Exercise 13.3

Q.1 The list price of a refrigerator is Rs 9700. If a value added tax of 6% is to be charged on it, how much one has to pay to buy the refrigerator?

Sol: List price = Rs 9700

$$VAT = 6\% \text{ of } 9700$$

$$= \frac{6}{100} \times 9700 = 582$$

∴ Amount has to pay = Rs 9700 + Rs 582

= Rs 10282

Q.2 Vikram bought a watch for Rs 825. If this amount includes 10% VAT on the list price, what was the list price of the watch?

Sol: Let list price of watch = Rs x

$$VAT = \frac{10}{100} \times x = \frac{x}{10}$$

∴ Price of watch $= x + \frac{x}{10}$

$$\Rightarrow 825 = \frac{10x + x}{10}$$

$$\Rightarrow x = \frac{825 \times 10}{11}$$

$$\Rightarrow x = \text{Rs } 750$$

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Q.3 Aman bought a shirt for Rs 374.50, which includes 7% VAT. Find the list price of shirt.

Sol: Let list price of shirt = Rs x

$$VAT = 7\% \text{ of } x = \frac{7x}{100}$$

$$\text{Value of shirt} = x + \frac{7x}{100}$$

$$\Rightarrow \frac{107}{100}x = 374.5$$

$$\Rightarrow x = \frac{374.5 \times 100}{107}$$

$$= \text{Rs } 350$$

Q.4 Rani purchases a pair of shoes whose sale price is Rs 175. If she pays VAT at the rate of 7%, how much amount does she pay as VAT? Also find the net value of the pair of shoes.

Sol: $VAT = 7\% \text{ of } 175$

$$= \frac{7}{100} \times 175 = \frac{1225}{100}$$

$$= \text{Rs } 12.25$$ "has to pay as VA

$$\text{net value} = 175 + 12.25$$

$$= \text{Rs } 187.25$$

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Q.5 Sweena paid Rs 20 as VAT on a pair of shoes worth Rs 250. Find the value of VAT.

Sol: Rate of VAT $= \frac{\text{VAT}}{\text{original price}} \times 100$

$= \frac{20}{250} \times 100 = 8\%$

Q.6 Sarita buys goods worth Rs 5500. She gets a rebate of 5% on it. After getting the rebate if VAT at the rate of 5% is charged. Find the amount she will have to pay for the goods.

Sol: CP of goods = Rs 5500

$D = 5\%$ of 5500

$= \frac{5}{100} \times 5500 = \text{Rs } 275$

value of goods after rebate $= 5500 - 275$

$= \text{Rs } 5225$

$VAT = 5\%$ of 5225

$= \frac{5}{100} \times 5225 = \frac{26125}{100}$

$= \text{Rs } 261.25$

∴ Final Amount have to pay $= \text{Rs } 5225 + 261.25$

$= \text{Rs } 5486.25$

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Q.7 The cost of furniture inclusive of VAT is Rs 7150. If the rate of VAT is 10%. Find the original cost of the furniture.

Sol: Let original cost = Rs x

$$VAT = 10\% \text{ of } x = \frac{10x}{100} = \frac{x}{10}$$

$$\therefore \text{Total cost} = x + \frac{x}{10}$$

$$\Rightarrow 7150 = \frac{10x + x}{10}$$

$$\Rightarrow \frac{7150 \times 10}{11} = x$$

$$\Rightarrow x = 6500$$

original cost = Rs 6500

Q8 A refrigerator is available for Rs 13750 including VAT. If the original cost of ~~TV~~ furniture is Rs 12000. Find Rate of VAT.

Sol: Price of TV including VAT = Rs 13750

original price = Rs 12000

$$\therefore VAT = \text{Rs } 13750 - \text{Rs } 12000$$

$$= \text{Rs } 1750$$

$$VAT\% = \frac{VAT}{\text{original price}} \times 100 = \frac{1750}{12000} \times 100$$

$$= \frac{175}{12} = 14.58\%$$

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Q9 A colour TV is available for Rs 13440 inclusive of VAT. If the original cost of TV is Rs 12000. Find rate of VAT.

Sol: Cost of TV inclusive VAT = Rs 13440.

original cost = Rs 12000

$\therefore$ VAT = 13440 − 12000

= 1440

$$VAT\% = \frac{1440}{12000} \times 100 = 12\%$$

Q.10 Reena goes to a shop to buy a radio, costing Rs 2568. The rate of VAT is 7%. She tells the shopkeeper to reduce the price of the radio such that she has to pay Rs 2568 inclusive of VAT. Find the reduction needed in the price of radio.

Sol: Cost of radio = Rs 2568, let reduced price = x

VAT = 7% of x = $\frac{7}{100} x$

So, SP = $x + \frac{7x}{100} = \frac{107}{100} x$

$\therefore \frac{107}{100} x = 2568 \Rightarrow x = \frac{2568 \times 100}{107}$

= Rs 2400

$\therefore$ Reduced price = Rs 2400

$\therefore$ Reduction needed in price of radio = 2568 − 2400

= Rs 168

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Q.11 Rafat goes to a departmental store and buys the following articles.

Item	Price per item	Rate of VAT
2 Pairs of shoes	Rs 800	5%
1 Sewing machine	Rs 1500	6%
2 Tea-sets	Rs 650	4%

Calculate the total amount he has to pay to the store.

Sol: price of 2 pairs of shoes = 2×800 = Rs 1600

VAT = 5% of 1600

$= \frac{5}{100} \times 1600$ = Rs 80

∴ Total price of shoes = 1600 + 80

= Rs 1680

Price of sewing machine = Rs 1500

VAT = 6% of 1500 = $\frac{6}{100} \times 1500$

= Rs 90

Price of sewing machine = 1500 + 90

= Rs 1590

Cost of 2 tea sets = Rs 650×2

= Rs 1300

VAT = $\frac{4}{100} \times 1300$ = Rs 52

∴ Cost of 2 Tea sets = 1300 + 52 = Rs 1352

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∴ Total Amount at the end = 1680 + 1590 + 1352

= Rs 4622

Q.12 Ajit buys a motorcycle for Rs 17600 including value added tax. If the rate of VAT is 10%, what is the sale price of the Motorcycle?

Sol: ∵ Cost of Motorcycle including VAT = Rs 17600

Rate of VAT = 10%.

let consider the sale price = Rs x

$$VAT = \frac{10}{100} \times x = \frac{x}{10}.$$

$$\therefore \quad x + \frac{x}{10} = 17600$$

$$\Rightarrow \frac{11x}{10} = 17600$$

$$\Rightarrow x = \frac{176000}{11} = \text{Rs } 16000$$

∴ Sale price of the Motorcycle = Rs 16000

Q.13 Manoj buys a leather coat costing Rs 900 at Rs 990 after paying the VAT. Calculate Rate of VAT Charged on the coat.

Sol: CP of coat = Rs 900

Rate of VAT = x %.

So $\frac{x}{100} \times 900 = \text{Rs } 9x$

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So, $900 + 9x = 990$

$9x = 90$

$x = 10$

$\therefore$ VAT % = 10%

Q.14 Rakesh goes to a departmental store and purchases the following articles

(i) biscuits and bakery products costing Rs 50, VAT @ 5%

(ii) medicines costing Rs 90, VAT @ 10%

(iii) clothes costing Rs 400, VAT @ 1%, and

(iv) cosmetics costing Rs 150, VAT @ 10%.

Calculate the total amount to be paid by Rakesh to the store.

Sol:

(i) cost of biscuits and bakery products = Rs 50.

VAT = 5% of 50

$= \frac{5}{100} \times 50 =$ Rs 2.50

$\therefore$ Amount paid for biscuits = 50 + 2.50 = Rs 52.50

(ii) Cost of medicine = Rs 90

VAT = 10% of 90 $= \frac{10}{100} \times 90 =$ Rs 9.

$\therefore$ Amount paid = 90 + 9 = Rs 99

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(iii) Cost of clothes = Rs 400

VAT = 1% of 400

$= \frac{1}{100} \times 400 = Rs\ 4$

∴ Amount paid for clothes = 400 + 4 = Rs 404

(iv) Cost of cosmetics = Rs 150

VAT = 10% of 150

$= \frac{10}{100} \times 150 = Rs\ 15$

Amount paid for cosmetics = 150 + 15

= Rs 165

∴ Total Amount paid by Rakesh

= Rs (525 + 99 + 404 + 165)

= Rs 720.5

Q.15 Ranjeeta purchased a set of cosmetics, she paid Rs 165 for it including VAT. If the rate of VAT is 10%. Find the sale price of the set.

Sol: Let Sale price of set = x

$VAT = 10\% \text{ of } x = \frac{10x}{100} = \frac{x}{10}$

$\therefore x + \frac{x}{10} = 165$

$\Rightarrow \frac{11x}{10} = 165 \quad \Rightarrow x = \frac{1650}{11}$

= Rs 150

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Q.16 Sunita purchases a bicycle for Rs 660. She has paid a VAT of 10%. Find the sale price of the set.

Sol: Cost of bicycle = Rs 660

VAT = 10%.

Let Sale price of Bicycle = Rs x

$$VAT = \frac{10}{100}x = \frac{x}{10}$$

$$\therefore \quad x + \frac{10x}{100} = 660$$

$$\Rightarrow 11x = 6600$$

$$x = \frac{6600}{11} = Rs\ 600$$

Q.17 The sales price of a television, inclusive of VAT, is Rs 13500. If VAT is charged at the rate of 8% of the list price. Find the list price of television.

Sol: Sale price of television = Rs 13500

Let list price = Rs x

$$VAT = 8\% \text{ of } x = \frac{8x}{100}$$

$$\therefore \quad x + \frac{8x}{100} = 13500$$

$$\Rightarrow \frac{100x + 8x}{100} = 13500$$

$$x = \frac{13500 \times 100}{108} = Rs\ 12500.$$

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Q.18 Shikha purchased a car with a marked price of Rs 210000 at a discount of 5%. If VAT is charged at the rate of 10%. find the amount Shikha had paid for purchasing the car.

Sol: M.P = Rs 210000

$D = 5\%$ of $210000 = \frac{5}{100} \times 210000 = Rs\ 10500$

Net price of car = 210000 − 10500

= Rs 199500

VAT = 10%.

$\Rightarrow VAT = \frac{10}{100} \times 199500 = Rs\ 19950$

∴ SP of car = 199500 + 19950 = Rs 219450

Q 19 Shruti bought a set of cosmetic items for Rs 345 including 15% VAT and a purse for Rs 110 including 10% VAT. What percent is the VAT charged on the whole transaction.

Sol: CP of cosmetic items = Rs 345

Let consider the cost = Rs x

$VAT = \frac{15}{100} \times x = \frac{15x}{100} =$

So,

$x + \frac{15x}{100} = 345 \Rightarrow x = \frac{34500}{115}$

$\Rightarrow x = Rs\ 300$

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CP of purse = Rs 110

Let price of purse = Rs y

$$VAT = \frac{10}{100} \times y = \frac{y}{10}$$

So,
$$y + \frac{y}{10} = 110$$

$$\Rightarrow \frac{11y}{10} = 110$$

$$\Rightarrow y = 100$$

$\therefore$ Total price = 300 + 100 = Rs 400

Let the vat on whole transaction be r%.

Now, r% of 400 $= \frac{r}{100} \times 400 = 4r$

So, $400 + 4r = (345 + 110)$

$\Rightarrow 400 + 4r = 455$

$4r = 55$

$r = \frac{55}{4}$

$r = 13.75$

$\therefore$ vat on whole transaction = 13.75%

Q.20 List price of a cooler is Rs 2563. The rate of VAT is 10%. The customer requests the shopkeeper to allow a discount in the price of the cooler to such an extent that the price remains is 2563

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inclusive of VAT. Find the discount in the price of the cooler.

Sol: Cost of cooler = Rs 2563

VAT = 10%

Let reduced price after discount = Rs x

VAT = 10% of x

$= \frac{10x}{100} = \frac{x}{10}$

$\therefore x + \frac{x}{10} = 2563$

$\Rightarrow \frac{11x}{10} = 2583$

$\Rightarrow x = \frac{25630}{11} = Rs\ 2330$

$\therefore$ Reduced price of the cooler = Rs 2330

$\therefore$ Discount needed in price = 2563 − 2330

= Rs 233.

Q21 List price of a washing machine is Rs 9000. If 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 vat is 10%.

Sol: List price of washing machine = Rs 9000

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Discount allowed = 5% of 9000

$= \frac{5}{100} \times 9000 = Rs\ 450$

Selling price = 9000 − 450 = Rs 8550

VAT = 10% of 8550

$= \frac{10}{100} \times 8550 = Rs\ 855$

∴ The customer has to pay an amount

= Rs (8550 + 855)

= Rs 9405

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