

4. Commission, brokerage and discount

A. Activities

1. $B.G. = B.D. - \boxed{TD}$

$\therefore S = \text{simple interest @ } 4\% \text{ for 6 months on T. D.}$

$$\therefore \boxed{BG} = \frac{T.D. \times n.r.}{100}$$

$$\therefore S = T.D. \times \frac{6}{12} \times \frac{\boxed{4}}{100}$$

$$\therefore S \times 2 \times 25 = \boxed{TD}$$

$$\therefore T.D. = ₹ \boxed{400}$$

$$\therefore B.G. = B.D. - T.D.$$

$$\therefore S = B.D. - \boxed{400}$$

$$B.D. = ₹ \boxed{408}$$

$$B.D. = \frac{S.n.r.}{100}$$

$$\therefore 408 = S \times \frac{6}{12} \times \frac{\boxed{4}}{100}$$

$$\therefore S = 408 \times \boxed{2} \times 25$$

$$\therefore S = ₹ \boxed{20,400}$$

2. Face value of the bill(s) = ₹ 2550

Rate of interest (r) = 5%

Date of drawing the bill = 18th Feb

Period of the bill = 9 months

Nominal due date = 18 Nov

Legal due date = 21st Nov Nov.

Date of discounting = 28th June

Number of days from date of discounting to legal due date

June	July	Aug	Sept	Oct	Nov	Total
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$$\boxed{02} + 31 + \boxed{31} + 30 + 31 + \boxed{21} = \boxed{146}$$

$$\therefore B.D. = \frac{S.n.r.}{100}$$

$$= 2550 \times \frac{146}{365} \times \frac{\boxed{5}}{100} = ₹ 51$$

$$\therefore \text{B. D.} = \text{T. D.} \left(1 + \frac{\text{nr}}{100} \right)$$

$$51 = \text{T. D.} \left(1 + \frac{146}{365} \times \frac{5}{100} \right)$$

$$\therefore 51 = \text{T. D.} \left(1 + \frac{1}{50} \right)$$

$$\therefore \text{T. D.} = \frac{51 \times 50}{51} = ₹ 50$$

$$\therefore \text{B. G.} = \text{B. D.} - \text{T. D.}$$

$$= 51 - 50 \\ = ₹ 1$$

3. Total commission = 1050

Let the total sales be ₹ x

\therefore commission @ 6% on first ₹ 8000

$$= \frac{6}{100} \times 8000 = ₹ 480$$

\therefore commission @ $9\frac{1}{2}\%$ on balance

$$= \frac{19}{200} \times [x - 8000]$$

$$\text{Total commission} = \frac{19}{200} \times (x - 8000) + 480$$

$$\therefore 1050 = \frac{19}{200} \times (x - 8000) + 480$$

$$\therefore \frac{19}{200} \times (x - 8000) = 570$$

$$\therefore x - 8000 = 6000$$

$$\therefore x = ₹ 14,000$$

$$\therefore \text{Total sales } (x) = ₹ 14000$$

Cost of each set = ₹ 200

$$\text{Number of sets sold} = \frac{14,000}{200} = 70$$

4. Total commission = ₹ 1,295

Rate of commission = 7%

$$\therefore \text{Total sales} = \frac{1295}{7} \times 100 \\ = \text{₹ } 18,500$$

$$\text{Sale excess of ₹ } 10,000 = \text{₹ } 18,500 - 10,000 \\ = \text{₹ } 8500$$

Rate of bonus = 2%

$$\therefore \text{Amount of bonus} = \frac{2}{100} \times 8500 \\ = \text{₹ } 170$$

B. Solve the Following

Q.1 A salesman is allowed $5\frac{1}{2}\%$ commission on the total sales made by him, plus a bonus of $\frac{1}{2}\%$ on the sales over ₹ 20000. If his total earning amounts to ₹ 3980, Find the sales made by him.

Soln: Let total sales made by salesman be ₹ x

Rate of commission on total sales = $5\frac{1}{2}\% = 5.5\%$

$$\text{Commission of Salesman} = \text{Total Sales} \times \text{Rate of Comm.} \\ = x \times 5.5\% = \frac{5.5x}{100} \quad \textcircled{1}$$

Sales above ₹ 20,000 = $x - 20,000$

$$\text{Rate of bonus of Salesman} = \frac{1}{2}\% \times (x - 20,000) \\ = \frac{1}{200} \times (x - 20,000) = \frac{x}{200} - 100 \quad \textcircled{2}$$

Total salesman earned = ₹ 3980

Total earning of sales = total commt. Bonus

$$\therefore 3980 = \frac{5.5x}{100} + \frac{x}{200} - 100 \quad \{ \text{from } \textcircled{1} \text{ & } \textcircled{2} \}$$

$$\therefore 3980 + 100 = \frac{(5.5x)2 + x}{200}$$

$$\therefore 4080 = \frac{11x + x}{20} \\ \boxed{x = 68000}$$

∴ Total sales made by Salesman = ₹ 68,000

Q.2 A wholesaler allows 25% trade discount and 5% cash discount. What will be the net price of an article marked at ₹ 1600?

Soln: Marked Price of the article = ₹ 1600

25% - Trade discount of marked price

$$= \frac{25}{100} \times 1600 = \text{Rs } 400$$

∴ Invoice price = $1600 - 400 = \text{Rs } 1200$

5% Cash discount on invoice price

$$= \frac{5}{100} \times 1200 = \text{Rs } 60$$

∴ Net price = $1200 - 60 = \text{Rs } 1140$

∴ Net price = Rs 1140

Q.3 Find the true discount, banker's discount and banker's gain on a bill of ₹ 4240 due six months hence at 9% p.a.

Soln: Here $FV = \text{Rs } 4240$, $n = \frac{6}{12} = \frac{1}{2}$ year

$$\& r = 9$$

$$\text{We have } B.D = \frac{FV \times n \times r}{100} = \frac{4240 \times \frac{1}{2} \times 9}{100}$$

$$\therefore B.D = \frac{2120 \times 9}{100} = \frac{19080}{100} = 190.80$$

∴ Banker's Discount $[B.D = \text{Rs } 190.80]$

Let the True Discount = Re x

$$\text{We have } B.D = T.D + \frac{T.D \times n \times r}{100}$$

$$\therefore 190.80 = x + \left(x \times \frac{1}{2} \times 9 \right) = x + \frac{9x}{200} = \frac{209x}{200}$$

$$\therefore 190.80 = \frac{209x}{200} \quad \therefore x = \frac{190.80 \times 200}{209}$$

∴ True Discount $x = \text{Rs } 182.58$

$$\text{Banker's gain } BG = B.D - T.D$$

$$= 190.80 - 182.58$$

∴ Banker's Gain $BG = \text{Rs } 8.22$

Sign of Teacher :