

## 1

## Discount

## 1.1 BILLS OF EXCHANGE

These days a number of business transactions are on credit basis. The usual time limit varies from business to business. In computer parts wholesale business, the norm may be one month credit limit; in iron bars business, it may be three months, and so on. Obviously the supplier of goods or services (called *creditor*) would like to get a written undertaking from the purchaser (called *debtor*) that he will pay the specified amount of money after a specified time (called *credit period*). This is done through **bills of exchange**. If written in vernacular (*i.e.* local language like Hindi, Tamil, Bengali), it is called **hundi**. *Promissory notes* are also used. All these *instruments* are governed by Indian Negotiable Instruments Act, 1881.

According to the Indian Negotiable Instruments Act, 1881,

*“A Bill of Exchange is an instrument in writing, an unconditional order signed by the maker directing to pay a certain sum of money only to or to the order of a certain person or to the bearer of the instrument”.*

Thus, if M/s ABC sell computers worth ₹ 2 lacs on 1st August, 2013 to M/s XYZ, who agree to pay the amount at the end of three months, the bill of exchange could be something like :

Stamp	New Delhi 1st Aug., 2013
Three months after date, pay to me or my order, the sum of ₹ 200000.00 (₹ two lacs only), for the value received.	
To M/s XYZ (Address)	M/s ABC

Note that the above bill is written by seller (*creditor*), called *payee*, to the purchaser (*debtor*), called *drawee*. Also, the drawee (*i.e.* debtor) has to write the word ‘*Accepted*’ on the bill and sign under it. Only then it legally binds him to pay his debt. Without the drawee accepting the bill, it would be useless.

The bill may be prepared by somebody else than payee *i.e.* the drawer may be different from payee. The specimen bill of exchange in such a case is given below :

Stamp	New Delhi 1st Aug., 2013
<p>Three months after date, pay to M/s ABC, or order, the sum of ₹ 200000-00 (₹ two lacs only), for the value received.</p>	
<p>To M/s XYZ (Address)</p>	<p>PQR (drawer)</p>

### Features of Bills of Exchange

1. It should be in writing and must be dated.
2. It must be signed by drawer (*i.e.* maker of the bill).
3. It must be accepted by drawee (who has to make the payment).
4. It should be properly stamped or must be drafted on a stamped paper of the court.
5. It must contain an order (not a request) to make payment.
6. The amount of bill must be fixed.
7. The date of payment must be fixed.
8. There may be three parties - drawer (maker of bill), drawee (who has to make payment) and payee (who is to receive payment).
9. The amount of money specified on the bill is called **face value** or **maturity value**. It is principal plus interest.

### Advantages of Bills of Exchange

1. It helps in purchase and sale of goods on credit. This also saves currency notes from wear and tear.
2. It is a legal document. In case of dishonour after due date, it can be legally enforced.
3. Thus, there is certainty of payment. Also as date of payment is fixed, the debtor and creditor both can plan their cash flows.
4. They are convenient means for firms to make or receive payments in case of foreign trade also.
5. The bill can be transferred from one to another; the payee can **endorse** it to another person on the back of bill under his signature. The person endorsing it, is called **endorser** and the person to whom it is endorsed, is called **endorsee**.
6. There is **discounting** facility available. If the payee needs cash before due date, he can take the bill to a bank which will discount the bill and give him a cash amount equal to value of the bill minus the discount.

### Promissory Notes

You have seen that a bill of exchange prepared by payee or drawer is an order on drawee (*i.e.* debtor) to make payment.

Some examples of bills of exchange are *cheque*, *bank draft*, *hundies* etc. A *cheque* is a bill of exchange drawn on a banker and payable on demand. A *bank draft* is a cheque drawn by one bank on another to pay a specified amount on demand. *Hundies* are bills of exchange drawn in vernacular.

On the other hand, a *promissory note* is an instrument in writing containing an unconditional undertaking signed by the maker to pay a certain amount of money to, or to the order of, a certain person.

Note that "I owe you ₹ 2 lacs" is not a promissory note as it merely acknowledges the debt without any promise to pay it. The promise has to be unconditional. Thus, "I will pay ₹ 2 lacs as soon as possible" is also not a promissory note. Specimen of a promissory note is given below :

Stamp	New Delhi 1st Aug., 2013
Three months after date, I promise to pay M/s ABC, or order, the sum of ₹ 200000-00 (₹ two lacs only), for the value received.	
	M/s XYZ

### Main differences between Bill of Exchange and Promissory Note

<i>Bill of Exchange</i>	<i>Promissory Note</i>
1. There may be three parties, <i>viz.</i> the drawer, the drawee and the payee.	1. There are only two parties — the maker who draws and signs it and the payee to whom the amount is to be paid.
2. It is drawn by the creditor.	2. It is drawn by debtor.
3. It is an order to make payment.	3. It is a promise to make payment.
4. It needs acceptance by the drawee (debtor).	4. Acceptance not needed as debtor himself signs the bill.
5. In case of local bills, only one copy is prepared but in case of foreign bills, three copies are prepared.	5. Only one copy is prepared whether it is local or foreign.

## 1.2 MATURITY; DUE OR NOMINAL DATE; LEGALLY DUE DATE

After drawing (making) the bill, it is sent to debtor for acceptance. The date on which a bill is drawn (prepared) and on which it is accepted may be different.

There are two kinds of bills of exchange :

- (i) Bill of exchange **after date** in which the date of maturity is counted from the date of drawing the bill.
- (ii) Bill of exchange **after sight**, in which the date of maturity is counted from the date of acceptance of the bill. Calculating as above, the date on which a bill becomes due is called **due date** or **nominal date**. If three days, called **days of grace**, are added to this, we get the date on which bill becomes **legally due**.

Thus, if a bill of ₹ 2 lacs is drawn on 1st Sept. 2013, payable after three months, then the due date or nominal date is 1st Dec. 2013 while the bill is legally due on 4th Dec. 2013.

For calculating the due date, the following points are important :

- (i) If a bill falls due on a date which is not existent in that month, last day of month is taken. For example, if a bill is drawn on 30th January for one month, it becomes due on 28th Feb. and legally due on 3rd March.
- (ii) If the bill becomes legally due on a Sunday or a public or gazetted holiday, the (legally) due date is supposed to be *one day earlier*. For example, if a bill becomes legally due on 26th January (Republic Day), it will be supposed to be legally due on 25th January.
- (iii) If the date on which the bill is legally due is declared as an emergency holiday (*e.g.*, due to the death of a national leader), the bill can be paid *one day later*.

## 1.3 PAYMENT OF BILL OF EXCHANGE

There are a number of ways in which payment can be received and dishonour of the bill handled.

1. The payee may **retain** the bill (in his own possession) till the date of maturity and receive the payment from drawee.

2. The holder of a bill receivable can **endorse** the bill to another person by putting his signature at the back of the bill. An endorsee may again endorse the bill to another person and this chain can continue. The person holding the bill at the date of maturity will be entitled to receive the payment.
3. The holder of the bill can get the bill **discounted** from a bank. If he needs money before date of maturity, he can take the bill to a bank which deducts a *discount (which is interest on the face value of the bill for the remaining period)* and pays the remaining amount to the holder. On date of maturity, the bank receives the payment from the drawee.
4. Sometimes, instead of getting the bill discounted from the bank, it is sent to bank with instructions to keep the bill till date of maturity and then to **collect** the amount from the acceptor. The bank will credit the amount to customer's account after receiving the amount from acceptor, and it will deduct a small amount known as **commission**.
5. Sometimes, the debtor would like to pay the amount before due date. This is called **retiring the bill**. The holder of the bill may give him some **rebate** for receiving the money earlier than due date.
6. Sometimes, the debtor may be unable to pay the amount by due date. In such a case, he may request the creditor to cancel old bill and draw a new bill. This is called **renewal** of bill. Usually the creditor will charge an interest which may be paid in cash or added to the amount of new bill.
7. When the acceptor of the bill refuses to pay the amount on date of maturity, it is called **dishonour of the bill**. The holder of the bill can recover the amount from the acceptor of bill or any of the endorsers. However, he must serve *notice* of dishonour on them within a reasonable time.

The drawee may any time plead that the bill was not *presented* to him for payment. Therefore, the bill is handed over to a person called '*Notary Public*', appointed by the court. He again presents the bill to the acceptor and in case of dishonour, he notes this fact on the bill itself which is called a **noting**. Thus, noting is legal proof that the bill was presented and dishonoured. The notary public charges a fee called **noting charges**. They are paid to him by the holder of the bill but ultimately recovered from the acceptor as he was responsible for the dishonour of the bill.

In case a bill discounted from a bank gets dishonoured, initially the bank will recover noting charges from the person who got the bill discounted, but the noting charges will ultimately be recovered from the acceptor.

8. Sometimes, the acceptor of the bill may become **insolvent** and may be unable to pay his dues. Sometimes, partial recovery of amount (*e.g.* 60 paise per rupee) may be possible.

## 1.4 BANKER'S DISCOUNT AND TRUE DISCOUNT

First we shall study the concept of Present Value or Present Worth of money, which will lead us to the definition of true discount.

### Present Value (P.V.) or Present Worth

Discount is offered for quick payments because money earns interest. Thus, getting ₹ 10000 now is better than getting ₹ 10000 three months from now, because the money would earn interest in this period. Thus, if X has to pay Y ₹ 10000 three months hence, he would pay a lesser amount if he were to pay today.

The *present value* or *present worth*, say  $P$ , of given sum, say  $A$ , due at the end of a given period is that amount of money which alongwith interest, would amount to  $A$  at the end of given period.

Let  $n$  be the number of interest periods and  $i$  be the amount of interest per rupee per interest period. Then, simple interest for this period =  $P.n.i$ .

Now, Amount = Present value + Interest  $\Rightarrow A = P + \text{Interest}$ .

$$\Rightarrow A = P + Pni = P(1 + ni)$$

$$P = \frac{A}{1 + ni}$$

This gives the present value,  $P$ , of an amount  $A$  due  $n$  periods hence at interest rate  $i$  per rupee per interest period. As there are four variables in this formula, if three variables are known, the value of fourth can be calculated.

Consider the above example where person  $X$  purchases goods worth ₹ 10000 from  $Y$  and agrees to pay 3 months hence. If the interest rate is 12% per annum, then present value  $P$  is

$$P = \frac{A}{1 + ni} = ₹ \frac{10000}{1 + \frac{1}{4} \cdot \frac{12}{100}} = ₹ \frac{1000000}{103} = ₹ 9708.74.$$

Hence, instead of paying ₹ 10000 today,  $X$  will pay ₹ 9708.74, thus paying ₹ 291.26 less. This amount is called **true discount** or **rate discount** or **equitable discount**. *Note that true discount is interest on present value and not on amount due.*

Thus, T.D. = Interest on present value =  $A - P$

$$\text{Now } P = \frac{A}{1 + ni} \Rightarrow \text{T.D.} = A - P = A - \frac{A}{1 + ni} = \frac{Ani}{1 + ni} = Pni$$

$$\text{T.D.} = Pni = \frac{Ani}{1 + ni}$$

### Bankers Discount

As mentioned earlier, if the holder of the bill needs money before date of maturity, he can take the bill to a bank which deducts a *discount* called Banker's Discount (B.D.). *It is the interest on the face value of the bill for the remaining period.* The bank pays the remaining amount, called **proceeds** or **discounted value**, to the holder. On date of maturity, the bank receives (full) payment from the drawee.

If  $n$  is the number of remaining interest periods,  $i$  is the amount of interest per rupee per interest period, and  $A$  is the face value of the bill, then

$$\text{Banker's Discount (B.D.)} = Ani$$

and Discounted value =  $A - \text{B.D.}$

Thus, in the above example, where  $A = ₹ 10000$ ,  $n = 3 \text{ months} = \frac{1}{4} \text{ year}$ , and  $i = 12\% \text{ p.a.} = 0.12$ , and if the bill is discounted immediately *i.e.* 3 months before maturity, then

$$\text{Banker's Discount (B.D.)} = Ani = ₹ 10000 \times \frac{1}{4} \times 0.12 = ₹ 300$$

Thus, the bank will pay ₹ 10000 - ₹ 300 = ₹ 9700 to the holder of the bill.

$$\text{Now } \text{T.D.} = \frac{Ani}{1 + ni} \Rightarrow \text{T.D.} = \frac{\text{B.D.}}{1 + ni}$$

$$\Rightarrow (1 + ni) \text{T.D.} = \text{B.D.}$$

$$\text{B.D.} = (1 + ni) \text{T.D.}$$

### Banker's Gain

In the above example, strictly speaking, the bank should have paid Present Value (₹ 9708.74) to the holder rather than ₹ 9700. In other words, it should have deducted true discount (₹ 291.26) from the amount (face value, ₹ 10000) rather than deducting banker's discount (₹ 300). *The difference between the present worth and the amount paid by the bank is the Banker's Gain (B.G.)*

Thus, **Banker's Gain (B.G.)** = Present worth - Amount paid

$$= (\text{Amount due} - \text{T.D.}) - (\text{Amount due} - \text{B.D.})$$

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

$$\begin{aligned}
 &= \text{Interest on sum due} - \text{Interest on present worth} \\
 &= \text{Interest on (sum due - present worth)} \\
 &= \text{Interest on True Discount}
 \end{aligned}$$

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

$$\text{Now, interest on T.D.} = \text{T.D.} \times ni \text{ but T.D.} = \frac{A ni}{1 + ni}$$

$$\therefore \text{B.G.} = \frac{A ni}{1 + ni} \times ni = \frac{A (ni)^2}{1 + ni}$$

$$\boxed{\text{B.G.} = \frac{A (ni)^2}{1 + ni}}$$

In some of the questions below, the following formula is useful :

$$\boxed{\text{Sum due (Face value), } A = \frac{\text{B.D.} \times \text{T.D.}}{\text{B.D.} - \text{T.D.}}}$$

This is easy to derive :

$$\frac{\text{B.D.} \times \text{T.D.}}{\text{B.D.} - \text{T.D.}} = \frac{A ni \cdot \frac{A ni}{1 + ni}}{A ni - \frac{A ni}{1 + ni}} = \frac{A ni \cdot A ni}{A ni (1 + ni - 1)} = A$$

## ILLUSTRATIVE EXAMPLES

**Example 1.** Calculate the nominal date and legally due date for bills drawn on the following dates :

- (i) 1st January for 3 months                      (ii) 12 July for 1 month  
 (iii) 12 July for 30 days                              (iv) 30 December 2006 for 2 months  
 (v) 30 December 2007 for 2 months.

**Solution.** (i) Nominal date is 1st April and legally due date is 4th April.

(ii) Nominal date is 12 August. As 15th August is a national holiday, legally due date is 14th August.

(iii) Nominal date is 11th August (30 days after 12th July), and legally due date is 14th August.

(iv) Nominal date is 28th February 2007 and legally due date is 3rd March 2007.

(v) Nominal date is 29th February 2008 (as 2008 is a leap year) and legally due date is 3rd March 2008.

**Example 2.** A bill of ₹ 6000 drawn on 1st January for 3 months is discounted at 6% per annum. Find the amount of discount and the discounted value.

**Solution.** Discount = Interest on amount due

$$= ₹ 6000 \times 0.06 \times \frac{3 \text{ months}}{12 \text{ months}} = ₹ 90.$$

$$\text{Discounted value} = ₹ 6000 - ₹ 90 = ₹ 5910.$$

**Example 3.** A bill of ₹ 10000 drawn on 15th April for 3 months is discounted on 6th May at 8% per annum. Find the banker's discount. How much would the holder of the bill receive ?

**Solution.** Amount of bill = ₹ 10000

$$\text{Rate of interest} = 8\% \text{ p.a.} = 0.08$$

Bill is drawn on 15th April, so legally due date is 18th July.



As bill is discounted on 6th May,

remaining period = 25 days of May + 30 days of June + 18 days of July

$$= 73 \text{ days} = \frac{73}{365} \text{ years} = \frac{1}{5} \text{ year}$$

$$\therefore \text{Banker's discount} = Ani = ₹ 10000 \times 0.08 \times \frac{1}{5} = ₹ 160.$$

The holder will receive ₹ 10000 - ₹ 160 = ₹ 9840.

**Example 4.** A sum of ₹ 5000 is due 6 months hence at 12% simple interest per annum. Find the present value and the true discount.

**Solution.** Amount due  $A = ₹ 5000$

$$\text{Interest} = 12\% \text{ p.a.} = 0.12$$

Number of interest periods,  $n = 0.5$  (as time is 6 months =  $\frac{1}{2}$  year)

$$\begin{aligned} \therefore P &= \frac{A}{1+ni} = ₹ \frac{5000}{1+(0.12)(0.5)} \\ &= ₹ \frac{5000}{1.06} = ₹ 4717 \text{ (approx.)} \end{aligned}$$

$$\therefore \text{T.D.} = A - P = ₹ 5000 - ₹ 4717 = ₹ 283.$$

**Example 5.** X owes Y ₹ 4400 one year hence at 10% simple interest p.a. Y owes X ₹ 5832 two years hence at 8% compound interest. If they want to settle their dues now, who should pay how much amount to whom?

**Solution.** Here we should compare present values of two amounts of money.

P.V. of ₹ 4400 due one year hence at 10% simple interest

$$= \frac{A}{1+ni} = ₹ \frac{4400}{1+1 \times 0.1} = ₹ \frac{4400}{1.1} = ₹ 4000$$

P.V. of ₹ 5832 two years hence at 8% compound interest

$$= \frac{A}{(1+i)^n} = ₹ \frac{5832}{(1+0.08)^2} = ₹ 5000$$

Thus, X owes Y ₹ 4000 today and Y owes X ₹ 5000 today.

Hence, to settle their dues, Y should pay ₹ 1000 to X today.

**Example 6.** The true discount on a bill 9 months hence at 6% per annum is ₹ 360. Find the amount of the bill and its present worth.

**Solution.** We are given that interest rate  $i = 6\% = 0.06$ ,

As time = 9 months =  $\frac{3}{4}$  year,

number of interest periods,  $n = 0.75$ ,

$$\text{T.D.} = ₹ 360.$$

We want to calculate A and P.

Now  $\text{T.D.} = Pni$

$$\therefore P = \frac{\text{T.D.}}{ni} = ₹ \frac{360}{(0.75)(0.06)} = ₹ \frac{360}{0.045} = ₹ 8000$$

$$\therefore \text{Amount due, } A = P + \text{T.D.} = ₹ (8000 + 360) = ₹ 8360.$$

**Example 7.** (i) The true discount on ₹ 2080 due after a certain period of time at 8% is ₹ 80. Find the time after which it is due.

(ii) The true discount on a bill 15 months hence at 8% simple interest is ₹ 100. Find the amount of the bill.

(iii) If the true discount on ₹ 4360 due 18 months hence at simple interest p.a. is ₹ 360, find the rate of interest.

**Solution.** (i) Amount due,  $A = ₹ 2080$ , T.D. = ₹ 80,  $i = 8\% = 0.08$ .

Now, present value,  $P = A - \text{T.D.} = ₹ 2080 - ₹ 80 = ₹ 2000$ .

As T.D. = interest on  $P = Pni$ , we get

$$₹ 80 = ₹ 2000 \cdot n (0.08)$$

$$\Rightarrow n = \frac{80}{(2000)(0.08)} \text{ year} = \frac{80}{160} \text{ year} = \frac{1}{2} \text{ year} = 6 \text{ months.}$$

(ii) Here, T.D. = ₹ 100,  $n = 15 \text{ months} = \frac{5}{4} \text{ years}$ ,  $i = 8\% = 0.08$ .

Using T.D. =  $\frac{Ani}{1+ni}$ , we get

$$A = \frac{\text{T.D.} (1+ni)}{ni} = ₹ \frac{100 \left[ 1 + \frac{5}{4}(0.08) \right]}{\frac{5}{4}(0.08)} = ₹ \frac{100(1.1)}{0.1} = ₹ 1100.$$

(iii)  $A = ₹ 4360$ , T.D. = ₹ 360

$\therefore$  Present value,  $P = A - \text{T.D.} = ₹ 4360 - ₹ 360 = ₹ 4000$

Here,  $n = 18 \text{ months} = \frac{3}{2} \text{ years} = 1.5 \text{ years.}$

Now T.D. = Interest on present value =  $Pni$

$$\therefore ₹ 360 = ₹ 4000 \times 1.5 \times i$$

$$\Rightarrow i = \frac{360}{4000 \times 1.5} = \frac{360}{6000} = 0.06 \text{ i.e. } 6\% \text{ per annum.}$$

**Example 8.** Rajesh discounts a bill of ₹ 6000 from a bank 2 months before due date and gets ₹ 5900 from the bank. What is the rate of interest? What is true discount? What is banker's gain?

**Solution.** Banker's discount = Face value – amount received  
= ₹ 6000 – ₹ 5900 = ₹ 100.

Here,  $n = 2 \text{ months} = \frac{1}{6} \text{ year.}$

Using the formula, B.D. =  $Ani$ , we get

$$₹ 100 = ₹ 6000 \times \frac{1}{6} \times i \Rightarrow 100 = 1000 i$$

$$\Rightarrow i = \frac{1}{10} = 0.1 \text{ i.e. } 10\%.$$

Using the formula, B.D. =  $(1 + ni)$  T.D., we get

$$₹ 100 = \left( 1 + \frac{1}{6} \times 0.1 \right) \text{ T.D.}$$

$$\Rightarrow \text{T.D.} = ₹ 100 \times \frac{6}{6.1} = ₹ \frac{6000}{61} = ₹ 98.36$$

Banker's gain, B.G. = B.D. – T.D. = ₹ 100 – ₹ 98.36 = ₹ 1.64.

**Example 9.** The present worth of a bill due sometime hence is ₹ 1100 while the true discount on the bill is ₹ 110. Find the amount of bill, banker's discount, banker's gain and discounted amount of bill.

**Solution.** Present worth = ₹ 1100, true discount = ₹ 110.

Amount of bill = Present worth + true discount = ₹ 1210.

Using the formula, T.D. =  $Pni$ , we get

$$₹ 110 = ₹ 1100 \times ni \Rightarrow ni = \frac{1}{10} = 0.1 \quad \dots(i)$$

Using the formula, B.D. =  $Ani$ , we get

$$\text{B.D.} = ₹ 1210 \times 0.1$$

(using (i))



## EXERCISE 1

- Explain the following terms :
    - Present worth
    - True discount
    - Banker's discount
    - Banker's gain
    - Noting
    - Noting charges
    - Endorsing a bill
    - Renewing a bill
    - Discounting a bill
    - Retiring a bill
    - Dishonour of a bill.
  - Calculate the nominal date and legally due date for bills drawn on the following dates :
    - 1st April for 6 months
    - 23 December for a month
    - 30 December for 2 months (assuming that next year is not a leap year)
    - 4th July for 2 months
    - 4th July for 60 days.
  - A bill for 3 months is drawn on 1st July and accepted on 3rd July. Calculate nominal date and due date if the bill is (i) after date (ii) after sight.
  - A bill of ₹ 10000 drawn on 4th April for 4 months is discounted at 6% per annum. Find the amount of discount and the discounted value of the bill. If the bill is discounted on 7th May, find the banker's discount.
    - Find the Banker's discount and the discounted value of a bill worth ₹ 600 drawn on May 15, 2005 for 3 months and discounted on July 20, 2005 at 5% per annum. (I.S.C. 2006)
  - A bill of ₹ 60000 drawn on May 27 at 6 months is discounted on August 8 at 6% p.a. How much does the banker charge and what does the holder receive ?
  - A bill of exchange for ₹ 722 was drawn on 3rd April, 2009, payable three months after date. It was discounted on 15th April, 2009, at 4.75% per annum. What was the discounted value of the bill? (I.S.C. 2010)
    - A bill of exchange for ₹ 750.00 was drawn on 3rd April, 2000 payable at 3 months after date. It was discounted on 24th April, 2000 at 5% per annum. What was the discounted value of the bill? (I.S.C. 2005)
  - A sum of ₹ 3150 is due 10 months hence at 6% simple interest p.a. Find the present value and true discount.
  - A sum of ₹ 4668.75 is due 9 months hence at 5% simple interest p.a. Find the present value and the true discount.
  - The true discount on a bill 9 months hence at 6% per annum is ₹ 90. Find the amount of the bill and its present value.
  - The true discount on a bill 8 months hence at 6% per annum is ₹ 120. Find the amount of the bill and its present value.
  - The true discount on ₹ 2040 due after a certain period of time at 8% is ₹ 40. Find the time after which it is due.
    - The true discount on a bill of ₹ 660 is ₹ 110. The rate of interest is 4 percent. In how much time will the bill be due ? (I.S.C. 2002)
- Hint.** (ii) Use  $T.D. = \frac{Ani}{1+ni}$ .
- The true discount on a bill 6 months hence at 6% simple interest is ₹ 360. Find the amount of the bill.
  - If the true discount on ₹ 5600 due 15 months hence is ₹ 600, find the rate of interest.
  - A bill for ₹ 21900 drawn on July 10 for 6 months was discounted for ₹ 21720 at 5% p.a. On what day was the bill discounted ?
  - A bill of exchange drawn on January 6, 1999 at 4 months was discounted on March 28, 1999. If the banker's discount at 5% per annum is ₹ 1008, find the face value of the bill.

## CHAPTER TEST

1. Fill in the blanks :
  - (i) Bill of exchange is an order to \_\_\_\_\_ , while promissory note is a promise to \_\_\_\_\_ .
  - (ii) Bill discount is interest on \_\_\_\_\_ .
  - (iii) True discount is interest on \_\_\_\_\_ .
  - (iv) Banker's gain is interest on \_\_\_\_\_ .
  - (v) Bill of exchange may be after date or \_\_\_\_\_ .
  - (vi) The person endorsing a bill is called \_\_\_\_\_ while to whom it is endorsed is called \_\_\_\_\_ .
  - (vii) The person who prepares the bill is called \_\_\_\_\_ , the person who has to make the payment is called \_\_\_\_\_ , and the person who has to receive the payment is called \_\_\_\_\_ .
  - (viii) Hundis are bills of exchange written in \_\_\_\_\_ .
  - (ix) A cheque is a bill of exchange drawn on a \_\_\_\_\_ , payable on \_\_\_\_\_ .
  - (x) A bill of exchange is signed by \_\_\_\_\_ while a promissory note is signed by \_\_\_\_\_ .
2. X draws a bill on Y for ₹ 3000 on 1st March, 2007 payable after 3 months. The bill is discounted by X, as he is in need of money. Compute the discount in each of the following cases :
  - (i) The bill is discounted for ₹ 2840.
  - (ii) The bill is discounted @ 8% per annum.
3. 'A' received acceptance from 'B' for ₹ 26000 on 1st March, 2007 at 4 months. 'A' got the acceptance discounted at 6% per annum at his bank after 1 month. How much was received by 'A' from the bank after discounting the acceptance ?
4. What is the face value of a bill discounted at 5% p.a. 73 days earlier than the date of maturity, the banker's gain being ₹ 10 only ?
5. A man holds a bill for ₹ 12000 which is due for payment after 8 months. After 3 months, however, he sells the bill to a broker who charges 5% p.a. The man then invests the discounted value of the bill in a security whose rate of interest is such that he does not suffer any loss on discounting the bill. Find the rate of interest percent per annum of the security.
6. The banker's discount and true discount on a certain sum of money due 3 months hence are ₹ 515 and ₹ 500 respectively. Find the sum of money and the rate of interest.
7. A bill of ₹ 6000 drawn on 20th May at 6 months is discounted on 1st August at 6% per annum. How much does the banker charge ? What amount does the holder receive ?
8. A bill drawn on 1st August for 3 months at 5% p.a. was discounted on 23rd August to realise ₹ 7920. Find the face value of the bill.
9. A bill of ₹ 10000 drawn on May 7 for 6 months was discounted at 6% p.a. for a cash payment of ₹ 9880. Find the date on which it was encashed.
10. Find the rate percent at which the true discount on a bill legally due in 10 months time will be exactly the same as the banker's discount at  $7\frac{1}{2}\%$  p.a.

11. A bill is drawn for ₹ 5050 on June 10, 2008 at 5 months. It is discounted on Sept. 1, 2008 at 5% per annum. How much does the holder of the bill receive? What is the gain of the bank in the transaction?
12. Anshul pays ₹ 8000 two months before due date to Rahul and gets a rebate of ₹ 80. What is the percentage rate of rebate?
13. On 1st January 2007, A purchased goods worth ₹ 6000 from B and accepts a bill drawn by B payable after two months. On the due date, A is able to pay only 2000 rupees and accepts a fresh bill at four months for the balance plus interest at 15% per annum. What is the new amount?
14. The true discount on a certain bill is  $\frac{3}{4}$ th of the banker's discount. If the rate of interest is 10% (simple), find the time.
15. The difference between the interest and discount on a sum of money payable in  $\frac{4}{3}$  years at  $3\frac{3}{4}$ % per annum is ₹ 4. Find the sum.
16. A person discounts a bill 10 months hence at 4%. What return does he get on his investment?
17. A bill of exchange for ₹ 846.50 at 4 months after date was drawn on 12 January, 2008 and discounted at  $3\frac{1}{2}$ % on 8 February, 2008. Find the banker's discount and the discounted value.
18. A bill of exchange for ₹ 846.50 at 4 months after sight drawn on 12 January, 2008 and accepted on 16th January was discounted at  $3\frac{1}{2}$ % on 8 February, 2008. Find the banker's discount and the discounted value of the bill.
19. A accepts a bill of ₹ 20000 drawn by B at 6% for 3 months. On due date, he requests B to renew the bill for further 3 months. B agrees but says he will charge 8%. What is the amount of new bill? On maturity of this bill, however, A declares insolvency. His assets are ₹ 2 lacs while his liabilities are ₹ 4 lacs. Find the amount received by B.
20. The banker's discount and true discount on a bill discounted on January 23, 2008 are respectively ₹ 210 and ₹ 200. If the rate of interest is 10% p.a., find the legal date of maturity and the face value of the bill.
21. Harish draws a bill of exchange after date on Basu for ₹ 73000 on January 12, 2008, which is due after 5 months. Basu accepts the bill on January 15, 2008 and returns it to Harish. Harish discounted the bill from a bank for ₹ 72000 on the same day. Find the rate at which bill was discounted.

## ANSWERS

### EXERCISE I

2. (i) 1st October, 4th October  
(iii) 28th February, 3rd March  
(v) 2nd September, 5th September.
3. (i) 1st October, 4th October  
(ii) 3rd October, 6th October.
4. (i) ₹ 200, ₹ 9800, ₹ 151.23  
(ii) ₹ 2.38; ₹ 597.62.

5. ₹ 1124.38, ₹ 58875.62.
6. (i) ₹ 714.30 (ii) ₹ 742.50 7. ₹ 3000, ₹ 150.
8. ₹ 4500, ₹ 168.75. 9. ₹ 2090, ₹ 2000. 10. ₹ 3120, ₹ 3000.
11. (i) 3 months (ii) 5 years 12. ₹ 12360.
13. 8%. 14. November 14. 15. ₹ 175200.
16. ₹ 29.32. 17. T.D. = ₹ 800, B.D. = ₹ 810.
18. June 19. 19. ₹ 1000. 20. ₹ 300.
21. ₹ 50000. 22. ₹ 3280, 10%. 23. ₹ 200.
24. ₹ 0.45, ₹ 30.45, ₹ 2030. 25. ₹ 15000, ₹ 15360.
26. (i) ₹ 101000 (ii) ₹ 1010. 27. ₹ 11. 28. ₹ 4200.
29. ₹ 5100. 30. (i) ₹ 8000 (ii) ₹ 8100 (iii) ₹ 648000.
31. ₹ 151500. 32. ₹ 13000. 33. ₹ 100600.
34. ₹ 1.19; ₹ 298.81. 35. ₹ 25000, ₹ 25500, ₹ 1275000. 36. 5% p.a.
37. ₹ 9520 38. ₹ 196000. 39. ₹ 39600.
40. ₹ 25050, ₹ 25000. 41. ₹ 30000. 42. November 14.
43. 16% p.a. 44. 3 months. 45. ₹ 12698.65.
46. ₹ 193.15; ₹ 29806.85. 47.  $5\frac{5}{79}\%$ . 48. 5.5% approx.

### CHAPTER TEST

1. (i) make payment, pay (ii) sum due (face value) (iii) present worth  
(iv) true discount (v) after sight (vi) endorser, endorsee (vii) drawer, drawee, payee  
(viii) vernacular (ix) banker, demand (x) drawer or payee, drawee.
2. (i) ₹ 160 (ii) ₹ 60. 3. ₹ 25610. 4. ₹ 101000.
5.  $5\frac{5}{47}\%$  p.a. 6. ₹ 17166.66, 12% p.a. 7. ₹ 112.44, ₹ 5887.56.
8. ₹ 8000. 9. August 29.
10. 8%. 11. ₹ 4999.50, ₹ 0.50. 12. 6%.
13. ₹ 4200. 14.  $3\frac{1}{3}$  years.
15. ₹ 1680. 16. 4.14%. 17. ₹ 7.87; ₹ 838.63.
18. ₹ 8.20, ₹ 838.30. 19. ₹ 20400, ₹ 10200.
20. July 23, 2008; ₹ 4200. 21.  $3\frac{21}{73}\%$ .