

#### 4. Commission, brokerage and discount

##### A. Activities

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

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

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

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

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

$$\therefore T. D. = ₹ \boxed{400}$$

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

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

$$B. D. = ₹ \boxed{408}$$

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

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

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

$$\therefore S = ₹ \boxed{20,400}$$

2. Face value of the bill(s) = ₹ 2550

Rate of interest (r) = 5%

Date of drawing the bill = 18<sup>th</sup> Feb

Period of the bill = 9 months

Nominal due date =  $\boxed{18^{th} Nov}$

Legal due date =  $\boxed{21^{st} Nov}$  Nov.

Date of discounting = 28<sup>th</sup> June

Number of days from date of discounting to legal due date

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

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

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

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

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

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

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

$$\begin{aligned} \therefore \text{B. G.} &= \text{B. D.} - \text{T. D.} \\ &= \boxed{51} - \boxed{50} \\ &= ₹ 1 \end{aligned}$$

3. Total commission = 1050

Let the total sales be ₹ x

$\therefore$  commission @ 6% on first ₹ 8000

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

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

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

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

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

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

$$\therefore x - 8000 = \boxed{6000}$$

$$\therefore x = ₹ 14,000$$

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

Cost of each set = ₹ 200

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

4. Total commission = ₹ 1,295

Rate of commission = 7%

$$\therefore \text{Total sales} = \frac{1295}{7} \times 100$$

$$= ₹ 18,500$$

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

$$= ₹ 8500$$

Rate of bonus = 2%

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

$$= ₹ 170$$

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 =  $5\frac{1}{2}\% = 5.5\%$   
 Commission of Salesman = Total sales  $\times$  Rate of comm.  
 $= x \times 5.5\% = \frac{5.5x}{100}$  — (1)

Sales above ₹ 20,000 =  $x - 20,000$   
 Rate of bonus of Salesman =  $\frac{1}{2}\% \times (x - 20,000)$   
 $= \frac{1}{200} \times (x - 20,000) = \frac{x}{200} - 100$  — (2)

Total salesman earned = ₹ 3980

Total earning of sales = total comm + Bonus  
 $\therefore 3980 = \frac{5.5x}{100} + \frac{x}{200} - 100$  {from (1) & (2)}

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

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

$$\therefore \boxed{x = 68000}$$

$\therefore$  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



$$25\% \text{ Trade discount of marked price} \\ = \frac{25}{100} \times 1600 = \text{Rs } 400$$

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

$$5\% \text{ Cash discount on invoice price} \\ = \frac{5}{100} \times 1200 = \text{Rs } 60$$

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

$$\therefore \boxed{\text{Net price} = \text{Rs } 1140}$$

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  $FV = \text{Rs } 4240$ ,  $n = \frac{6}{12} = \frac{1}{2} \text{ year}$   
 $\& \quad r = 9$

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

$$\therefore BD = \frac{2120 \times 9}{100} = \frac{19080}{100} = 190.80$$

$$\therefore \text{Banker's Discount } \boxed{BD = \text{Rs } 190.80}$$

Let the True Discount = Rs  $x$

$$\text{We have } BD = TD + \frac{TD \times n \times r}{100}$$

$$\therefore 190.80 = x + \left( \frac{x \times \frac{1}{2} \times 9}{100} \right) = x + \frac{9x}{200} = \frac{209x}{200}$$

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

$$\therefore \boxed{\text{True Discount } x = \text{Rs } 182.58}$$

$$\text{Banker's gain } BG = BD - TD$$

$$= 190.80 - 182.58$$

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

Sign of Teacher :