

# AI1110 Assignment 1

Tejal Kulkarni CS21BTECH11058

March 2022

**Q8(c):** The printed price of an air conditioner is Rs.45,000/-. The wholesaler allows a discount of 10% to the shopkeeper. The shopkeeper sells the article to the customer at a discount of 5% of the marked price. Sales tax (under VAT) is charged at the rate of 12% at every stage. Find:

- (i) VAT paid by the shopkeeper to the government.
- (ii) The total amount paid by the customer inclusive of tax.

## Solution:

Let MP be marked price, SP be selling price, d be the discount and disc be the discount amount. Then,

$$disc = MP \times \frac{d}{100} \quad \dots(1)$$

$$SP = MP - disc \quad \dots(2)$$

Now let s be the sales tax and t be the tax amount. Therefore,

$$t = SP \times \frac{s}{100} \quad \dots(3)$$

Marked Price = Rs.45,000/-

Sales Tax = 12%

Discount for shopkeeper = 10%

Discount amount for shopkeeper =

$$45000 \times \frac{10}{100} = Rs.4500 \quad \dots by (1)$$

Selling Price for shopkeeper =

$$45000 - 4500 = Rs.40500 \quad \dots by (2)$$

Sales Tax for shopkeeper =

$$40500 \times \frac{12}{100} = Rs.4860 \quad \dots by (3)$$

Discount for customer = 5%

Discount amount for customer =

$$45000 \times \frac{5}{100} = Rs.2250 \quad \dots by (1)$$

Selling Price for customer =

$$45000 - 2250 = Rs.42750 \quad \dots by (2)$$

Sales tax for customer =

$$42750 \times \frac{12}{100} = Rs.5130 \quad \dots by (3)$$

Hence,

i) Tax for customer - Tax for shopkeeper =  
VAT paid by shopkeeper to government

$$= 5130 - 4860 = \boxed{Rs.270}$$

ii) Selling price for customer + Tax for customer = Total amount paid by customer

$$= 42750 + 5130 = \boxed{Rs.47880}$$

The output of the program used for verification:

```
VAT paid to government by shopkeeper = Rs.270  
Amount paid by customer inclusive of tax = Rs.47880
```