7

AVERAGE DUE DATE AND ACCOUNT CURRENT

Unit 1 : Average Due Date

Learning Objectives

After studying this unit, you will be able to:

♦ Understand what is average due date and how to choose 0 (zero) day for calculating average due date.

♦ Learn calculation of average due date where amount is lent in various instalments.

♦ Calculate average due date for determining interest on drawings.

♦ Familiarize with the steps involved in calculation of average due date where amount is lent in one instalment but repayment is done in various instalments. Also understand days of grace and learn the technique of maturity date by counting the days of grace.

♦ Learn the technique of calculating due date when maturity is on a holiday.

1.1 Introduction

In business enterprises, a large number of receipts and payments by and from a single party may occur at different points of time. To simplify the calculation of interest involved for such transactions, the idea of average due date has been developed. In this Unit we shall elaborate the underlying principle of determining average due date covering the cases where the amount is lent in various instalments but repayment is made in a single instalment as well as where the amount is lent in one instalment but repayment is made by various instalments. The technique of average due date is also useful for calculating interest on drawings made by the proprietors or partners of a business firm at several points of time.

1.2 Types of Problems

There are two types of problems:

(1) Calculation of equated date when amount is lent in various instalments and repayment is made in one instalment.

(2) Calculation of equated date when amount is lent in one instalment and repayment is made in various instalments.

1.2.1 Case 1. Where amount is lent in various instalments

Calculation of average due date: Under this type of problem, average due date is calculated as follows :

a.   Take the earliest due date as starting day or base date or "O" day for convenience. Any date whatsoever, may also be taken as "O" day.

b.   Consider the number of days from base date up to each due date. Calculations may also be made in month.

c.   Multiply the number of days by the corresponding amounts.

d.   Add up the amount and products.

e.   Divide the "Product total" by "Amount total" and get result approximately upto a whole number. This number is the number of days from starting point upto the average due date.

f.   Count the above number of days from considering the number of days in each month involved.

   Thus the formula for the average due date can be under.

$$\text{Average due date} = \text{Base date} \pm \frac{\text{Total of products}}{\text{Total amounts}}$$

Illustration 1

The followings are the amounts due on different dates in between the same parties:

Amount	Due Date
₹	
500	3rd July
800	2nd August
1,000	11 September

Suggest a date on which all the bills may be paid out without any loss of interest to either party.

Solution

Considering 3rd July as the starting day the following table is prepared:

Due Dates	Amount	No. of Days from 3rd July	Products
3rd July	500	0	0
2nd August	800	30	24,000
11th September	1,000	70	70,000
	2,300		94,000

$$\text{Average Due Date} = \text{3rd July} + \frac{94,000}{2,300}$$

= 3rd July + 41 days = 13th August

Assuming 5% is interest rate, the debtor loses interest due to early payment of ₹ 1,000 for 29 days (from 13th August to 11th September) i.e., ₹ 4. He however, gains interest, due to late payment on ₹ 500 for 41 days from 3rd July to 13th August and on ₹ 800 for 11 days i.e. ₹ 2.80 + ₹ 1.20, i.e., ₹ 4. Thus the debtor neither loses nor gains by payment of all the amounts on 13th August.

It should be noted that in calculating the number of days only one of the dates, either the starting date or the due date is to be counted.

In the same fashion bill due to one party may be cancelled as against bills of same amount due from the same party after adjustment of interest for the period elapsing between the two average due dates. Instead of payment of several bills on the same date as above, other bill starting from the average due date for agreed period together with interest for the period may be accepted.

Illustration 2

Two traders X and Y buy goods from one another, each allowing the other one month's credit. At the end of 3 months the accounts rendered are as follows :

	Goods sold by X to Y			*Goods sold by Y to X*
	₹			*₹*
April 18	60.00	*April 23*		52.00
May 15	70.00	*May 24*		50.00
June 16	80.00			

Calculate the date upon which the balance should be paid so that no interest is due either to X or Y.

Solution

Taking May 18th as the zero or base date :

For Y's payments :

Date of	Due Date	Amount	No. of days from	Products
Transactions			the base date	
(1)	(2)	(3)	(4)	(5)
April 18	May 18	60	0	0
May 15	June 15	70	28	1,960
June 16	July 16	80	59	4,720
Amount Due to X		210	Sum of products	6,680

For X's payments

The students should note that the same base date should be taken. Therefore, the base date will be May 18 in this case also.

Date of Transactions	Due Date	Amount	No. of days from the base date	Products
(1)	(2)	(3)	(4)	(5)
April 23	May 23	52	5	260
May 24	June 24	50	37	1,850
Amount Due to Y		102	Total products	2,110

Excess of Y's products over X's   =   6,680 – 2,110

                                   =   4,570

Excess amount due to X ₹ 210 – 102   =   ₹ 108.

Number of days from the base date to the date of settlement is

$$\frac{4,570}{108} = 42 \text{ days}$$

Hence the date of settlement of the balance is 42 days after May 18 i.e., on June 29. On June 29, Y has to pay X ₹ 108 to clear the account.

1.2.2   Calculation of interest on drawings

When different amounts are due on different dates, but they are ultimately settled on one day the interest may be calculated by means of Average Due Date. When interest is chargeable on drawings, and drawings are on different dates, interest may be calculated on the basis of Average Due Date of drawings determined on the above basis.

Illustration 3

A and B, two partners of a firm, have drawn the following amounts from the firm in the year ending 31st March, 20......

Date	A	Date	B
	₹		₹
1.7	500	12.6	1,000
30.9	800	11.8	500
1.11	1,000	9.2	400
28.2	400	7.3	900

Interest at 6% p.a. is charged on all drawings. Calculate interest chargeable (assume February of 28 days)

Solution

(1)			
A:	Ordinary System : 500 for 9 months	=	4,500 for 1 month
	800 for 6 months	=	4,800 for 1 month
	1,000 for 5 months	=	5,000 for 1 month
	400 for 1 month	=	400 for 1 month
			14,700 for 1 month
	14,700 @ 6% for 1 month	=	1/2% of 14,700
		=	₹ 73.50
B:	1,000 for 292 days	=	2,92,000
	500 for 232 days	=	1,16,000
	400 for 50 days	=	20,000
	900 for 24 days	=	21,600
			4,49,600

$$4,49,600 \times \frac{6}{100} \times \frac{1}{365} = ₹\ 73.91$$

(2) Average Due Date System:

(a) Taking 1.7 as O - day:

	Dates	₹	Months from O-day	Products
	1.7	500	0	0
	30.9	800	3	2,400
A :	1.11	1,000	4	4,000
	28.2	400	8	3,200
		2,700		9,600

A.D.D. = $\dfrac{9,600}{2,700}$ months from 1.7 . . . i.e., 3.556 months i.e. October 17th.

Interest is chargeable from October 17 to March 31 i.e. 5.444 months

$$2,700 \times \frac{6}{100} \times \frac{5.444}{12} = ₹\ 73.49$$

Or,

Taking 1st April as O-day:

	Dates	₹	Months from O-day	Products
A :	1.7	500	3	1,500
	30.9	800	6	4,800
	1.11	1,000	7	7,000
	28.2	400	11	4,400
		2,700		17,700

A.D.D. $= \dfrac{17,700}{2,700}$ months from 1.4 . . . i.e. 6.556 months i.e. 17th October.

Interest is chargeable from October 17 to March 31 i.e. 5.444 months.

$2,700 \times \dfrac{6}{100} \times \dfrac{5.444}{12} = ₹ \ 73.49$

(b)   Taking 12th June as Zero-day :

	Dates	₹	Months from O-day	Products
B :	12.6	1,000	0	0
	11.8	500	60	30,000
	9.2	400	242	96,800
	7.3	900	268	2,41,200
		2,800		3,68,000

A.D.D. $= \dfrac{3,68,000}{2,800}$ days from 12.6 . . . i.e. 131 days.

June 18
July 31
Aug. 31
Sept. 30
110

131 days -110 days i.e. 21st October

So, interest is chargeable from 21.10 . . . to 31.3 . . . i.e. for 161 days.

$2,800 \times \dfrac{6}{100} \times \dfrac{161}{365} = ₹ \ 74.10$

The Differences in amounts in the two systems (1) and (2) are due to approximation.

Illustration 4

The following amounts are due to X by Y. Y wants to pay off (a) on 18.3 ... or (b) on 14.7 ...
Interest rate of 8% p.a. is taken into consideration.

Due Dates	₹
10.1	500
26.1 (Republic Day)	1,000
23.3	3,000
18.8 (Sunday)	4,000

Determine the amount to be paid in (a) and in (b).

Solution

Due Date	Due Date	No. of days	Amount	Product
(Normal)	(Actual)	from 10.1 . . .	₹	
		taking as 0-Day		
10.1	10.1	0	500	0
26.1	25.1	15	1,000	15,000
23.3	23.3	72	3,000	2,16,000
18.8	17.8	219	4,000	8,76,000
			8,500	11,07,000

A.D.D. = 10th Jan. + $\dfrac{11,07,000}{8,500}$ = 10th Jan + 130 days = 20th May

January	21
February	28
March	31
April	30
	110

(a) If the payment is made on 18.3 ... rebate will be allowed for unexpired time from 18.3 to 20.5 i.e., 13 + 30 + 20 i.e. for 63 days. He has to pay the discounted value of the total amount.

Discount = 8,500 x $\dfrac{8}{100}$ x $\dfrac{63}{365}$ = 680x $\dfrac{63}{365}$ = ₹ 117.37

Amount to be paid on 18.3 ... ₹ 8,500 – 117.37 = 8,382.63

(b) If the payment is deferred to 14.7, interest is to be paid from 20.5 ... to 14.7 ... i.e., for 11 + 30 + 14 = 55 days.

Interest = 8,500 x $\dfrac{8}{100}$ x $\dfrac{55}{365}$ = 680 x $\dfrac{55}{365}$ = ₹ 102.47

The amount to be paid on 14.7.

₹ 8,500 + 102.47 = 8,602.47

1.2.3 Case 2: Where amount is lent in one Instalment

Calculation of average due date in a case where the amount is lent in one instalment and repayment is done in various instalments (opposite to what we have done in the first case). The problem takes a different shape. The procedure for calculating average due date can be summarised as under:

Step 1: Calculate number of days/monthly/years from the date of lending money to the date of each repayment.

Step 2: Find the total of such days/months/years.

Step 3: Quotient will be the number of days/months/years by which average due date falls away from date of commencement of loan.

Thus, the formula for the average due date can be written as under:

$$\text{Average due date} = \text{Date of Loan} + \frac{\text{Sum of days/months/Years from the date of lending to the date of repayment of each instalment}}{\text{Number of instalments}}$$

Illustration 5

₹ 10,000 lent by Dass Bros. to Kumar & Sons on 1st January, 2008 is repayable in 5 equal annual instalments commencing on 1st January, 2009. Find the average due date and calculate interest at 5% per annum, which Dass Bros. will recover from Kumar & Sons.

Solution

$$\text{Average due date} = \text{Date of Loan} + \frac{\text{Sum of the number of years/ months/ days from the date of lending to the date of repayment of each instalment}}{\text{Number of instalments}}$$

$$= \text{Jan. 1, 2008} + \frac{1+2+3+4+5}{5}$$

$$= \text{Jan. 1, 2008} + 3 \text{ years}$$

$$= \text{1st Jan., 2011}$$

Interest at a certain rate on the instalments paid from the date of payment to any fixed date will be the same as on ₹ 10,000 (if lent on 1st Jan., 2011 to that fixed date). There will be no loss to either party. Supposing rate of interest is 5% p.a. and date of settlement is 31st Dec., 2009 then calculation of interest by product method from both parties' point of view will be as follows:

Dass Bros. pays interest as follows:

Amount	Paid on	Money used by Dass Bros upto 31st Dec. 2013	Product
₹			₹
2,000	1st Jan. 2009	5 Years	10,000
2,000	1st Jan. 2010	4 Years	8,000
2,000	1st Jan. 2011	3 Years	6,000
2,000	1st Jan. 2012	2 Years	4,000
2,000	1st Jan. 2013	1 Year	2,000
			30,000

Interest at 5% p.a. on ₹ 30,000 for one year.

$$= \frac{Rs. 30,000 \times 5}{100} = ₹ \ 1,500$$

Dass Bros. will receive interest (if given on 1st Jan., 2011 on ₹ 10,000 from average due date to 31st Dec., 2013, i.e., for 3 years at 5% p.a.

$$= \frac{5 \times 3 \times Rs. 10,000}{100} = ₹ \ 1,500$$

From the above, it can be concluded that if the borrower pays ₹ 2,000 yearly from 1st Jan., 2009 for 5 years and if the lender gives ₹ 10,000 on 1st Jan., 2011 then both will charge same interest from each other. There is no loss to any of the parties. But actually lender gives ₹ 10,000 on 1st Jan., 2008, therefore, he has given loan 3 years in advance and will charge interest on ₹ 10,000 for 3 years.

$$\text{Interest} = \frac{Rs. 10,000 \times 5 \times 3}{100} = ₹ \ 1,500 \text{ (to be charged by Dass Bros.)}$$

1.3 Calculation of Due Date after Taking into Consideration Days of Grace

The due date of a bill of exchange is the date when the amount of a bill is payable by the drawee. A Bill of exchange or promissory note matures on the date on which it falls due. And every promissory note or bill of exchange (other than those payable on demand or at sight or on presentment) falls due on the **third day** after on which it is expressed to be payable.

Examples

(i)   A bill dated 30th September is made payable three months after date. It falls due on 2nd January.

(ii) A note dated 1st January is payable one month after sight. It falls due on 4th February.

1.4 Calculating Due Date of Bill or Note Payable Few Months after Date or Sight

When the bill is made payable at a stated number of months after date or after sight or after certain events, then the period stated shall be held to terminate on the date of the month which corresponds with the day on which the instrument is dated. If the month in which the period would terminate has no corresponding day, the period shall be held to terminate on the last day of such month.

Example: A Bill due on 29th January, 2011 is made payable at one month after date. The due date of instrument is 3rd day after 28th February, i.e., 3rd March (in 2011, February is of 28 days only).

1.5   Calculation of Due Date when the Maturity Day is a Holiday

When the day on which a promissory note or bill of exchange is at maturity (after including days of grace) is a public holiday, the instrument shall be deemed to be due on the preceding business day. The expression "public holiday" includes Sundays and other days declared by the Central Government by notification in the official gazette, to be a public holiday. And now if the preceding day is also a public holiday, it will fall on the day preceding the previous day. But if the holiday happens to be emergency or unforeseen holiday then the date shall be the next following day.

Illustration 6

A trader having accepted the following several bills falling due on different dates, now desires to have these bills cancelled and to accept a new bill for the whole amount payable on the average due date :

Sl. No.	Date of bill	Amount	Usance of the bill
1	1st March 2010	400.00	2 months
2	10th March 2010	300.00	3 months
3	5th April 2010	200.00	2 months
4	20th April 2010	375.00	1 month
5	10th May 2010	500.00	2 months

You are required to find the said average due date.

Solution

Calculation of the average due date

Sl. No.	Date of bill	Due Date of Maturity	Amount ₹	No. of days from starting date (4th May)	Product
1	1st March 2010	4th May	400	0	0
2	10th March 2010	13th June	300	40	12,000
3	5th April 2010	8th June	200	35	7,000
4	20th April 2010	23rd May	375	19	7,125
5	10th May 2010	13th July	500	70	35,000
	Total :		1,775		61,125

Average Due Date is 61,125/1,775 i.e., 34 days after the assumed due date, 4th May, 2010. The new bill should be for ₹ 1,775 payable on June 7th, 2010.

Illustration 7

A owes B ₹ 890 on 1st January, 2010. From January to March, the following further transactions took place between A and B :

January 16	A buys goods	₹ 910
February 2	A receives Cash loan	₹ 750
March 5	A buys goods	₹ 810

A pays the whole amount on 31st March, 2010 together with interest at 5% per annum. Calculate the interest by the average due date method.

Solution

Due Date	Amount	No. of days from Jan. 1	Product
2010	₹		
Jan. 1	890	0	0
Jan. 16	910	15	13,650
Feb. 2	750	32	24,000
March 5	810	64	51,840
Total	3,360		89,490

Calculation of average due date

Average due date = Base date + days equal to $\dfrac{\text{Sum of Products}}{\text{Sum of the amounts}}$

Jan. 1 + $\left[\dfrac{89,490}{3,360}\right]$ i.e., 27 days or Jan. 28

Interest therefore has been calculated on ₹ 3,360 from 28th Jan. to 31st March, i.e., for 63 days.

$$3,360 \times \frac{5}{100} \times \frac{63}{365} = ₹\ 29$$

Illustration 8

Radheshyam purchased goods from Hariram the due dates for payment is cash, being as follows:

March 15	*₹ 400 Due 18th April*
April 21	*₹ 300 Due 24th May*
April 27	*₹ 200 Due 30th June*
May 15	*₹ 250 Due 18th July*

Hariram agreed to draw a Bill for the total amount due on the average due date. Ascertain that date.

Solution

Due Date	Amount	No. of days	Product
	₹	from 18th April	
18th April	400	0	
24th May	300	36	10,800
30th June	200	73	14,600
18th July	250	91	22,750
Total :	1,150		48,150

Average Due Date is $\dfrac{48,150}{1,150}$ or 42 days after the base date.

18th April, i.e. 30 May.

Illustration 9

Calculate Average Due date from the following information:

Date of the bill	Term	Amount
		₹
August 10, 2009	*3 months*	*6,000*
October 23, 2009	*60 days*	*5,000*
December 4, 2009	*2 months*	*4,000*
January 14, 2010	*60 days*	*2,000*
March 08, 2010	*2 months*	*3,000*

Solution

Calculation of Average Due Date

Date of bill	Term	Due date	No. of days from 10th August 2009	Amount ₹	Product ₹
August 10, 2009	3 months	Nov. 13, 2009	95	6,000	5,70,000
October 23,2009	60 days	Dec. 25, 2009	137	5,000	6,85,000
December 04, 2009	2 months	Feb. 07, 2010	181	4,000	7,24,000
January 14, 2010	60 days	Mar. 18, 2010	220	2,000	4,40,000
March 08, 2010	2 months	May 11, 2010	274	3,000	8,22,000
				20,000	32,41,000

Average due date = $\dfrac{\text{Total of product}}{\text{Total of amount}}$

7.12

$$= \frac{32,41,000}{20,000} = 162.05 \text{ days}$$

= 162 days (Approx.) after August 10, 2009

i.e. January 19, 2010.

Illustration 10

Mr. Green and Mr. Red had the following mutual dealings and desire to settle their account on the average due date:

Purchases by Green from Red:	₹
6th January, 2011	6,000
2nd February, 2011	2,800
31st March, 2011	2,000

Sales by Green to Red:

6th January, 2011	6,600
9th March, 2011	2,400
20th March, 2011	500

You are asked to ascertain the average due date.

Solution

Calculation of Average Due Date

Taking 6th January, 2011 as base date

For Green's payments

Due date	Amount	No. of days from the base date i.e. 6th Jan. 2011	Product
2011	₹		
6th January	6,000	0	0
2nd February	2,800	27	75,600
31st March	2,000	84	1,68,000
Total	10,800		2,43,600
For Red's payment			
2011			
6th January	6,600	0	0
9th March	2,400	62	1,48,800
20th March	500	73	36,500
Total	9,500		1,85,300

Excess of Green's products over Red's =₹ 2,43,600-₹ 1,85,300

=₹ 58,300

=₹ 10,800-₹ 9,500

=₹ 1,300

Number of days from the base date to the date of settlement is

58,300/1,300=45 days (approx.)

Hence, the date of settlement of the balance amount is 45 days after 6th January i.e. on 20th February.

On 20th February, 2011, Green has to pay Red ₹ 1,300 to settle the account.

Summary

- Average Due Date is one on which the net amount payable can be settled without causing loss of interest either to the borrower or the lender.

- It is used in various cases like:

    (i)   Calculation of interest on drawings of partners.

    (ii) Cancellation of various bills of exchange due on different dates and issuance of a Single bill.

    (iii) Amount lent in one instalment and repayable in various instalments.

- When the amount is lent in various instalments then average due date can be calculated as :

$$\text{Average due date} = \text{Base date} \pm \frac{\text{Total [Amount} \times \text{No. of days from base date to due date}}{\text{Total amounts}}$$

- When interest is chargeable on drawings, and drawings are on different dates, interest may be calculated on the basis of Average Due Date of drawings.

- Average due date in a case where the amount is lent in one instalment and repayment is done in various instalments will be:

$$\text{Average due date} = \text{Date of Loan} + \frac{\text{Sum of days/months/years from the date of lending to the date of repayment of each instalments}}{\text{Total amounts}}$$

- Every promissory note or bill of exchange (other than those payable on demand or at sight or on presentment) falls due on the third day after on which it is expressed to be payable. This exempted period of three days is called days of grace.

Unit 2 : Account Current

Learning Objectives

After studying this unit, you will be able to:

♦   Understand the meaning of Account Current.

♦   Learn the methods of preparing Account Current, namely preparation of Account Current with the help of interest tables, by means of product and by means of balances.

♦   Grasp the calculation procedure involved in the preparation of Account Current.

2.1   Introduction

An Account Current is a running statement of transactions between parties for a given period of time and includes interest allowed or charged on various items. It takes the form of an account.

Some of the situations when account current is prepared are:

1.   It is prepared when frequent transactions regularly take place between two parties. An example is of a manufacturer who sells goods frequently to a merchant on credit and receives payments from him in instalments at different intervals and charges interest on the amount which remains outstanding.

2.   A consignee of goods can also prepare an Account Current, if the latter is to settle the account at the end of the consignment & interest is chargeable on outstanding balance.

3.   An Account Current also is frequently prepared to set out the transactions taking place between a banker and his customer.

An Account Current has two parties - one who renders the account and the other to whom the account is rendered. This is indicated in the heading of an Account Current, which is like the following: "A in Account Current with B". It implies that A is the customer, and the account is being rendered to him by B.

2.2   Preparation of Account Current

There are three ways of preparing an Account Current:

(i)   With the help of interest tables;

(ii)   By means of products; and

(iii)   By means of products of balances.

2.2.1   Preparation of Account Current with the help of Interest Tables

According to this method, all the transactions are arranged in the form of an account. There are two additional columns on both the sides of such an account.

(a) One column is meant to indicate the number of days counted from the due date of each transaction to the date of rendering the account. If no specific date is mentioned as the date on which payment is due, the date of the transactions is presumed to be the due date.

(b) The other column is meant for writing interest.

With the help of ready made tables, interest due on different amounts at given rates for different periods of time is found out and this is entered against each item separately.

The interest columns of both the sides are totalled up and the balance is drawn.

Illustration 1

Prepare Account Current for Nath Brothers in respect of the following transactions with Shyam:

2010		₹	
September 16	Goods sold to Shyam	200	due 1st Oct.
October 1	Cash received from Shyam	90	
October 21	Good purchased from Shyam	500	due 1st Dec.
November 1	Paid to Shyam	330	
December 1	Paid to Shyam	330	
December 5	Goods purchased from Shyam	500	due 1st Jan.
December 10	Goods purchased from Shyam	200	due 1st Jan.
2011			
January 1	Paid to Shyam	600	
January 9	Goods sold to Shyam	20	due 1st Feb.

The account is to be prepared upto 1st February. Calculate interest @ 6% per annum.

Solution

Shyam in Account Current with Nath Brothers
(Interest to 1st February, 2011 @ 6% p.a.)

Date	Particulars	Due date	Amount `	Days	Interest	Date	Particulars	Due date	Amount `	Days	Interest
2010						2010					
Sept.16	To Sales A/c	1st Oct.	200	123	4.04	Oct. 1	By Cash A/c	1st Oct.	90	123	1.82
Nov.1	To Cash A/c	1st Nov.	330	92	5.00	Oct. 21	By Purchase A/c	1st Dec.	500	62	5.10
Dec. 1	To Cash A/c	1st Dec.	330	62	3.36	Dec. 5	By Purchase A/c	1st Jan.	500	31	2.55
						Dec. 10	By Purchase A/c	1st Jan.	200	31	1.02
2011						2011					

Jan. 1	To Cash A/c	1st Jan.	600	31	3.06	Feb. 1	By Balance of Interest			4.97
Jan. 9	To sales A/c	1st Feb.	20			Feb. 1	By Balance c/d	194.97		-
Feb. 1	To Interest		4.97							
			1,484.97		15.46			1,484.97		15.46

Tutorial Notes:

(1) While counting the number of days, the date of due date is ignored and the date upto which the account is prepared, is included.

(2) While counting the number of days, for opening balances, the opening date as well as date upto which the account is prepared, is counted.

Calculation of days:

Transaction 2010		Due Date		Oct.	Nov.	Dec.	Jan.	Feb.	Total		
	Sept.	16	1st Oct.	30+	30+	31+	31+	1 =	123	Days
	Oct.	1	1st Oct.	30+	30+	31+	31+	1 =	123	"
	Oct.	21	1st Dec.	-	-	30+	31+	1 =	62	"
	Nov.	1	1st Nov.	-	29+	31+	31+	1 =	92	"
	Dec.	1	1st Dec.	-	-	30+	31+	1 =	62	"
	Dec.	5	1st Jan.	-	-	-	30+	1 =	31	"
	Dec.	10	1st Jan.	-	-	-	30+	1 =	31	"
2011										
	Jan.	1	1st Feb.	-	-	-	30+	1 =	31	"
	Jan.	9	1st Feb.	-	-	-	-	- =	0	"

2.2.2 Preparation of Account Current by means of Products

When this method is followed, the way of preparing the Account Current remains the same. It is only the method of calculating interest which is different.

Under the previous method, interest columns are provided on both the sides of the Account Current, and interest in respect of each item is found out from the ready-made interest tables. In this method, interest columns are replaced by "product" columns. Product in this case is the amount multiplied by the number of days for which it has been outstanding. Interest on a certain sum of money for a certain number of days is the same thing as interest on the product for one day. In other words, with a view to reduce the period of each transaction to one day,

the amount of each transaction is multiplied by the number of days. This product is entered against each transaction the product column.

The remaining steps are as follows:

(a) Find out the balance of the products on the two sides.

(b) Calculate interest at the given rate on the balance of the products for a single day.

(c) Enter interest on the appropriate side in the amount column. This entry is made on the side other than that on which the balance of products appears.

Taking Illustration 1 Account Current by means of Product is explained below :

Shyam in Account Current with Nath Brothers

(Interest to 1st February, 2008 @ 6% p.a.)

Date	Particulars	Due date	Amount `	Days `	Product `	Date	Particulars	Due date	Amount `	Days `	Product `
2010						2010					
Sept.		1st				Oct.		1st			
16 Nov.	To Sales A/c	Oct. 1st	200	123	24,600	1 Oct.	By Cash A/c	Oct.1	90	123	11,070
1 Dec.	To Cash A/c	Nov. 1st	330	92	30,360	21 Dec.	By Purchase A/c	Dec.1	500	62	31,000
1	To Cash A/c	Dec.	330	62	20,460	5	By Purchase A/c	Jan.	500	31	15,500
						Dec.10	By Purchase A/c	1 Jan	200	31	6,200
2011						2011					
Jan.1	To Cash A/c	1 Jan	600	31	18,600	Feb.1	By Balance of products				30,250
Jan.9	To Sales A/c	1 Feb	20			Feb.1	By Balance c/d		194.97		
Feb.1	To Interest		4.97								
	$\frac{30,250}{365} \times \frac{6}{100}$										
			1,484.97		94,020				1,484.97		94,020
2011											
Feb	To Balance b/d		194.97								

Illustration 2

From the following particulars prepare the account current to be rendered by Mr. Singh to Mr. Paul as on 31st August, 2010. Interest must be calculated @ 10% p.a.

2010			₹	2010		₹
June	*11*	*Goods sent to Paul*	*1,020*	*July 7*	*Goods sent to Mr. Paul*	*700*
"	*15*	*Cash received from Paul*	*500*	*Aug 8*	*Cash received from Paul*	*1,100*
"	*20*	*Goods sent to Mr. Paul*	*650*			

Solution

Mr. Paul in Account Current with Mr. Singh
(Interest to 31st August, 2010 @ 10% p.a.)

Dr.											Cr.
Date	Particulars	Due	Amount	Days	Product	Date	Particulars	Due	Amount	Days	Product
		Date	₹					Date	₹		
2010						2010					
June 11	To Sales A/c	June 11	1,020	81	82,620	June 15	By Cash A/c	15	500	77	38,500
June 20	To Sales A/c	June 20	650	72	46,800	Aug. 8	By Cash A/c	Aug. 8	1,100	23	25,300
July 7	To Sales A/c	July 7	700	55	38,500	Aug. 31	By Balance of product				1,04,120
Aug. 31	To Interest A/c $\dfrac{Rs.1,04,120}{365} \times \dfrac{10}{100}$		28.53			Aug. 31	Balance c/d		798.53		
			2,398.53		1,67,920				2,398.53		1,67,920
Sept.	To Balance b/d		798.53								

Red - Ink Interest:

In case the due date of a bill falls after the date of closing the account, then no interest is allowed for that. However, interest from the date of closing to such due date is written in "Red-Ink" in the appropriate side of the 'Account current'. This interest is called Red-Ink interest. This Red Ink interest is treated as negative interest. In actual practice, however the product of such bill [value of bill X (due date-closing date) is written in ordinary ink in the opposite side on which the bill is entered].

Illustration 3

From the following particulars make up an Account Current to be rendered by S. Dasgupta to A. Halder at 31st Dec. reckoning interest at 5% p.a.

2010		₹
June 30	Balance owing by A. Halder	520
July 17	Goods sold to A. Halder	40
Aug. 1	Cash received from A. Halder	500
Aug. 19	Goods sold to A. Halder	720

Aug. 30	*Goods sold to A. Halder*	*50*
Sept. 1	*Cash received from A. Halder*	*400*
Sept. 1	*A. Halder accepted Dasgupta's*	
	Bill at 3 month date for	*300*
Oct. 22	*Goods bought from A. Halder*	*20*
Nov. 12	*Goods sold to A. Halder*	*14*
Dec. 14	*Cash received from A. Halder*	*50*

Solution

A. Halder in Current Account with Mr. S. Dasgupta
(Interest to 31st December, 2010 @ 5% p.a.)

Date	Particulars	Due Date	Amount ₹	Days	Interest	Date	Particulars	Due Date	Amount ₹	Days	Interest
2010						2010					
June 30	To Balance b/d		520	185	96,200	Aug. 1	By Cash A/c	Aug. 1	500	152	76,000
July 17	To Sales A/c	July 17	40	167	6,680	Sep. 1	By Cash A/c	Sep. 1	400	121	48,400
Aug. 19	To Sales A/c	Aug. 19	720	134	96,480	Sep. 1	By Bills Receivable A/c (Note : 1)	Dec. 4	300	27	8,100
Aug. 30	To Sales A/c	Aug. 30	50	123	6,150	Oct. 22	By Purchases A/c	Oct. 22	20	70	1,400
Nov. 12	To Sales A/c	Nov. 12	14	49	686	Dec. 14	By Cash A/c	Dec. 14	50	17	850
						Dec.	By Balance of product				71,446
31	To Interest A/c $\frac{71,446 \times 5\%}{365}$		9.79			Aug. 31	By Balance b/d		83.79		-------
			1,353.79		2,06,196				1,353.79		2,06,196

Note: It is assumed that the bill was honoured on due date. The due date of the bill should be treated as date of payment and days to be calculated from the due date of account.

Workings:

Calculation of Days

Date of Transactions :	Due date	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Opening Balance		1	+31	+31	+30	+31	+30	+31	= 185
July 17	July 17	–	14	+31	+30	+31	+30	+31	= 167
Aug. 1	Aug. 1	–	–	30	+30	+31	+30	+31	= 152
Aug. 19	Aug. 19	–	–	12	+30	+31	+30	+31	= 134
Aug. 30	Aug. 30	–	–	1	+30	+31	+30	+31	= 123
Sep. 1	Sep. 1	–	–	–	29	+31	+30	+31	= 121
Sep. 1	Dec. 4	–	–	–	–	–	–	27	= 27
Oct. 22	Oct. 22	–	–	–	–	9	+30	+31	= 70
Nov. 12	Nov. 12	–	–	–	–	–	18	+31	= 49
Dec. 14	Dec. 14	–	–	–	–	–	–	17	= 17

Illustration 4

Following transaction took place between X and Y during the month of April, 2010.

		₹
April 1	Amount payable by X to Y	10,000
7	Received acceptance of X to Y for 2 months	5,000
10	Bills receivable (accepted by Y) on 7.2.2010 is honoured on this due date	
10	X sold goods to Y (invoice dated 10.5.2010)	15,000
12	X received cheque form Y dated 15.5.2010	7,500
15	Y sold goods to X (invoice dated 15.5.2010)	6,000
20	X returned goods sold by Y on 15.4.2010	1,000
20	Bill accepted by Y is dishonoured on this due date	5,000

You are required to make out an account current by products method to be rendered by X to Y as on 30.4.2010, taking interest into account @ 10% p.a.

Solution

'Y' In Account Current with 'X'
(Interest to 30th April, 2010 @ 10% p.a.)

Dr.   *Cr.*

Date	Particulars	Due Date	Amount ₹	Days	Interest	Date	Particulars	Due Date	Amount ₹	Days	Interest
2010		2010				2010		2010			
April		June				April					
7	To Bills Payable	10	5,000	-	-	1	By Balance b/d		10,000	30	3,00,000
April 10	To Sales A/c	May 10	15,000	-	-	April 12	By Bank A/c (Cheque received dated 15.5.2010)	May 15	7,500	-	-
April 20	To Purchase Returns	May 15	1,000	-	-	April 15	By Purchase A/c (invoice dated 15.5.2010)	May 15	6,000	-	-
April 20	To Bill Receivable A/c	April 20	5,000	10	50,000						
April 30	To Red Ink Product 15 (₹ 7,500 x 15) as per contra	May 15		30	1,12,500	April	By Red Ink Product as per contra (5,000 x 41)	June 10	-	41	2,05,000
April 30	To Red Ink Product 15 (₹ 6,000 x 15) as per contra	May 15		30	90,000	April	By Red Ink Product as per contra (15,000 x 10)	May 10	-	10	1,50,000
April 30	To Balance of product				4,17,500	April 30	By Red Ink Product as per contra (1,000 x 15)	May 15	-	-	15,000
						April 30	By Interest A/c $\frac{4,17,500}{10 \times 365}$		114.38		
						April 30	By Balance c/d		2,385.62		
			26,000		6,70,000				26,000		6,70,000

No entry is required for matured bill on 10th April since party is not contracted.

2.2.3 Preparation of Account Current by Means of Product of Balances

This method, also known as periodic balance method, is usually adopted in the case of banks where the balance of account is taken out after every transaction. In this case, the number of days written against each transaction are the days counted from its date or due date to the date of the following transaction. In the case of the last transaction, the number of days is counted to the close of the period.

Each amount is multiplied with the number of days. If the amount represents a debit balance, the product is entered in the Dr. Product column; and if it represents a credit balance, the product is written in the Cr. Product column. The Dr. Product and Cr. Product columns are then totalled up. Interest is calculated on each total at the given rate of interest; and the net interest is ascertained. If net interest is payable to the customer, it will appear as "By Interest A/c", and if it is due from the customer, it will appear as "To Interest A/c".

Illustration 5

On 2nd January, 2011 Vinod opened a current account with the Allahabad Bank Limited; and deposited a sum of ₹ 30,000. He further deposited the following amounts :

15th January	₹	12,000
12th March	₹	8,000
10th May	₹	16,000
His withdrawals were as follows :		
15th February	₹	26,000
10th April	₹	30,000
15th June	₹	14,000

Show Vinod's a/c in the ledger of the Allahabad Bank. Interest is to be calculated at 5% on the debit balance and 2% on credit balance. The account is to be prepared to be prepared as on 30th June, 2011. Calculation may be made correct to the nearest rupee.

Solution

Vinod Current Account with Allahabad Bank Ltd.

Date	Particular	Dr.	Cr.	Dr. or Cr.	Balance	Days	Dr. Product	Cr. Product
2011								
Jan. 2	By Cash Account	–	30,000	Cr.	30,000	13	–	3,90,000
Jan. 15	By Cash Account	–	12,000	Cr.	42,000	31	–	13,02,000
Feb. 15	To Self	26,000	–	Cr.	16,000	25	–	4,00,000
Mar. 12	By Cash Account	–	8,000	Cr.	24,000	29	–	6,96,000
April 10	To Self	30,000	–	Dr.	6,000	30	1,80,000	-
May 10	By Cash Account	-	16,000	Cr.	10,000	36	-	3,60,000
June 15	To Self	14,000	-	Dr.	4,000	15	60,000	-

June 30	By Interest A/c	-	140	Dr.	3,860		-	-
June 30	By Balance c/d		3,860	-				
		70,000	70,000				2,40,000	31,48,000
July 1	To Balance b/d	3,860						

* Interest is calculated as follows:

On ₹ 31,48,000 @ 2% for 1 day = ₹ 172.49

On ₹ 2,40,000 @ 5% for 1 day = ₹ 32.87

Net Interest = ₹ 139.62

Summary

- When interest calculation becomes an integral part of the account. The account maintained is called "Account Current".

    Some examples where it is maintained are:

    (i) Frequent transactions between two parties.

    (ii) Goods sent on consignment

    (iii) Frequent transactions between a banker and his customers

- There are three ways of preparing an Account Current :

    (i) With the help of interest tables

    (ii) By means of products

    (iii) By means of products of balances