth Rs. 960000 and paid a total tax of Rs. 62750 (under VAT). During this period, his sales consisted of taxable turnover of Rs. 400000 of goods taxable at 6% and Rs. 480000 for goods taxable at 12.5%. He also sold tax exempted goods worth Rs. 95640 in the same period. Calculate his tax liability (under VAT) for this period.

Sol.
$$CP = 960000, \quad Tax = 62750$$

Turnover $= 400000$, tax $= 6\%$

$$Tax = \frac{6}{100} \times 400000 = 24000$$

Turnover $= 480000$, tax $= 12.5\%$

$$tax = \frac{125}{1000} \times 480000 = Rs.\ 60000$$

$$total = 60000 + 24000 = 84000$$

$$tax\ liability = 84000 - 62750 = Rs.\ 21250.$$

Q11. In the tax period ended march 2008, M/S Hari Singh & sons purchased floor tiles worth Rs. 800000 taxable at 7.5% and sanitary fitting worth Rs. 750000 taxable at 10%. During this period, the sales turnover for floor tiles and sanitary fittings are worth Rs. 840000 and Rs. 920000 respectively. However, the floor tiles worth Rs. 60000 were returned by the firm during the same period. Calculate the tax liability (under VAT) of the firm for this tax period.

Sol.

purchases	Tax %	Input tax
Rs. 800000	7.5%	$\frac{75}{1000} \times 800000$ = Rs. 60,000
Rs. 750000	10%	$\frac{10}{100} \times 750000$ = 75000

Total input tax = 75000 + 60000 = Rs. 135000

sales	tax %	output tax
Rs. 840000	7.5%	$\frac{75}{1000} \times 840000$ = Rs 65000
Rs. 920000	10%	$\frac{10}{100} \times 920000$ = 92000

total output tax = 63000 + 92000 = Rs. 155000

Goods returned = 60000

Adjustment tax = $60000 \times \frac{75}{1000}$ = 4500

tax liability = output tax − Input tax − Adjustment tax

= 155000 − 135000 − 4500

= Rs. 20,000 − 4500

= Rs. 15500