

Case Study 3

Mr. Sharma wants to buy a high-end LED Television for his family. The cost of the television is Rs 40,000. However, instead of paying the full amount upfront, the store offers him a credit scheme. Under this scheme, Mr. Sharma pays a certain amount as a down payment and the remaining balance is treated as a loan that he must repay with simple interest. Mr. Sharma pays Rs 10,000 immediately and agrees to treat the remaining Rs 30,000 as a principal amount to be paid back after a period of 2.5 years.

The store charges an annual interest rate of 12% on the unpaid balance. Mr. Sharma is a salaried employee and wants to calculate his total liability to ensure he can manage his monthly expenses while saving up for the final payment. He realizes that by opting for this plan, he is paying more than the actual price of the TV, but it allows him to keep his current savings intact for emergencies. He needs to find out the exact interest and the final amount he will owe the store at the end of the tenure.

1. What is the Principal (P) amount on which the simple interest will be calculated in this specific case?

- (A) Rs 40,000
- (B) Rs 10,000
- (C) Rs 30,000
- (D) Rs 50,000

Answer: (C) Rs 30,000

Solution: The interest is calculated on the loan amount (the unpaid balance). Since Mr. Sharma paid Rs 10,000 upfront, the Principal is $40,000 - 10,000 = 30,000$.

2. Convert the time period of 2.5 years into a fraction to be used in the Simple Interest formula.

- (A) $2/5$ years
- (B) $5/2$ years
- (C) $1/2.5$ years
- (D) $25/100$ years

Answer: (B) $5/2$ years

Solution: 2.5 can be written as $2\frac{1}{2}$, which is an improper fraction: $\frac{(2 \times 2) + 1}{2} = \frac{5}{2}$.

3. Calculate the total Simple Interest Mr. Sharma has to pay at the end of 2.5 years.

- (A) Rs 7,200
- (B) Rs 8,000
- (C) Rs 9,000
- (D) Rs 10,000

Answer: (C) Rs 9,000

Solution: $SI = \frac{P \times R \times T}{100}$.

$$SI = \frac{30000 \times 12 \times 2.5}{100} = 300 \times 12 \times 2.5 = 3600 \times 2.5 = 9000.$$

4. What is the total Amount Mr. Sharma pays back to the store (excluding the down payment) at the end of the term?

- (A) Rs 39,000

- (B) Rs 49,000
- (C) Rs 30,000
- (D) Rs 37,200

Answer: (A) Rs 39,000

Solution: Total Amount (A) = Principal (P) + Simple Interest (SI).

$$A = 30000 + 9000 = 39000.$$

5. What is the actual total cost of the Television for Mr. Sharma including the down payment and the interest paid?

- (A) Rs 40,000
- (B) Rs 49,000
- (C) Rs 47,200
- (D) Rs 52,000

Answer: (B) Rs 49,000

Solution: Total Cost = Down Payment + Final Amount Paid.

$$\text{Total Cost} = 10000 + 39000 = 49000.$$

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