

AVERAGE DUE DATE AND ACCOUNT CURRENT

Unit-1 : AVERAGE DUE DATE

BASIC CONCEPTS AND STEPS TO SOLVE THE PROBLEMS

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

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

- 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:

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

Question 1

State with reasons, whether the following statements are true or false:

- If payment is made on the average due date, it results in loss of interest to creditors.
- Average due date is the median average of several due dates for payments.
- In the calculation of average due date, only the due date of first transaction must be taken as the base date.

Answer

- False-** Average due date is 'no loss no gain' date to either party. i.e. neither the debtor nor the creditor stands to lose or gain anything by way of interest.
- False-** Average due date is equated date for several due dates of payments.

(c) **False-** While calculating the average due date, any transaction date may be taken as the base date.

Question 2

E owes to F the following amounts:

Rs. 5,000 due on 10th March, 2011

Rs. 18,000 due on 2nd April, 2011

Rs. 60,000 due on 30th April, 2011

Rs. 2,000 due on 10th June, 2011

He desires to make the full payment on 30th June, 2011 with interest at 10% per annum from the average due date. Find out the average due date and the amount of interest. (May, 1999)

Answer**Calculation of Average Due Date**

Taking 10th March, 2011 as the base date.

<i>Due date</i>	<i>Amount</i>	<i>No. of days from the base date i.e. 10th March, 2011</i>	<i>Product</i>
2011	Rs.		Rs.
10 th March	5,000	0	0
2 nd April	18,000	23	4,14,000
30 th April	60,000	51	30,60,000
10 th June	<u>2,000</u>	92	<u>1,84,000</u>
	<u>85,000</u>		<u>36,58,000</u>

Average due date=Base date+ Days equal to $\frac{\text{Total of products}}{\text{Total amount}}$

$$= 10^{\text{th}} \text{ March} + \frac{\text{Rs. } 36,58,000}{\text{Rs. } 85,000}$$

i.e. 43 days (approx.) =22nd April, 2011

Interest amount: Interest can be calculated on Rs. 85,000 from 22nd April, 2011 to 30th June, 2011 at 10% p.a. i.e. interest on Rs. 85,000 for 70 days at 10%.

$$=\text{Rs. } 85,000 \times 10/100 \times 70/365$$

$$=\text{Rs. } 1,630 \text{ (approx.)}$$

Question 3

Calculate average due date from the following informations:

Date of bill	Term	Amount (Rs.)
1 st March, 2011	2 months	4,000
10 th March, 2011	3 months	3,000
5 th April, 2011	2 months	2,000
20 th April, 2011	1 months	3,750
10 th May, 2011	2 months	5,000

(May, 1999 & November, 2002)

Answer**Calculation of Average Due Date**

(Taking 4th May, 2011 as the base date)

Date of bill	Term	Due date	Amount Rs.	No. of days from the base date i.e. May 4, 2011	Product Rs.
2011		2011			
1 st March	2 months	4 th May	4,000	0	0
10 th March	3 months	13 th June	3,000	40	1,20,000
5 th April	2 months	8 th June	2,000	35	70,000
20 th April	1 month	23 rd May	3,750	19	71,250
10 th May	2 months	13 th July	<u>5,000</u>	70	<u>3,50,000</u>
			<u>17,750</u>		<u>6,11,250</u>

Average due date = Base date + Days equal to $\frac{\text{Total of products}}{\text{Total amount}}$

$$= 4^{\text{th}} \text{ May, 2011} + \frac{\text{Rs. } 6,11,250}{17,750}$$

i.e. 34 days (approx.) = 7th June, 2011

Question 4

'A' lent Rs. 25,000 to 'B' on 1st January, 2011. The amount is repayable in 5 half-yearly installments commencing from 1st January, 2012. Calculate the average due date and interest @ 10% per annum.

(May, 1999, November, 2002 & November, 2003)

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Answer

Calculation of sum of periods from the date of each transaction:

1st payment is made after 12 months from the date of loan.

2nd payment is made after 18 months from the date of loan.

3rd payment is made after 24 months from the date of loan.

4th payment is made after 30 months from the date of loan.

5th payment is made after $\frac{36}{120}$ months from the date of loan.

Average due date =

$$\begin{aligned} \text{Date of loan} + & \frac{\text{Sum of months from 1st January, 2011 to the date of each installment}}{\text{Number of installments}} \\ & = 1^{\text{st}} \text{ January, 2011} + \frac{120 \text{ months}}{5} \\ & = 1^{\text{st}} \text{ January, 2011} + 24 \text{ months} \\ & = 1^{\text{st}} \text{ January, 2013} \\ \text{Interest} & = \text{Rs. } 25,000 \times 10/100 \times 2 \text{ years} \\ & = \text{Rs. } 5,000 \end{aligned}$$

Question 5

Calculate average due date from the following information:

Sum of months from 1 st January, 2007 to the date of each installment	Term	Amount (Rs.)
<i>Date of bill</i>		
16 th August, 2010	3 months	3,000
20 th October, 2010	60 days	2,500
14 th December, 2010	2 months	2,000
24 th January, 2011	60 days	1,000
06 th March, 2011	2 months	1,500

(November, 2004)

Answer

Calculation of Average Due Date

(Taking November 19, 2010 as the base date)

Date of bill	Term	Due date (including 3 grace days)	Amount Rs.	No. of days from the base date	Product (no. of days x amount)
16 th August, 2010	3 months	Nov. 19, 2010	3,000	0	0
20 th October, 2010	60 days	Dec. 22, 2010	2,500	33	82,500
14 th December, 2010	2 months	Feb. 17, 2011	2,000	90	1,80,000
24 th January, 2011	60 days	March 27, 2011	1,000	129	1,29,000
06 th March, 2011	2 months	May 09, 2011	<u>1,500</u>	172	<u>2,58,000</u>
			<u>10,000</u>		<u>6,49,500</u>

Average due date = Base date + Days equal to $\frac{\text{Total of products}}{\text{Total amount}}$

$$= \text{November 19, 2010} + \frac{6,49,500}{10,000}$$

$$= \text{November 19, 2010} + 65 \text{ days (approx.)}$$

$$= \text{January 23, 2011}$$

Question 6

A trader allows his customers, credit for one week only beyond which he charges interest @ 12% per annum. Anil, a customer buys goods as follows:

Date of Sale/Purchase	Amount (Rs.)
January 2, 2009	6,000
January 28, 2009	5,500
February 17, 2009	7,000
March 3, 2009	4,700

Anil settles his account on 31st March, 2009. Calculate the amount of interest payable by Anil using average due date method. **(November, 2009)**

Answer

Let us assume 9th January, 2009 to be the base date:

Date of Sale	Due date of payment	Amount (Rs.)	No. of days from 9 th January, 2009	Product
Jan. 2	Jan. 9	6,000	0	0
Jan. 28	Feb. 4	5,500	26	1,43,000
Feb. 17	Feb. 24	7,000	46	3,22,000
March 3	March 10	<u>4,700</u>	60	<u>2,82,000</u>
		<u>23,200</u>		<u>7,47,000</u>

$$\text{Average Due date} = \text{Base date} + \frac{\text{Sum of Product}}{\text{Sum of amount}}$$

$$= 9^{\text{th}} \text{ January, 2009} + \frac{7,47,000}{23,200} = 32 \text{ days}$$

32 days from 9th January, 2009 = 10th February, 2009

Thus, average due date = 10th February, 2009

No. of days from 10th February, 2009 to 31st March, 2009 = 49 days.

Interest payable by Anil on Rs.23,200 for 49 days @ 12% per annum

$$= \text{Rs.}23,200 \times \frac{49}{365} \times \frac{12}{100} = \text{Rs.}373.74$$

Question 7

From the following details find out the average due date:

Date of Bill	Amount (₹)	Usance of Bill
29 th January, 2009	5,000	1 month
20 th March, 2009	4,000	2 months
12 th July, 2009	7,000	1 month
10 th August, 2009	6,000	2 months

(November, 2010)

Answer

Calculation of Average Due Date

(Taking 3rd March, 2009 as base date)

Date of bill 2009	Term	Due date 2009	Amount (₹)	No. of days from the base date i.e. 3 rd March, 2009 (₹)	Product (₹)
29 th January	1 month	3 rd March ¹	5,000	0	0
20 th March	2 months	23 rd May	4,000	81	3,24,000
12 th July	1 month	14 th Aug. ²	7,000	164	11,48,000
10 th August	2 months	13 th Oct.	<u>6,000</u>	224	<u>13,44,000</u>
			<u>22,000</u>		<u>28,16,000</u>

$$\begin{aligned}
 \text{Average due date} &= \text{Base date} + \text{Days equal to } \frac{\text{Sum of Products}}{\text{Sum of Amounts}} \\
 &= 3^{\text{rd}} \text{ March, 2009} + \frac{28,16,000}{22,000} \\
 &= 3^{\text{rd}} \text{ March, 2009} + 128 \text{ days} \\
 &= 9^{\text{th}} \text{ July, 2009}
 \end{aligned}$$

EXERCISES

1. Calculate Average Due date from the following information:

Date of the bill	Term	Amount Rs.
August 10, 2010	3 months	6,000
October 23, 2010	60 days	5,000
December 4, 2010	2 months	4,000

¹ Bill dated 29th January, 2009 has the maturity period of one month, but there is no corresponding date in February, 2009. Therefore, the last day of the month i.e. 28th February, 2009 shall be deemed maturity date and due date would be 3rd March, 2009 (after adding 3 days of grace).

² Bill dated 12th July, 2009 has the maturity period of one month, due date (after adding 3 days of grace) falls on 15th August, 2009. 15th August being public holiday, due date would be preceding date i.e. 14th August, 2009.

January 14, 2011	60 days	2,000
March 08, 2011	2 months	3,000

(Hints: Average due date = January 19, 2011.)

2. Hari owes Ram Rs. 2,000 on 1st April, 2011. From 1st April, 2011 to 30th June, 2011 the following further transactions took place between Hari and Ram:

April 10 Hari buys goods from Ram for Rs. 5,000

May 16 Hari receives cash loan of Rs. 10,000 from Ram

June 9 Hari buys goods from Ram for Rs. 3,000

Hari pays the whole amount, together with interest @ 15% per annum, to Ram on 30th June, 2011. Calculate the interest payable on 30th June, 2011 by the average due-date method.

(Hints: Average due date =6th May, 2011; Interest= Rs. 459 (approx.))

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

<i>Purchases by Green from Red:</i>	Rs.
6 th January, 2011	6,000
2 nd February, 2011	2,800
31 st March, 2011	2,000

Sales by Green to Red:

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

You are asked to ascertain the average due date.

(Hints: On 20th February, 2011, Green has to pay Red Rs. 1,300 to settle the account)

Unit-2 : ACCOUNT CURRENT

BASIC CONCEPTS

- When interest calculation becomes an integral part of the account. The account maintained is called "Account Current".
 - Some examples where it is maintained are:
 - Frequent transactions between two parties.
 - Goods sent on consignment
 - Frequent transactions between a banker and his customers
- There are three ways of preparing an Account Current :
 - With the help of interest tables
 - By means of products
 - By means of products of balances

Question 1

On 1st January, 2011 Suri's account in Puri's ledger showed a debit balance of Rs. 2,500. The following transactions took place between Puri and Suri during the quarter ended 31st March, 2011:

2011	Rs.
Jan 11 Puri sold goods to Suri	3,000
Jan 24 Puri received a promissory note from Suri at 3 months date	2,500
Feb 01 Suri sold goods to Puri	5,000
Feb 04 Puri sold goods to Suri	4,100
Feb 07 Suri returned goods to Puri	500
March 01 Suri sold goods to Puri	2,800
Mar 18 Puri sold goods to Suri	4,600
Mar 23 Suri sold goods to Puri	2,000

Accounts were settled on 31st March, 2011 by means of a cheque. Prepare an Account Current to be submitted by Puri to Suri as on 31st March, 2011, taking interest into account @ 10% per annum. Calculate interest to the nearest rupee.

In the books of Puri

Suri in Account Current with Puri

Date	Particulars	Due Date	Amount	Days	Products	Date	Particulars	Due Date	Amount	Days	Products
2011			Rs.			2011			Rs.		
Jan. 1	To Balance b/d	Jan. 1	2,500	90	2,25,000	Jan. 24	By B/R	April 27	2,500	(27)	(67,500)
Jan. 11	To Sales	Jan 11	3,000	79	2,37,000	Feb. 1	By Purchases	Feb. 1	5,000	58	2,90,000
Feb. 4	To Sales	Feb. 4	4,100	55	2,25,500	Feb. 7	By Sales Returns	Feb. 7	500	52	26,000
Mar. 18	To Sales	Mar. 18	4,600	13	59,800	Mar. 1	By Purchases	Mar. 1	2,800	30	84,000
Mar. 31	To Interest		109			Mar. 23	By Purchases	Mar. 23	2,000	8	16,000
						Mar. 31	By Balance of Products				3,98,800
						Mar. 31	By Bank		1,509		
	Total		14,309		7,47,300				14,309		7,47,300

Calculation of interest:

$$\text{Interest} = \frac{3,98,800}{365} \times \frac{10}{100} = \text{Rs. } 109$$

Question 2

The following are the transactions that took place between G and H during the period from 1st October, 2010 to 31st March, 2011:

2010		Rs.
Oct.1	Balance due to G by H	3,000
Oct 18	Goods sold by G to H	2,500
Nov. 16	Goods sold by H to G (invoice dated November, 26)	4,000
Dec.7	Goods sold by H to G (invoice dated December, 17)	3,500

2011		Rs.
Jan. 3	Promissory note given by G to H, at three months	5,000
Feb. 4	Cash paid by G to H	1,000
Mar. 21	Goods sold by G to H	4,300
Mar.28	Goods sold by H to G (invoice dated April, 8)	2,700

Draw up an Account Current up to March 31st, 2011 to be rendered by G to H, charging interest at 10% per annum. Interest is to be calculated to the nearest rupee.

© Answer

**In the books of G
H in Account Current with G**

Date	Due date	Particulars	No., of days till Mar. 31, 11	Amt.	Product Date	Due date	Particulars	No. of days till 31.3.11	Amt.	Product
2010 Oct 1,	2010 Oct 1,	To Balance	182	Rs. 3,000	Rs. 2010 5,46,000 Nov 16	2010 Nov 20	By Purchases	125	Rs. 4,000	Rs. 5,00,000
Oct 18,	Oct 18	To Sales b/d	164	2,500	4,10,000 Dec 7	Dec. 17	By Purchases	104	3,500	3,64,000
2011 Jan 2	2011 Apr 6	To Bills payable	(6)	5,000	2011 (30,000) Mar 28	2011 Apr 8	By Purchases	(8)	2,700	(21,600)
Feb 4	Feb 4	To Cash	55	1,000	55,000 Mar 31	Mar 31	By Balance of product			1,81,600
Mar 21 Mar 31	Mar 21 Mar 31	To Sales To Interest	10	4,300 <u>50</u> 15,850	43,000 <u>50</u> 10,24,000		By Balance c/d		5,650 <u>15,850</u>	<u>10,24,000</u>

Interest for the period = $\frac{1,81,600 \times 10 \times 1}{100 \times 365} = \text{Rs. } 50 \text{ (approx.)}$

EXERCISES

1. From the following particulars prepare an Account Current to be rendered by A to B at 31st December, reckoning interest @ 10% p.a.

2011		Rs.	2011		Rs.
July 1	Balance owing from B	600	Sept. 01	B accepted A's Bill at 3 months date	250
July 17	Goods sold to B	50	Oct. 22	Goods bought from B	30
Aug. 1	Cash received from B	650	Nov. 12	Goods sold to B	20
Aug. 19	Goods sold to B	700	Dec. 14	Cash received from B	80
Aug. 30	Goods sold to B	40			
Sept. 1	Cash received from B	350			

(Hints: Interest $(67,090 \times 0.1 / 365) = \text{Rs. } 18.38$ and Balance c/d Rs. 68.38)

2. Following transactions took place between X and Y during the month of April, 2011:

Date	Particulars	Rs.
1.4.2011	Amount payable by X to Y	10,000
7.4.2011	Received acceptance of X to Y for 2 months	5,000
10.4.2011	Bills receivable (accepted by Y) on 7.2.2011 is honoured on this due date	10,000
10.4.2011	X sold goods to Y (due date 10.5.2011)	15,000
12.4.2011	X received cheque from Y (due date 15.5.2011)	7,500
15.4.2011	Y sold goods to X (due date 15.5.2011)	6,000
20.4.2011	X returned goods sold by Y on 15.4.2011	1,000
20.4.2011	Bill accepted by Y is dishonoured on this due date	5,000

Prepare Y's account in the books of X for the month of April, 2011.

(Hints: Interest $\text{Rs. } 4,17,500 \times 18/100 \times 1/365 = \text{Rs. } 205.90$ and Balance c/d Rs. 2,294.10)