

Maharashtra State Board 12th Commerce Maths Solutions Chapter 1 Commission, Brokerage and Discount Ex 1.1

Question 1.

An agent charges a 12% commission on the sales. What does he earn if the total sale amounts to ₹ 48,000? What does the seller get?

Solution:

Rate of commission = 12%

Total sales = ₹ 48,000

Agent's commission = $12\% \times 48,000$

= ₹ 5,760

Amount received by the seller = Total sales – commission

= ₹ 48,000 – ₹ 5,760

= ₹ 42,240

Question 2.

A salesman receives a 3% commission on sales up to ₹ 50,000 and a 4% commission on sales over ₹ 50,000. Find his total income on the sale of ₹ 2,00,000.

Solution:

Total sales = ₹ 2,00,000

Rate of commission upto ₹ 50,000 = 3%

= $3\% \times 50,000$

= ₹ 1,500

Rate of commission on the sales over ₹ 50,000 = 4%

Sales over ₹ 50,000 is 2,00,000 – 50,000 = ₹ 1,50,000

Commission on sales over ₹ 50,000 = $4\% \times 1,50,000$ = ₹ 6,000

His total income = ₹ 1,500 + ₹ 6,000 = ₹ 7,500

Question 3.

Ms. Saraswati was paid ₹ 88,000 as commission on the sale of computers at the rate of 12.5%. If the price of each computer was ₹ 32,000, how many computers did she sell?

Solution:

Total commission = ₹ 88,000

Rate of commission = 12.5%

Let the number of computers sold be x

since price of each computer = ₹ 32,000

Total sales = ₹ 32,000x

Total commission = 12.5% of total sales

88,000 = $12.5\% \times 32,000x$

= $12.5\% \times 32,000x$

$x = \frac{88,000}{12.5\% \times 32}$

x = 22

Question 4.

Anita is allowed 6.5% commission on the total sales made by her, plus, a bonus of 12% on the sale over ₹ 20,000. If her total commission amounts to ₹ 3,400. Find the sales made by her.

Solution:

Let the total sales made by Anita be ₹ x

Rate of commission = 6.5% of total sales

= $6.5\% \times x$

= $65\% \times x$

$$= 13 \times 200$$

$$\text{Rate of bonus} = \frac{1}{2} \% \text{ of } (x - 20000)$$

$$= \frac{1}{200} \times (x - 20,000)$$

$$= \frac{x}{200} - 100$$

$$\text{Her total commission} = ₹3,400$$

$$\frac{13x}{200} + \frac{x}{200} - 100 = 3,400$$

$$\frac{14x}{200} = 3,500$$

$$x = \frac{3,500 \times 200}{14}$$

$$x = 50,000$$

Question 5.

Priya gets a salary of ₹ 15,000 per month and a commission of 8% on sales over ₹ 50,000. If she gets ₹ 17,400 in a certain month. Find the sales made by her in that month.

Solution:

Let the total sales made by Priya be ₹ x

Salary of Priya = ₹ 15,000

Commission = Total earning – salary

$$= ₹ 17,400 - ₹ 15,000$$

$$= ₹ 2,400$$

Commission = 8% on the sales over ₹ 50,000

$$2400 = \frac{8}{100} (x - 50000)$$

$$2,400 \times 100 \div 8 = x - 50,000$$

$$30,000 = x - 50,000$$

$$30,000 + 50,000 = x$$

$$\therefore x = ₹ 80,000$$

Question 6.

The income of the broker remains unchanged though the rate of commission is increased from 4% to 5%. Find the percentage reduction in the value of the business.

Solution:

Let the original value of business be ₹ 100

Original rate of commission = 4%

$$\therefore \text{Original commission} = \frac{4}{100} \times 100 = ₹ 4$$

Let the new value of business be ₹ x

The new rate of commission = 5%

$$\therefore \text{New commission} = \frac{5}{100} \times x = \frac{x}{20}$$

Given, original income = New income

$$4 = \frac{x}{20}$$

$$\therefore x = ₹ 80$$

Thus there is 20% reduction in the value of the business.

Question 7.

Mr. Pavan is paid a fixed weekly salary plus commission based on a percentage of sales made by him. If on the sale of ₹ 68,000 and ₹ 73,000 in two successive weeks, he received in all ₹ 9,880 and ₹ 10,180. Find his weekly salary and the rate of commission paid to him.

Solution:

Let the weekly salary of Mr. Pavan be ₹ x and the rate of commission paid to him be y%

Income = Weekly salary + Commission on the sales

$$\therefore 9,880 = x + \frac{y}{100} \times 68,000$$

$$\text{i.e. } 9,880 = x + 680y \dots\dots(1)$$

$$\text{Also, } 10,180 = x + \frac{y}{100} \times 73,000$$

$$\text{i.e. } 10,180 = x + 730y \dots\dots(2)$$

Subtracting (1) from (2), we get

$$50y = 300$$

$$\therefore y = 6$$

Substituting y = 6 in equation (1)

$$9,880 = x + 680(6)$$

$$\therefore 9,880 - 4,080 = x$$

$$\therefore x = 5,800$$

Weekly salary = ₹ 5,800

Rate of commission = 6%

Question 8.

Deepak's salary was increased from ₹ 4,000 to ₹ 5,000. The sales being the same, due to a reduction in the rate of commission from 3% to 2%, his income remained unchanged. Find his sales.

Solution:

Let Deepak's total sales be ₹ x

Original salary of Deepak = ₹ 4,000

Original rate of commission = 3%

His new salary = ₹ 5,000

New rate of commission = 2%

Original income = New income (given)

$$4000 + 3x100 = 5000 + 2x100$$

$$3x100 - 2x100 = 5,000 - 4,000$$

$$x100 = 1000$$

$$x = ₹ 1,00,000$$

$$\therefore \text{His total sales} = ₹ 1,00,000$$

Question 9.

An agent is paid a commission of 7% on cash sales and 5% on credit sales made by him. If on the sale of ₹ 1,02,000 the agent claims a total commission of ₹ 6,420, find his cash sales and credit sales.

Solution:

Total Sales = ₹ 1,02,000

Let cash sales ₹ x

$$\therefore \text{Credit sales} = ₹ (1,02,000 - x)$$

Agent's commission on cash sales = 7%

$$= 7100 \times x$$

$$= 7x100$$

Commission on credit sales = 5%

$$= 5100(1,02,000 - x)$$

Given, Total commission = ₹ 6,420

$$\therefore 7x100 + 5100(1,02,000 - x) = 6420$$

$$\therefore 7x100 + 5100 - 5x100 = 6,420$$

$$\therefore 2x100 = 6,420 - 5,100$$

$$\therefore 2x100 = 1320$$

$$\therefore x = ₹ 66,000$$

$$\therefore \text{Cash sales} = ₹ 66,000$$

$$\therefore \text{Credit sales} = 1,02,000 - 66,000 = ₹ 36,000$$

Question 10.

Three cars were sold through an agent for ₹ 2,40,000, ₹ 2,22,000 and ₹ 2,25,000 respectively. The rates of the commission were 17.5% on the first, 12.5% on the second. If the agent overall received 14% commission on the total sales, find the rate of commission paid on the third car.

Solution:

Total selling price of three cars = 2,40,000 + 2,22,000 + 2,25,000 = ₹ 6,87,000

Commission on total sales = 14%

$$= 14100 \times 6,87,000$$

$$= ₹ 96,180$$

Selling price of first car = ₹ 2,40,000

Rate of commission = 17.5% = 17.5100 × 2,40,000

$$\therefore \text{Commission on first car} = ₹ 42,000$$

Selling price of second car = ₹ 2,22,000

Rate of commission = 12.5% = 12.5100 × 2,22,000

$$\therefore \text{Commission on second car} = ₹ 27,750$$

Selling price of third car = ₹ 2,25,000

Let the rate of commission be x%

Commission on third car = x100 × 2,25,000

$$96,180 - (42,000 + 27,750) = x100 \times 2,25,000$$

$$26,430 \times 100 / 2,25,000 = x$$

$$\therefore x = 11.75$$

$$\therefore \text{Rate of commission on the third car} = 11.75\%$$

Question 11.

Swatantra Distributors allows a 15% discount on the list price of the washing machines. Further 5% discount is given for cash payment.

Find the list price of the washing machine if it was sold for the net amount of ₹ 38,356.25.

Solution:

Let the list price of the washing machine be ₹ 100

Trade discount = 15% = $\frac{15}{100} \times 100 = ₹ 15$

∴ Invoice price = $100 - 15 = ₹ 85$

Cash discount = 5% = $\frac{5}{100} \times 85 = ₹ 4.25$

∴ Net price = $85 - 4.25 = ₹ 80.75$

Thus if List price is 100 then Net price is 80.75

if List price is x then Net price is 38,356.25.

∴ $x = \frac{38356.25 \times 100}{80.75}$

∴ $x = ₹ 47,500$

The list price of the washing machine is ₹ 47,500

Question 12.

A bookseller received ₹ 1,530 as a 15% commission on the list price. Find the list price of the books.

Solution:

Let the list price of the books be ₹ x

Rate of commission = 15%

Book seller's commission = ₹ 1,530

∴ $\frac{15}{100} \times x = 1,530$

∴ $x = \frac{1,530 \times 100}{15}$

∴ $x = ₹ 10,200$

Question 13.

A retailer sold a suit for ₹ 8,832 after allowing an 8% discount on market price and a further 4% cash discount. If he made 38% profit, find the cost price and the market price of the suit.

Solution:

Let the marked price of the suit be ₹ 100

Trade discount = 8% = $\frac{8}{100} \times 100 = ₹ 8$

Invoice price = $100 - 8 = ₹ 92$

Cash discount = 4% = $\frac{4}{100} \times 92 = ₹ 3.68$

∴ Net price = $92 - 3.68 = ₹ 88.32$

Thus if list price is 100 then net price is 88.32, if list price is x then net price is 8,832

∴ $x = \frac{8,832 \times 100}{88.32}$

∴ $x = ₹ 10,000$

The retailer made 38% profit.

Let the CP of the suit be ₹ 100

∴ SP of the suit = $100 + 38 = ₹ 138$

Thus if the SP of the suit is ₹ 138 then its CP is ₹ 100

If the SP of the suit is 88.32 then its

CP = $\frac{88.32 \times 100}{138} = ₹ 6400$

Question 14.

An agent charges 10% commission plus 2% delcredere. If he sells goods worth ₹ 37,200, find his total earnings.

Solution:

Total sales = ₹ 37,200

Rate of commission = 10%

Agents commission = $\frac{10}{100} \times 37200 = ₹ 3720$

Rate of delcredere = 2%

Amount of delcredere = $\frac{2}{100} \times 37,200 = ₹ 744$

Total earning of the agent = ₹ 3,720 + ₹ 744 = ₹ 4,464

Question 15.

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

Solution:

Marked price of the article = ₹ 1,600

Trade discount = 25%

= $\frac{25}{100} \times 1,600$

= ₹ 400

∴ Invoice price = $1,600 - 400 = ₹ 1,200$

Cash discount = 5%

= $\frac{5}{100} \times 1,200$

= ₹ 60

∴ Net price = $1,200 - 60 = ₹ 1,140$

Maharashtra State Board 12th Commerce Maths Solutions Chapter 1 Commission, Brokerage and Discount Ex 1.2

Question 1.

What is the present worth of a sum of ₹ 10,920 due six months hence at 8% p.a simple interest?

Solution:

Given, SD = ₹ 10,920

$n = \frac{6}{12}$ year = $\frac{1}{2}$ year

$r = 8\%$

We have,

$$\begin{aligned} \text{SD} &= \text{PW} \left(1 + \frac{nr}{100} \right) \\ 10,920 &= \text{PW} \left(1 + \frac{1 \times 8}{2 \times 100} \right) \\ \therefore 10,920 &= \text{PW} \left(\frac{26}{25} \right) \\ \therefore \text{PW} &= \frac{10,920 \times 25}{26} \\ &= ₹ 10,500 \end{aligned}$$

Thus the present worth is ₹ 10,500

Question 2.

What is the sum due of ₹ 8,000 due 4 months at 12.5% simple interest?

Solution:

Given, PW = ₹ 8,000, $n = \frac{4}{12}$ year = $\frac{1}{3}$ year, $r = 12.5\%$

We have,

$$\begin{aligned} \text{SD} &= \text{PW} \left(1 + \frac{n}{100} \right) \\ &= 8,000 \left(1 + \frac{1 \times 12.5}{3 \times 100} \right) \\ &= 8,000 \left(1 + \frac{1}{24} \right) \\ &= 8,000 \left(\frac{25}{24} \right) \\ &= ₹ 8,333.33 \end{aligned}$$

Thus, the sum due is ₹ 8,333.33

Question 3.

The true discount on the sum due 8 months hence at 12% p.a. is ₹ 560. Find the sum due and present worth of the bill.

Solution:

Given, TD = ₹ 560, $n = \frac{8}{12}$ year = $\frac{2}{3}$ year, $r = 12\%$

We have,

$$\text{TD} = \text{PW} \times n \times r \times 100$$

$$\therefore 560 = \text{PW} \times \frac{2}{3} \times 12 \times 100$$

$$\therefore \text{PW} = \frac{560 \times 3}{2 \times 12} = ₹ 7,000$$

Now, SD = PW + TD

$$= 7,000 + 560$$

$$= ₹ 7,560$$

Question 4.

The true discount on a sum is $\frac{3}{8}$ of the sum due at 12% p.a. Find the period of the bill.

Solution:

$$\begin{aligned} \text{TD} &= \frac{3}{8} \text{SD} \\ \frac{\text{PW} \times n \times r}{100} &= \frac{3}{8} \text{PW} \left(1 + \frac{n \times r}{100} \right) \\ \frac{8 \times n \times r}{100} &= 3 \left(\frac{100 + n \times r}{100} \right) \end{aligned}$$

$$8 \times n \times 12 = 3(100 + n \times 12)$$

$$96n = 300 + 36n$$

$$60n = 300$$

$$\therefore n = 5$$

\therefore Period of the bill = 5 years.

Question 5.

20 copies of a book can be purchased for a certain sum payable at the end of 6 months and 21 copies for the same sum in ready cash.

Find the rate of interest.

Solution:

Given, $n = \frac{6}{12}$ year = $\frac{1}{2}$ year

Let the sum payable be ₹ x

Let the rate of interest be r%

According to given condition,

PW of one book = $\frac{x}{21}$

SD of one book = $\frac{x}{20}$

$$SD = PW \left(1 + \frac{n \times r}{100} \right)$$

$$\frac{x}{20} = \frac{x}{21} \left(1 + \frac{1 \times r}{2 \times 100} \right)$$

$$\frac{21}{20} = 1 + \frac{r}{200}$$

$$\frac{r}{200} = \frac{1}{20}$$

$$\therefore r = 10\%$$

Thus, the rate of interest is 10%.

Question 6.

Find the true discount, Banker's discount, and Banker's gain on a bill of ₹ 4,240 due 6 months hence at 9% p.a.

Solution:

$$\text{Given, FV} = ₹ 4,240, n = \frac{6}{12} = \frac{1}{2} \text{ year, } r = 9\%$$

$$\text{We have BD} = \frac{\text{FV} \times n \times r}{100} = \frac{4,240 \times 1 \times 9}{2 \times 100} = ₹ 190.80$$

$$\text{Also, BD} = \text{TD} \left(1 + \frac{n \times r}{100} \right)$$

$$190.80 = \text{TD} \left(1 + \frac{1 \times 9}{2 \times 100} \right)$$

$$\therefore \text{TD} = \frac{190.80 \times 200}{209} = ₹ 182.58$$

And, Banker's Gain (BG) = BD – TD

$$= 190.80 - 182.58$$

$$= ₹ 8.22$$

Question 7.

The true discount on a bill is ₹ 2,200 and bankers discount is ₹ 2,310. If the bill is due 10 months, hence, find the rate of interest.

Solution:

Given, TD = ₹ 2,200, BD = ₹ 2,310

$n = \frac{10}{12} = \frac{5}{6}$ year

$$\text{We have, BD} = \text{TD} \left(1 + \frac{n \times r}{100} \right)$$

$$2,310 = 2,200 \left(1 + \frac{5 \times r}{6 \times 100} \right)$$

$$\frac{2,310}{2,200} = 1 + \frac{r}{120}$$

$$\therefore \frac{r}{120} = \frac{110}{2,200}$$

$$\therefore r \times 120 = 120$$

$$\therefore r = 6\%$$

Thus, rate of interest is 6%

Question 8.

A bill of ₹ 6,395 drawn on 19th January 2015 for 8 months was discounted on 28th February 2015 at 8% p.a. interest. What is the banker's discount? What is the cash value of the bill?

Solution:

Face value = ₹ 6,395

Date of drawing = 19/01/2015

Period of the bill = 8 months

Nominal Due date = 19/09/2015

Legal due date = 22/09/2015

Date of discounting = 28/02/2015

Now, the unexpired period = Legal due date – Date of discounting

= 22/09/2015 – 28/02/2015

= days (as shown below)

Cash Value = FV – BD

= 6,395 – 313.12

= ₹ 6,621.38

Question 9.

A bill of ₹ 8,000 drawn on 5th January 1998 for 8 months was discounted for ₹ 7,680 on a certain date. Find the date on which it was discounted at 10% p.a.

Solution:

Bankers discount (BD) = FV – cash value

= 8,000 – 7,680

= ₹ 320

Let the unexpired period be x days

$\therefore BD = FV \times x \times r \div 365 \times 100$

$\therefore 320 = 8,000 \times x \times 10 \div 365 \times 100$

$\therefore x = 146$ days

\therefore The unexpired days = 146 days

Date of drawing = 05/01/1998

Period of bill = 8 months

Nominal due date = 05/09/1998

Legal due date = 08/09/1998

Thus, the date of discounting is 146 days before the legal due date

Sep	Aug	July	June	May	April	Total
8	31	31	30	31	15	146 days

\therefore Date of discounting of the bill is 15th April 1998

Question 10.

A bill drawn on 5th June for 6 months was discounted at the rate of 5% p.a. on 19th October. If the cash value of the bill is ₹ 43,500, find the face value of the bill.

Solution:

Date of drawing = 5th June

Period of bill = 6 months

Nominal due date = 5th December

Legal due date = 8th December

Date of discounting = 19th October

Rate of interest = 5% p.a.

Let the face value of the bill be ₹ x

The unexpired period

October	November	December	Total
12	30	8	50 days

$$\begin{aligned} \text{BD} &= \frac{\text{FV} \times n \times r}{365 \times 100} \\ &= \frac{x \times 50 \times 5}{365 \times 100} \end{aligned}$$

$$\text{Also BD} = \text{FV} - \text{CV}$$

$$= x - 43,500$$

$$\therefore x - 43,500 = \frac{x \times 50 \times 5}{365 \times 100}$$

$$x - 43,500 = \frac{x}{146}$$

$$\therefore x - \frac{x}{146} = 43,500$$

$$\frac{145x}{146} = 43,500$$

$$\therefore x = ₹43,800$$

Question 11.

A bill was drawn on 14th April for ₹ 7,000 and was discounted on 6th July at 5% p.a. The Banker paid ₹ 6,930 for the bill. Find the period of the bill.

Solution:

Face value = ₹ 7,000, cash value = ₹ 6,930

\therefore Banker's discount = 7,000 – 6,930 = ₹ 70

Date of drawing = 14/04

Date of discounting = 06/07

Rate of interest = 5%

Let the unexpired period = x days

$$\therefore \text{BD} = 7,000 \times x \times 5 \times 100$$

$$\therefore 70 = 70 \times x \times 73$$

$$\therefore x = 73 \text{ days}$$

\therefore Legal due date of the bill is 73 days after the date of discounting.

July	August	September	Total
25	31	17	73 days

\therefore Legal due date = 17/09

\therefore Nominal due date = 14/09

\therefore Period of the bill = 5 months

Question 12.

If the difference between true discount and banker's discount on a sum due 4 months hence is ₹ 20. Find true discount, banker's discount and amount of bill, the rate of simple interest charged is 5% p.a.

Solution:

Banker's gain (BG) = Banker's discount (BD) – True Discount (TD)

$$\therefore \text{BG} = ₹ 20$$

$$\text{Also, BG} = \text{TD} \times n \times r \times 100$$

$$\therefore 20 = \text{TD} \times 4 \times 5 \times 12 \times 100$$

$$\therefore 20 = \text{TD} \times 60$$

$$\therefore \text{TD} = ₹ 1200$$

Now, BD = BG + TD

$$= 20 + 1,200$$

$$= ₹ 1,220$$

$$\text{Also, BD} = \text{FV} \times n \times r \times 100$$

$$\therefore 1,220 = \text{FV} \times 4 \times 5 \times 12 \times 100$$

$$\therefore \text{FV} = 1,200 \times 60 = ₹ 73,200$$

$$\therefore \text{Amounting the bill} = ₹ 73,200$$

Question 13.

A bill of ₹ 51,000 was drawn on 18th February 2010 for 9 months. It was encashed on 28th June 2010 at 5% p.a. Calculate the banker's gain and true discount.

Solution:

Face Value = ₹ 51,000

Date of drawing = 18/02/2010

Period of the bill = 9 months

Nominal due date = 18/11/2010

Legal due date = 21/11/2010

Date of discounting = 28/06/2010

Unexpired period

June	July	August	Sept	Oct	Nov	Total
02	31	31	30	31	21	146 days

$$\therefore \text{BD} = \frac{51,000 \times 146 \times 5}{365 \times 100}$$

$$= ₹1,020$$

$$\text{Now, BD} = \text{TD} \left(1 + \frac{n \times r}{365 \times 100} \right)$$

$$1,020 = \text{TD} \left(1 + \frac{146}{365} \times \frac{5}{100} \right)$$

$$1,020 = \text{TD} \left(\frac{51}{50} \right)$$

$$\therefore \text{TD} = ₹ 1,000$$

$$\therefore \text{BG} = \text{BD} - \text{TD}$$

$$= 1,020 - 1,000$$

$$= ₹ 20$$

Question 14.

A certain sum due 3 months hence is $\frac{21}{20}$ of the present worth, what is the rate of interest.

Solution:

$$\text{SD} = \frac{21}{20} \text{PW}$$

$$\text{PW} \left(1 + \frac{n \times r}{100} \right) = \frac{21}{20} \text{PW}$$

$$\left(1 + \frac{3}{12} \times \frac{r}{100} \right) = \frac{21}{20}$$

$$1 + \frac{r}{400} = \frac{21}{20}$$

$$\frac{r}{400} = \frac{1}{20}$$

$$r = 20\%$$

Question 15.

A bill of a certain sum drawn on 28th February 2007 for 8 months was encashed on 26th March 2007 for ₹ 10,992 at 14% p.a. Find the face value of the bill.

Solution:

Date drawing = 28/02/2007

Period of the bill = 8 months

Nominal due date = 28/10/2007

Legal due date = 31/10/2007

Date of discounting = 26/03/2007

Cash value = ₹ 10,992

Rate of interest = 14%

Let face value of the bill = ₹ x

Bankers discount = Face value – Cash value = x – 10,992

Also, Banker's discount = $FV \times n \times r / 365 \times 100$

Where n is the unexpired days

Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Total
05	30	31	30	31	31	30	31	219 days

$$\therefore x - 10,992 = \frac{x \times 219 \times 14}{365 \times 100}$$

$$x - 10,992 = \frac{42x}{500}$$

$$x - \frac{42x}{500} = 10,992$$

$$\frac{458x}{500} = 10,992$$

$$\therefore x = \frac{10,992 \times 500}{458} = ₹12,000$$

Thus face value of the bill = ₹ 12,000

Maharashtra State Board 12th Commerce Maths Solutions Chapter 1 Commission, Brokerage and Discount Miscellaneous Exercise 1

(I) Choose the correct alternative.

Question 1.

An agent who gives a guarantee to his principal that the party will pay the sale price of goods is called

- (a) Auctioneer
- (b) Del Credere Agent
- (c) Factor
- (d) Broker

Answer:

- (b) Del Credere Agent

Question 2.

An agent who is given the possession of goods to be sold is known as

- (a) Factor
- (b) Broker
- (c) Auctioneer
- (d) Del Credere Agent

Answer:

- (a) Factor

Question 3.

The date on which the period of the bill expires is called

- (a) Legal Due Date
- (b) Grace Date
- (c) Nominal Due Date
- (d) Date of Drawing

Answer:

- (c) Nominal Due Date

Question 4.

The payment date after adding 3 days of grace period is known as

- (a) The legal due date
- (b) The nominal due date
- (c) Days of grace
- (d) Date of drawing

Answer:

- (a) The legal due date

Question 5.

The sum due is also called as

- (a) Face value
- (b) Present value
- (c) Cash value
- (d) True discount

Answer:

- (a) Face value

Question 6.

P is the abbreviation of

- (a) Face value
- (b) Present worth
- (c) Cash value
- (d) True discount

Answer:

- (b) Present worth

Question 7.

Banker's gain is the simple interest on

- (a) Banker's discount
- (b) Face Value
- (c) Cash value
- (d) True discount

Answer:

- (d) True discount

Question 8.

The marked price is also called as

- (a) Cost price
- (b) Selling price
- (c) List price
- (d) Invoice price

Answer:

- (c) List price

Question 9.

When only one discount is given then

- (a) List price = Invoice price
- (b) Invoice price = Net selling price
- (c) Invoice price = Cost price
- (d) Cost price = Net selling price

Answer:

- (b) Invoice price = Net selling price

Question 10.

The difference between the face value and present worth is called

- (a) Banker's discount
- (b) True discount
- (c) Banker's gain
- (d) Cash value

Answer:

- (b) True discount

(II) Fill in the blanks.

Question 1.

A person who draws the bill is called _____

Answer:

Drawee

Question 2.

An _____ is an agent who sells the goods by auction.

Answer:

Auctioneer

Question 3.

Trade discount is allowed on the _____ price.

Answer:

Catalogue/List

Question 4.

The banker's discount is also called _____.

Answer:

Commercial Discount

Question 5.

The banker's discount is always _____ than the true discount.

Answer:

higher

Question 6.

The difference between the banker's discount and the true discount is called _____.

Answer:

bankers gain

Question 7.

The date by which the buyer is legally allowed to pay the amount is known as _____.

Answer:

legal due date

Question 8.

A _____ is an agent who brings together the buyer and the seller.

Answer:

broker

Question 9.

If buyer is allowed both trade and cash discounts, _____ discount is first calculated on _____ price.

Answer:

Trade, Catalogue/List

Question 10.

_____ = List price (catalogue Price) – Trade Discount.

Answer:

Invoice Price

(III) State whether each of the following is True or False.

Question 1.

A broker is an agent who gives a guarantee to the seller that the buyer will pay the sale price of goods.

Answer:

False

Question 2.

A cash discount is allowed on the list price.

Answer:

False

Question 3.

Trade discount is allowed on catalogue price.

Answer:

True

Question 4.

The buyer is legally allowed 6 days grace period.

Answer:

False

Question 5.

The date on which the period of the bill expires is called the nominal due date.

Answer:

True

Question 6.

The difference between the banker's discount and true discount is called sum due.

Answer:

False

Question 7.

The banker's discount is always lower than the true discount.

Answer:

False

Question 8.

The banker's discount is also called a commercial discount.

Answer:

True

Question 9.

In general cash, the discount is more than trade discount.

Answer:

False

Question 10.

A person can get both, trade discount and a cash discount.

Answer:

True

(IV) Solve the following problems.

Question 1.

A salesman gets a commission of 6.5% on the total sales made by him and a bonus of 1% on sales over ₹ 50,000. Find his total income on a turnover of ₹ 75,000.

Solution:

Rate of commission = 6.5% on the total sales

∴ Commission on a turnover of ₹ 75,000

$= 6.5100 \times 75,000$

$= ₹ 4,875$

Rate of bonus = 1% on sales over ₹ 50,000

∴ Amount of bonus = $1100 \times (75,000 - 50,000) = ₹ 250$

∴ Total income of the sales man = ₹ 4,875 + ₹ 250 = ₹ 5,125

Question 2.

A shop is sold at 30% profit, the amount of brokerage at the rate of 34% amounts to ₹ 73,125. Find the cost of the shop.

Solution:

Rate of brokerage = 34%

Amount of brokerage = ₹ 73,125

Let the selling price of the shop be ₹ 100 then the brokerage = ₹ 34

Thus, if the amount of brokerage is ₹ 34 then the selling price of the shop is ₹ 100

If the amount of brokerage is ₹ 73,125, then the selling price of the shop is $= 73125 \times 43 \times 100 = ₹ 97,50,000$

The shop is sold at 30% profit

∴ If the cost of the shop is ₹ 100, then it is sold at ₹ 130

Thus, if the shop is sold at ₹ 130, then its cost price is ₹ 100

If the shop is sold at ₹ 97,50,000 then its cost price is $= 97,50,000 \times 100130 = ₹ 75,00,000$

Then, the cost of the shop is ₹ 75,00,000

Question 3.

A merchant gives 5% commission and 1.5% delcredere to his agents. If the agent sells goods worth ₹ 30,600 how much does he get?

How much does the merchant receive?

Solution:

Rate of commission = 5%

Total sales = ₹ 30,600

Amount of commission = $5100 \times 30,600$

Rate of delcredere = 1.5%

$= 1.5100 \times 30,600$

$= ₹ 459$

Thus, the agents gets $1,530 + 459 = ₹ 1,989$

And the merchant receives $= 30,600 - 1,989 = ₹ 28,611$

Question 4.

After deducting commission at 7½% on first ₹ 50,000 and 5% on the balance of sales made by him, an agent remits ₹ 93,750 to his principal. Find the value of goods sold by him.

Solution:

Rate of commission = 7½% on first ₹ 50,000

$= 7.5100 \times 50,000$

$$= ₹ 3,750$$

Let the total sales be ₹ x

Rate of commission on the balance sales = 5%

$$\text{Commission on the balance sales} = \frac{5100}{100} \times (x - 50000) = x20 - 2,500$$

$$\text{Total commission} = 3750 + x20 - 2,500 = x20 + 1,250$$

Now, the amount to be remitted to the principal = Value of goods sold – Commission of the agent

$$= x - (x20 + 1250)$$

$$= 19x20 - 1250$$

The agents remits ₹ 93,750 to his principal

$$\therefore 19x20 - 1,250 = 93,750$$

$$\therefore 19x20 = 95,000$$

$$\therefore x = ₹ 1,00,000$$

Thus, the value of the goods sold by the agent is ₹ 1,00,000

Question 5.

The present worth of ₹ 11,660 due 9 months hence is ₹ 11,000. Find the rate of interest.

Solution:

Given, PW = ₹ 11,000, SD = ₹ 11,660

n = $\frac{9}{12}$ year = $\frac{3}{4}$ year

We have,

$$SD = PW \left(1 + \frac{n \times r}{100} \right)$$

$$11,660 = 11,000 \left(1 + \frac{3 \times r}{4 \times 100} \right)$$

$$\frac{1,166}{1,100} = 1 + \frac{3r}{400}$$

$$\frac{3r}{400} = \frac{66}{1,100}$$

$$r = \frac{66 \times 4}{11 \times 3}$$

$$\therefore r = 8$$

\therefore The rate of interest is 8% p.a.

Question 6.

An article is marked at ₹ 800, a trader allows a discount of 2.5% and gains 20% on the cost. Find the cost price of the article?

Solution:

Marked price of the article = ₹ 800

Rate of discount = 2.5%

$$\text{Amount of discount} = \frac{2.5100}{100} \times 800 = ₹ 20$$

$$\therefore \text{Selling price of the article} = 800 - 20 = ₹ 780$$

Now, given, gain = 20%

Let cost price of the article be ₹ 100, then

The selling price of the article is ₹ 120

Thus if cost price of the articles is ₹ x

Then the selling price is ₹ 780

$$\therefore x = \frac{780 \times 100}{120}$$

$$\therefore x = 650$$

\therefore Cost price of the article is ₹ 650

Question 7.

A salesman is paid a fixed monthly salary plus commission on the sales. If on sale of ₹ 96,000 and ₹ 1,08,000 in two successive months he receives in all ₹ 17,600 and ₹ 18,800 respectively. Find his monthly salary and rate of commission paid to him.

Solution:

Let the monthly salary of the salesman be ₹ x

And the rate of commission be y%

Income = monthly salary + commission on the sales

$$17600 = x + \frac{y100}{100} \times 96,000$$

$$\therefore 17600 = x + 960y \dots\dots\dots(1)$$

$$\text{and } 18800 = x + \frac{y100}{100} \times 108000$$

$$\therefore 18,800 = x + 1080y \dots\dots\dots(2)$$

Subtracting equation (1) from equation (2), we get

$$1,200 = 120y$$

$$\therefore y = 10$$

Substituting y = 10 in (1), we get

$$17,600 = x + 960(10)$$

$$\therefore x = 17,600 - 9,600 = 8,000$$

$$\therefore \text{Salary of the salesman} = ₹ 8,000$$

$$\text{Rate of commission} = 10\%$$

Question 8.

A merchant buys some mixers at a 15% discount on catalogue price. The catalogue price is ₹ 5,500 per price of the mixer. The freight charges amount to 2½% on the catalogue price. The merchant sells each mixer at a 5% discount on the catalogue price. His net profit is ₹ 41,250, Find the number of mixers.

Solution:

$$\text{Catalogue price of a mixer} = ₹ 5,500$$

$$\text{Trade discount} = 15\% \text{ on catalogue price}$$

$$= \frac{15}{100} \times 5,500$$

$$= ₹ 825$$

$$\text{Freight charges} = 2\frac{1}{2}\% \text{ of the catalogue price}$$

$$= \frac{5}{2} \times \frac{11}{100} \times 5,500$$

$$= ₹ 137.5$$

$$\therefore \text{Cost price of a mixer for the merchant} = 5,500 - 825 + 137.5 = 4,812.5$$

$$\text{Catalogue price} = ₹ 5,500$$

$$\text{Rate of discount} = 5\%$$

$$\therefore \text{Selling price of one mixer} = 5,500 - \frac{5}{100} \times 5,500 = ₹ 5,225$$

$$\therefore \text{Profit on one mixer} = 5,225 - 4,812.5 = ₹ 412.5$$

$$\text{Now, total profit} = ₹ 41,250$$

$$\therefore \text{Number of mixers} = \frac{41,250}{412.5} = 100$$

Thus the number of mixers is 100.

Question 9.

A bill is drawn for ₹ 7,000 on 3rd May for 3 months and is discounted on 25th May at 5.5% Find the present worth.

Solution:

$$\text{Face value of the bill} = ₹ 7,000$$

$$\text{Date of drawing} = 3\text{rd May}$$

$$\text{Period} = 3 \text{ months}$$

$$\text{Normal due date} = 3\text{rd August}$$

$$\text{Legal due date} = 6\text{th August}$$

$$\text{Rate of interest} = 5.5\%$$

$$\text{Date of discounting} = 25\text{th May}$$

$$\text{Unexpired period (number of days from date of discounting to legal due date)}$$

May	June	July	August	Total
06	30	31	06	73 days

$$\therefore \text{Bankers discount} = 7,000 \times \frac{73}{365} \times \frac{5.5}{100} = ₹ 77$$

$$\text{Also PW} = \text{SD} - \text{BD}$$

$$= 7,000 - 77$$

$$= ₹ 6,923$$

$$\therefore \text{Present worth is ₹ 6,923}$$

Question 10.

A bill was drawn on 14th April 2005 for ₹ 3,500 and was discounted on 6th July 2005 at 5% per annum. The banker paid ₹ 3,465 for the bill. Find the period of the bill.

Solution:

$$\text{Face value of the bill} = ₹ 3,500$$

$$\text{Date of drawing} = 14/04/2005$$

$$\text{Date of discount} = 06/07/2005$$

$$\text{Rate of interest} = 5\%$$

$$\text{Cash value} = ₹ 3,465$$

$$\text{Bankers discount} = \text{Face value} - \text{Cash value}$$

$$= 3,500 - 3,465$$

$$= ₹ 35$$

$$\text{Let the unexpired days be } n \text{ days}$$

$$\therefore \text{BD} = \text{FV} \times n \times \frac{5}{365} \times \frac{100}{100}$$

$$\therefore 35 = 3,500 \times n \times \frac{5}{365} \times \frac{100}{100}$$

$$\therefore n = 73 \text{ days}$$

Thus, legal due date is 73 days from the date of discounting

July	August	September	Total
25	31	17	73 days

$$\therefore \text{Legal due date} = 17/09/2005$$

∴ Nominal due date = 14/09/2005

∴ The period of the bill is 5 months

Question 11.

The difference between true discount and banker's discount on 6 months hence at 4% p.a. is ₹ 80. Find the true discount, banker's discount, and amount of the bill.

Solution:

$$BG = BD - TD$$

$$\therefore BG = ₹ 80$$

$$\text{Also } BG = TD \times n \times r \times 100$$

$$\therefore 80 = TD \times 6 \times 4 \times 12 \times 100$$

$$\therefore TD = \frac{80 \times 100}{2}$$

$$\therefore TD = ₹ 4,000$$

$$\text{Now } BD = TD + BG$$

$$= 4,000 + 80$$

$$= ₹ 4,080$$

$$\text{Also, } BD = FV \times n \times r \times 100$$

$$\therefore 4,080 = FV \times 6 \times 4 \times 12 \times 100$$

$$\therefore FV = \frac{4,080 \times 100}{2}$$

$$\therefore FV = ₹ 2,04,000$$

$$\text{Amount of the bill} = ₹ 2,04,000$$

Question 12.

A manufacturer makes a clear profit of 30% on the cost after allowing a 35% discount. If the cost of production rises by 20%, by what percentage should he reduce the rate of discount so as to make the same rate of profit keeping his list prices unaltered.

Solution:

Rate of discount = 35%

Let the list price be ₹ 100.

Then discount at 35% = ₹ 35

$$\therefore \text{Net selling price} = 100 - 35 = ₹ 65 \dots\dots(1)$$

The manufacturer makes a clear profit of 30% on the cost after allowing a 35% Discount.

Let the cost be ₹ 100.

Then selling price at 30% profit is $100 + 30 = ₹ 130$.

Thus, if the net selling price is ₹ 130, then the cost price is ₹ 100.

But, the net selling price is ₹ 130, then the cost price is ₹ 65[from (1)]

$$\therefore \text{The cost price is } \frac{65 \times 130}{100} = ₹ 50$$

Hence, we have,

Original List Price	Original Selling Price	New Cost Price
₹100	₹65	₹50

Now, the cost of production has increased by 20%.

Let the old cost price be ₹ 100.

∴ The new cost price is ₹ 120.

But, the old cost price is ₹ 50.

$$\therefore \text{The new cost price is } = \frac{50 \times 120}{100} = ₹ 60.$$

The old net price is ₹ 65.

$$\text{Now } 20\% \text{ of } ₹ 65 = \frac{20 \times 65}{100} = ₹ 13$$

$$\therefore \text{New net price} = 65 + 13 = ₹ 78$$

Hence, we have

New List Price	New Selling Price	New Cost Price
₹100	₹78	₹65

$$\text{Now, } 100 - 78 = ₹ 22$$

Thus, the rate of discount should be reduced by 22%, The original rate of discount is 35%.

Hence, the reduction in discount should be $(35 - 22)\% = 13\%$

so as to make the same rate of profit, keeping the list price unaltered.

Question 13.

A trader offers a 25% discount on the catalogue price of the radio and yet makes a 20% profit. If he gains ₹ 160 per radio, what must be the catalogue price of the radio?

Solution:

Rate of discount = 25% on the catalogue price of a radio.

Let the catalogue price of the radio be ₹ 100.

Then, the discount on a radio = ₹ 25.

Net selling price = $100 - 25 = ₹ 75$.

He makes a profit of 20%.

Let the cost price be ₹ 100.

Then, at 20% profit, net selling price = ₹ 120.

Thus, if net SP is ₹ 120, then cost price is ₹ 100.

But, the net SP is ₹ 75.

∴ The cost price is $75 \div 120 \times 100 = 750 \div 12 = ₹ 62.50$

∴ Profit on a radio set = $75 - 62.5 = ₹ 12.50$

Thus, if the profit on a radio set is ₹ 12.50 then its catalogue price is ₹ 100.

But the profit on a radio set is ₹ 160.

∴ The catalogue price of radio = $160 \div 12.50 \times 100$

= 12.80×100

= ₹ 1,280

∴ Thus, the catalogue price of the radio is ₹ 1280

Question 14.

A bill of ₹ 4,800 was drawn on 9th March 2006 at 6 months and was discounted on 19th April 2006 for 6¼% p.a. How much does the banker charge and how much does the holder receive?

Solution:

Face value of the bill = ₹ 4.800

Date of drawing = 09/03/2006

Period of the bill = 6 months

Normal due date = 09/09/2006

Legal due date = 12/09/2006

Rate of discount = 6¼% = 6.25%

Now, for the unexpired

Apr	May	Jun	Jul	Aug	Sept	Total
11	31	30	31	31	12	146 days

$$\begin{aligned} \text{BD} &= \frac{\text{FV} \times n \times r}{100} \\ &= \frac{4,800 \times 146 \times 6.25}{365 \times 100} \\ &= ₹ 120 \end{aligned}$$

Thus the banker charges ₹ 120

Amount received by the holder = $4,800 - 120 = ₹ 4,680$

Question 15.

A bill of ₹ 65,700 drawn on July 10 for 6 months was discounted for ₹ 65,160 at 5% p.a. On what day was the bill discounted?

Solution:

BD = FV – Cash value

= $65,700 - 65,160$

= ₹ 540

Let the unexpired days be x days

BD = $\frac{\text{FV} \times n \times r}{100}$

∴ $540 = \frac{65,700 \times x \times 5}{365 \times 100}$

∴ x = 60 days

The unexpired days = 60 days

Date-of drawing = 10th July

Period of the bill = 6 months

Nominal due date = 10th January (next year)

Legal due date = 13th January (next year)

Then the date of discount is 60 days before, the legal due date

January	December	November	Total
13	31	16	60 days

∴ The date of discounting is 14th November

Question 16.

An agent sold a car and charged a 3% commission on the sale value. If the owner of the car received ₹ 48,500, find the sale value of the car. If the agent charged 2% from the buyer, find his total remuneration.

Solution:

Let the sale value of the car be ₹ x

Rate of commission of the agent = 3%

Since the owner received ₹ 48,500 after agent has charged his commission

$x - 3\% \times 100 = 48500$

∴ $97\% \times 100 = 48500$

∴ $x = \frac{48,500 \times 100}{97}$

∴ x = ₹ 50,000

∴ Sale value of the car = ₹ 50,000

Against commission received from the owner = $3\% \times 50,000 = ₹ 1500$

Against commission received from the buyer = $2\% \times 50,000 = ₹ 1000$

∴ Agents total remuneration = $1,500 + 1,000 = ₹ 2,500$

Question 17.

An agent is paid a commission of 4% on cash sales and 6% on credit sales made by him. If on the sale of ₹ 51,000 the agent claims a total commission of ₹ 2,700, find the sales made by him for cash and on credit.

Solution:

Total sales = ₹ 51,000

Let cash sales be ₹ x

∴ Credit sales = ₹ $(51,000 - x)$

Agent's commission on cash sales = 4%

$$= \frac{4}{100} \times x$$

$$= \frac{4x}{100}$$

Commission on credit sales = 6%

$$= \frac{6}{100}(51,000 - x)$$

Given total commission = ₹ 2,700

$$\frac{4x}{100} + \frac{6}{100} (51,000 - x) = 2,700$$

$$\frac{4x}{100} + 3,060 - \frac{6x}{100} = 2,700$$

$$3,060 - 2,700 = \frac{6x}{100} - \frac{4x}{100}$$

$$\therefore \frac{2x}{100} = 360$$

$$\therefore x = 18,000$$

∴ Cash sales = ₹ 18,000

∴ Credit sales = $51,000 - 18,000 = ₹ 33,000$