CHAPTER 6

HIRE PURCHASE

HIRE PURCHASE AND INSTALLMENT SALE TRANSACTION

Hire Purchase Accounting: Under Hire Purchase System, hire purchaser pays the cost of purchased asset in number of installments. The ownership of the goods is transferred by the Hire Vendor only after payment of outstanding balance.

Installment System: Under Installment System also, the purchaser pays the cost of purchased asset in number of installments. However, under installment system, ownership of the goods is transferred by owner on the date of delivery of the goods.

NATURE OF HIRE PURCHASE AGREEMENT

- Under the Hire Purchase System the Hire Purchaser gets possession of the goods at the outset and can use it, while paying for it in installments over a specified period of time as per the agreement.
- Each installment paid by the hire purchaser is treated as hire charges for using the asset.
- In case he fails to pay any of the installments (even the last one) the hire vendor has the right to take back his goods without compensating the buyer, i.e., the hire vendor is not going to pay back a part or whole of the amount received through installments till the date of default from the buyer.

SPECIAL FEATURES OF HIRE PURCHASE AGREEMENT

1. ***Possession:*** The hire vendor transfers only possession of the goods to the hire purchaser immediately after the contract for hire purchase is made.
2. ***Installments:*** The goods are delivered by the hire vendor on the condition that a hire purchaser should pay the amount in periodical installments.
3. ***Down Payment:*** The hire purchaser generally makes a down payment, i.e., an amount on signing the agreement.
4. ***Constituents of Hire purchase installments:*** Each installment consists of two elements- finance charge (interest on unpaid amount) and capital payment.
5. ***Ownership:*** The property in goods is to pass to the hire purchaser on the payment of the last installment and exercising the option conferred upon him under the agreement.
6. ***Repossession:*** In case of default in respect of payment of even the last installment, the hire vendor has the right to take the goods back without making any compensation.

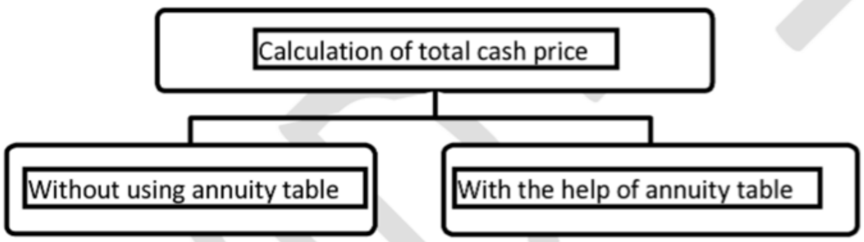
TERMS USED IN HIRE PURCHASE AGREEMENTS

1. ***Hire Vendor:*** Hire vendor is a person who delivers the goods along with its possession to the hire purchaser under a hire purchase agreement.
2. ***Hire Purchaser:*** Hire purchaser is a person who obtains the goods and rights to use the same from hire vendor under a hire purchase agreement.

3. ***Cash Price:*** Cash price is the amount to be paid by the buyer on outright purchase in cash.
4. ***Down Payment:*** Down payment is the initial payment made to the hire vendor by the hire purchaser at the time of entering into a hire purchase agreement.
5. ***Hire Purchase Installment:*** Hire purchase installment is the amount which the hire purchaser has to pay after a regular interval upto certain period as specified in the agreement to obtain the ownership of the asset purchased(on payment of the last installment) under a hire purchase agreement. It comprises of principal amount and the interest on the unpaid amount.
6. ***Hire purchase price:*** It means the total sum payable by the hire purchaser to obtain the ownership of the asset purchased under hire purchase agreement. It comprises of cash price and interest on outstanding balances.

ASCERTAINMENT OF TOTAL CASH PRICE

We know that the basis for accounting in the books of the hire purchaser is the total cash price. Sometimes, the total cash price may not be given. For the purpose of ascertaining the total cash price, we can use any of the following methods according to the need.



Calculation of Total Cash Price without using Annuity Table

In this method, the interest included in the last installment is to be calculated first with the help of the appropriate formula (explained below).
For example in a hire purchase transaction, apart from down payment, four other installments are payable. The interest will be calculated first on the 4th installment, then on the 3rd installment, then on the 2nd installment and lastly on the 1st installment. Interest on down payment will be nil.
In this connection, it should be noted that the amount of interest will go on increasing from the 4th installment to the 3rd installment, from the 3rd installment to the 2nd installment and from the 2nd installment to the 1stinstallment.
We know that interest is to be calculated on the outstanding balance of cash price.
In this case, we will have to calculate the interest with the help of the total amount due on hire purchase price since the cash price is not known. For the purpose of calculating the interest, the following steps should be followed:

Step1: Calculate the ratio between interest and the amount due with the help of the following formula:

$$Ratio\ of\ interest\ and\ amount\ due = \frac{\text{Rate of Interest}}{100 + \text{Rate of Interest}}$$

Step 2: Calculate the interest included in the last installment by applying the following formula:

Interest = Total amount due at the time of installment x Ratio of interest and amount due (as calculated in step1)

Step 3: Subtract the interest (as calculated instep 2) from this installment to get the amount of outstanding cash price at the time of last installment.

Step 4: Add the cash price calculated in Step 3 to the amount of installment due at the end of the third year.

Step 5: Calculate the interest on the entire sum (cash price included in the 4^{th} installment + amount of 3^{rd} installment). Deduct this interest from the total amount due at the end of 3^{rd} year to get the outstanding cash price at the time of 3^{rd}installment.

Step 6: Add the cash price calculated in step 5 to the amount of installment due at the end of 2ndyear.

Step 7: Calculate the interest on the entire sum so obtained in Step 6.Deduct this interest from the total amount due at the end of 2^{nd}year to get the outstanding cash price at the time of 2^{nd}installment.

Step 8: Add the cash price calculated in Step 7 to the amount of installment due at the end of 1^{st}year.

Step 9: Calculate the interest on the entire sum so obtained in Step 8. Deduct this interest from the total amount due at the end of 1^{st} year to get the outstanding cash price at the time of 1^{st}installment.

Step10: Add the cash price calculated in Step 9 to the amount of down payment, if any. The sum so obtained will be the total cash price.

Calculation of Total Cash Price with the help of Annuity Table

Cash price = Down payment + Present value of installments

Present value of installments is calculated as follows:

(a) If present value of an annuity of ` 1 for a given period, at given rate of interest, is given Present value of installments = Annual installments x Present value of an annuity of ` 1 for a given period at given rate ofinterest

= Annual installment x $(1+r^n) - 1 / r(1+r)^n$

(b) If annuity to recover ` 1 during a given period at given rate of interest is given

= Annual installment x $r(1+r)^n / (1+r)^n - 1$

ASCERTAINMENT OF INTEREST

We know that the hire purchase price consists of two elements:

(i) cash price; and(ii) interest. Cash price is an expenditure incurred for the acquisition of an asset towards payment of capital (principal) amount and (ii) interest is a expense in the nature of revenue for delay in making the full payment. Ascertainment of any of these two gives the answer for the other, e.g., if we ascertain the total amount of interest, it becomes very simple to ascertain the cash price just by deducting the amount of interest from the hire purchase price.

Interest is charged on the amount outstanding. Therefore, if the hire purchaser makes a down payment on signing the contract, it will not include any amount of interest. It should be noted that though the installments of a hire purchase agreement may be equal, the interest element in each installment is not the same.

At the time of calculating interest, students may face the following two situations:

(a) When the cash price, rate of interest and the amount of installments are given; and

(b) When the cash price and the amount of installments are given, but the rate of interest is not given.

When the cash price, rate of interest & the amount of installments are given

In this situation, the total amount of interest is to be ascertained first. It is the difference between the hire purchase price (down payment + total installments) and the cash price. To calculate the amount of interest involvedin each installment the following steps arefollowed:

Step 1: Deduct down payment from the cash price. Calculate the interest at the given rate on the remaining balance. This represents the amount of interest included in the first installment.

Step 2: Deduct the interest of Step 1 from the amount of first installment. The resultant figure is the cash price included in the first installment.

Step 3: Deduct the cash price of the 1st installment (Step 2) from the balance due after down payment. It represents the amount outstanding after the 1st installment is paid.

Step 4: Calculate the interest at the given rate on the balance outstanding after the 1st installment. Deduct this interest from the amount of the 2nd installment to get the cash price included in the2nd installment.

Step 5: Deduct the cash price of the 2nd installment (Step 4) from the balance due after the 1st installment. It represents the amount outstanding after the 2nd installment is paid. Repeat the above steps till the last installment is paid.

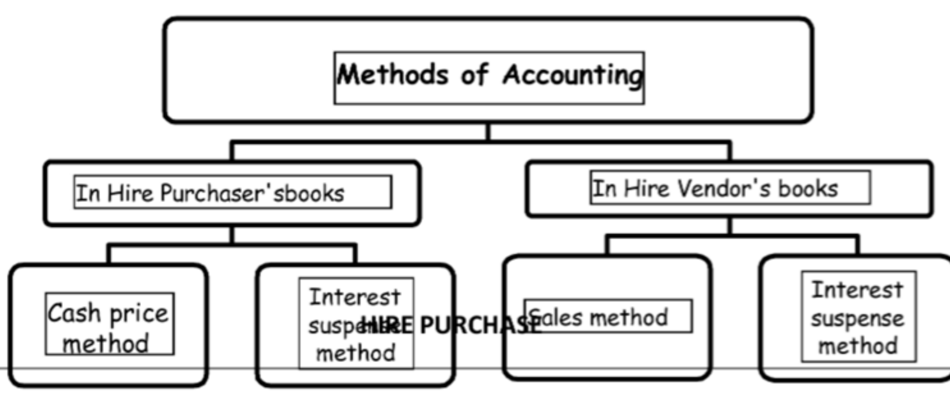
When the cash price and the amount of installments are given, but the rate of interest is not given

When the rate of interest is not given, but the cash price and the amount of installments are given, we have to find interest rate implicit in the transaction by bifurcating the installments between reduction in liability and finance charges (interest).

Internal rate of return (IRR) is the discount rate that equates the present value of the expected net cash outflows (amount of down-payment and installments) with the cash price. When the net cash flows are not uniform over the life of the investment, the determination of the discount rate can involve trial and error and interpolation between interest rates.

In case of hire purchase, Internal Rate of Return Method (IRR)^{x} method considers the time value of money, the cash price, and all cash outflows (amount of down-payment and installments) relating to the purchase of the asset on hire purchase basis. IRR method does not use the desired rate of return but estimates the discount rate that makes the present value of subsequent net cash outflows equal to the cash price.

ACCOUNTING FOR HIRE PURCHASE TRANSACTION



In the Books of Hire Purchaser

There are following two methods of recording the hire purchase transactions in the books of the hire-purchaser:

1. Cash price method
2. Interest suspense method

> ***It is necessary to disclose assets taken on hire purchase basis by classifying it as "Asset on Hire Purchase". Accordingly, amount due to the hire vendor should also be shown in his books as a liability—"Hire Purchase Creditors" with additional such classifications of amount of hire purchase installment due and amount of hire purchase installment not yet due.***

Cash price method

Under this method, the full cash price of the asset is debited to the Asset Account and credited to the Hire Vendor Account, therefore, it is also called Full Cash Price Method. At the time of payment of installment, Interest Account is debited and Hire Vendor Account is credited (with the interest on outstanding balance). When installment is paid, the Hire Vendor Account is debited and Bank Account is credited. At the time of preparation of Final Accounts, interest is transferred to Profit and Loss Account and asset is shown in the Balance Sheet at cost less depreciation. The balance due to hire vendor is shown in the Balance Sheet as a liability

Accounting

To have proper accounting record, one should know: (1) Date of purchase of the asset; (2) Cash price of the asset; (3) Hire purchase price of the asset; (4) The amount of down payment; (5) Number and amount of each installment; (6) Rate of interest; (7) Method and rate of depreciation; (8) Date of payment of every installment; and (9) Date of closing the books of account.

Journal Entries

1.	*At the time of entering into the agreement* Asset Account To Hire Vendor Account	Dr. [Full cash price]
2.	*When down payment is made* Hire Vendor Account To Cash/Bank Account	Dr. [Down payment]
3.	*When an installment becomes due* Interest Account To Hire Vendor Account	Dr. [Interest on outstanding balance]
4.	*When an installment is paid* Hire Vendor Account To Bank Account	Dr. [Amount of installment]
5.	*When depreciation is charged on the asset* Depreciation Account To Asset Account	Dr. [Calculated on cash price]
6.	*For closing interest & depreciation account* Profit and Loss Account To Interest Account To Depreciation Account	Dr.

Disclosure in the balance sheet

Assets	
Fixed Assets:	
Asset (at cash price)	xxxxxxx.x
Less: Depreciation	xxxx.xx

the assets side as Hire Purchase Debtors.

Journal Entries

1.	*When goods are sold and delivered under hire purchase*	
	Hire Purchaser Account	Dr. [Full cash price]
	To H.P. Sales Account	
2.	*When the down payment is received*	
	Bank Account	Dr.
	To Hire Purchaser Account	
3.	*When an installment becomes due*	
	Hire Purchaser Account	Dr.
	To Interest Account	
4.	***When the amount of installment is received***	
	Bank Account	Dr.
	To Hire Purchaser Account	
5.	*For closing interest Account*	
	Interest Account	Dr.
	To Profit and Loss Account	
6.	For closing Hire Purchase Sales Account	Dr.
	H.P. Sales Account	
	To Trading Account	

is worth noting that

(i) The entire profit on sale under hire purchase agreement is credited to the Profit and Loss account of the year in which the sale has taken place; and

(ii) Interest pertaining to each accounting period is credited to the Profit and Loss Account of the respective year.

Interest Suspense Method

This method is almost similar to the sales method, except the accounting for interest. Under this method, the hire purchaser is debited with full cash price and interest (total) included in the hire selling price. Credit is given to the H.P. Sales Account and Interest Suspense Account. When the installment is received, the Bank Account is debited and the Hire Purchaser Account is credited. At the same time an appropriate amount of interest (i.e., interest for the relevant accounting period) is removed from the Interest Suspense Account and credited to the Interest Account. At the time of preparation of Final Accounts, interest is transferred to the credit of the Profit and Loss Account. The balance of the Interest Suspense Account is shown in the Balance Sheet as a deduction from Hire Purchase Debtors.

Journal Entries

1.	*When goods are sold and delivered under hirepurchase* Hire Purchaser Account To H.P. Sales Account To Interest Suspense Account	 Dr. [Full cash price + total interest] [Full cash price] [Total Interest]
2.	*When down payment/installment is received* Bank Account To Hire Purchaser Account	 Dr.
3.	For interest of the relevant accounting period Interest Suspense Account To Interest Account	 Dr.
4.	For closing interest Account Interest Account To Profit and Loss Account	 Dr.

5.	For closing Hire Purchase Sales Account H.P. Sales Account To Trading Account	 Dr.

The disclosure in balance sheet of the respective parties will be:

Balance Sheet of Hire Purchaser

Fixed assets:

Asset on Hire purchase

Less: Depreciation

Liabilities

Amount payable to Vendor

Less: Balance in Interest Suspense A/c

Balance Sheet of Vendor *Assets*

Assets* Vendor *Assets

Current assets:

Hire purchase debtors

Less: Balance in Interest suspense A/c

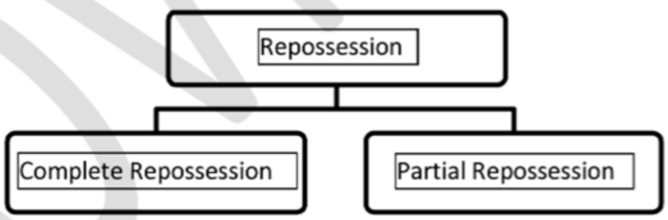
Liabilities

REPOSSESSION

In a hire purchase agreement, the hire purchaser has to pay up to the last installment to obtain the ownership of goods. If the hire purchaser fails to pay any of the installments, the hire vendor takes the asset back in its actual form without any refund of the earlier payments to the hire purchaser. The amounts received from the hire purchaser through down payment and installments are treated as the hire charges by the hire vendor. This act of recovery of possession of the asset is termed as **repossession.**

Repossessed assets are resold to any other customer after repairing or reconditioning (if necessary). Accounting figures relating to repossessed assets are segregated from the normal hire purchase entries. Repossessions are then accounted for in a separate "Goods Repossessed Account".

So far as the repossession of assets are concerned, the hire vendor can take back the whole of the asset or a part thereof depending on the agreement between the parties. The former is called "Complete Repossession" and the latter is called "Partial Repossession".



Complete Repossession

The hire vendor closes Hire Purchaser's Account by transferring balance of Hire Purchaser Account to Goods Repossessed Account.

The hire purchaser closes the Hire Vendor's Account by transferring the balance of Hire Vendor Account to Hire Purchase Asset and then finding the profit and loss on repossession in Asset Account.

After repossession, the vendor may incur expenses on repossessed stock and may sell the same in due course of time.

Particulars	***Books of hire purchaser***	***Books of hire vendor***
Purchase/Sales	Asset A/c ...Dr. To Hire Vendor A/c	Hire Purchaser A/c ...Dr. To Sales A/c
Installment	Hire Vendor A/c ...Dr.	Cash A/c ...Dr.

	To Cash A/c	To Hire Purchaser A/c
Interest	Interest A/c ...Dr. To Hire Vendor	Hire Purchaser A/c ...Dr. To Interest A/c
Repossession	Hire Vendor A/c ...Dr. To Asset A/c	Goods Repossessed A/c ...Dr. To Hire Purchaser

Partial Repossession

In case of a partial repossession, only a part of the asset is taken back by the hire vendor and other part is left with the hire purchaser. The Journal Entries are as usual upto the date of default (excepting entry for payment) in the book so both the parties. As a portion of the asset is still left with the hire purchaser, neither party closes the account of the other in their respective books.

Assets are repossessed at a mutually agreed value (based on agreed rate of depreciation which is an enhanced rate). The hire vendor debits the Goods Repossessed Account and credit the Hire Purchaser Account with the value as agreed upon on the repossession. Similarly, the hire purchaser debits the Hire Vendor Account and credits the Assets Account with the same amount. If the repossessed value is less than the book value of the asset which is repossessed, the difference is charged to the Profit and Loss Account of the hire purchaser as **'loss on surrender'.**

For the remaining portion of the asset lying with the hire purchaser, the (Hire Purchaser) applies the usual rate of depreciation and shows the Asset Account at its usual written-down value.

INSTALLMENT PAYMENT SYSTEM

In installment payment system, the ownership of the goods is passed immediately to the buyer on the signing the agreement. The accounting entries under installment payment system are similar to those passed under the hire-purchase system. The scheme of entries is asunder:

Books of buyer: Buyer debits asset account with full cash price, credits vendor's account with full installment price and debits interest suspense account with the difference between full cash price and full installment price. Interest is debited to interest suspense account (not interest account) because it includes interest in respect of a number of years. Every year interest account is debited and interest suspense account is credited with the interest of current year. Interest account, at the end of the year, is closed by transferring to profit and loss account. The balance of vendor account should be shown in the balance sheet after deducting amount in interest suspense account. Vendor is paid the installment due to him and entry for the depreciation is passed in the usual way.

Books of Seller: The seller debits the purchaser with the full amount (installment price) payable by him and credits sales account by the full cash price and credits interest suspense account by the difference between the total installment price and total cash price. Seller, like the buyer, also transfers the amount of interest due from the interest suspense account interest account every year. Interest account is closed by transferring to profit and loss account and the purchaser account should be shown in the balance sheet after deducting amount in interest suspense account. On receiving the installment the vendor debits cash/bank account and credits purchaser's account.

DIFFERENCE OF HIRE PURCHASE AGREEMENT & INSTALLMENT PAYMENT AGREEMENT

	Basis of Distinction	***Hire Purchase***	***Installment System***
1.	Governing Act	It is governed by Hire Purchase Act, 1972.	It is governed by the Sale of Goods Act, 1930.
2.	Nature of Contract	It is anagreement of hiring.	It is an agreement of sale.
3.	Passing ofTitle (ownership)	The title to goods passes on last payment.	The title to goods passes immediately as in the case of usual sale.
4.	Right to Return goods	The hirer may return goods without further payment except for accrued installments.	Unless seller defaults, goods are not returnable.
5.	Seller's right to repossess	The seller may take possession of the goods if hirer is in default.	The seller can sue for price if the buyer is in default. He cannot take possession of the goods.
6	Right of Disposal	Hirer cannot hire out sell, or assign entitling off the goods retain good title to the fide purchaser.	The buyer may dispose pledge and give transferee to the bona possession as against hire vendor.
7	Responsibility for Risk of Loss	The hirer is not responsible for risk of loss of goods if he has taken reasonable precaution because the ownership has not yet transferred.	The buyer is responsible for risk of loss of goods because of the ownership has transferred.
8	Name of Parties involved	The parties involved are called Hirer and Hire vendor.	The parties involved are called buyer and seller.
9	Component other than cash price	Component other than Cash Price included in installment is called Hire charges.	Component other than Cash Price included in Installment is called Interest.

IMPORTANT QUESTION

Question – 1.
Asha purchased a truck on hire purchase system. As per terms he is required to pay ₹ 70,000 down, ₹ 53,000 at the end of first year, ₹ 49,000 at the end of second year and ₹ 55,000 at the end of third year. Interest is charged @ 10% p.a.
You are required to calculate the total cash price of the truck and the interest paid with each installment.

Solution:

(1) ***Ratio of interest and amount due*** $= \frac{Rate\ of\ interest}{100+Rate\ of\ interest} = \frac{10}{110} = 1/11$

(2) Calculation of Interest and Cash Price

No. of installments	***Amount due at the time of installment***	***Interest***	***Cash price***
[1]	**[2]**	**[3]**	**[4]**

3rd	55,000	1/11 of ₹ 55,000 =₹5,000	50,000
2nd	*99,000	1/11 of ₹ 99,000 = ₹9,000	90,000
1st	**1,43,000	1/11of ₹ 1,43,000 = ₹13,000	1,30,000

Total cash price = ₹ 1,30,000+ 70,000 (down payment) =₹ 2,00,000.
*₹ 50,000 + 2nd installment of ₹ 49,000 = ₹99,000.
** ₹ 90,000 + 1st installment of ₹ 53,000 = ₹1,43,000.

Question – 2.
A acquired on 1st January, 20X1 a machine under a Hire-Purchase agreement which provides for 5 half-yearly installments of ₹ 6,000 each, the first installment being due on 1st July, 20X1. Assuming that the applicable rate of interest is 10 per cent per annum, calculate the cash value of the machine. All working should form part of the answer

Solution:

Statement showing cash value of the machine acquired on hire-purchase basis

	Installment Amount	***Interest @ 5% half yearly (10% p.a.) = 5/105 = 1/21 (in each installment)***	***Principal Amount (in each installment)***
	₹	₹	₹
5th Installment	6,000	286	5,714
Less: Interest	(286)		
	5,714		
Add: 4th Installment	6,000		
	11,714	558	5,442
Less: Interest	(558)		(6,000 – 558)
	11,156		
Add: 3rd installment	6,000		
	17,156	817	5,183
Less: Interest	(817)		(6,000 – 817)
	16,339		
Add: 2nd installment	6,000		
	22,339	1,063	4,937
Less: Interest	(1,063)		(6,000 – 1,063)
	21,276		
Add: 1st installment	6,000		
	27,276	1,299	4,701
Less: Interest	(1,299)		(6,000 –1,299)
	25,977	4,023	25,977

The cash purchase price of machinery is ₹ 25,977.

Question – 3. (ICAI Module)
On 1st April, 20X1 a manufacturing company buys on Hire-purchase system a machinery for ₹ 90,000, payable by three equal annual installments combining principal and interest, the rate of interest was 5% per annum. Calculate the amount

of cash price and interest. Assume that the present value of an annuity of one rupee for three years at 5% interest is ₹ 2.723.

Solution:

Calculation of Cash Price – The present value of an annuity of Re. 1 paid for 3 year @ 5% = ₹ 2.723. Hence, the present value of ₹ 30,000 for 3 years = 2.723 x 30,000 = ₹ 81,690.

Thus, Cash Price will be computed as ₹ 81,690.

Cash price may also be calculated using the annuity formula discussed above:

Cash price = Annual installment x $(1+r)^n - 1/\ r(1+r)^n$

= 30,000 x $[(1 + 0.05)^3 – 1]/\ 0.05\ (1 +0.05)^3$

= ₹ 81697.

Note- The difference in cash price of ₹ 7 is on account of approximation

Question – 4. (ICAI Module)

Om Ltd. purchased a machine on hire purchase basis from Kumar Machinery Co. Ltd. on the following terms:

(a) Cash price ₹80,000

(b) Downpaymentatthetimeofsigningtheagreementon1.1.20X1₹21,622.

(c) 5 annual installments of ₹ 15,400, the first to commence at the end of twelve months from the date of down payment.

(d) Rate of interest is 10%p.a.

You are required to calculate the total interest & interest included in cash installment.

Solution:

Calculation of interest

	Total (₹)	***Interest in each installment(1)***	***Cash price in each installment(2)***
Cash Price	80,000		
Less: Down Payment	(21,622)	Nil	₹21,622
Balance due after down payment	58,378		
Interest/Cash Price of 1st installment	-	₹ 58,378 x10/100 =₹5,838	₹15,400 – ₹5,838=₹9,562
Less: Cash price of 1st installment	(9,562)		
Balance due after 1st installment	48,816		
Interest/cash price of 2nd installment	-	₹48,816 x 10/100 = ₹4,882	₹15,400 - ₹4,882= ₹10,518
Less: Cash price of 2nd installment	(10,518)		
Balance due after 2nd installment	38,298		
Interest/Cash price of 3rd installment	-	₹38,298 x 10/100 = ₹3,830	₹15,400 - ₹3,830= ₹11,570
Less: Cash price of 3rd installment	(11,570)		

Balance due after 3^{rd} installment	26,728		
Interest/Cash price of 4^{th}	-	₹26,728	₹15,400 -
installment		x10/100 =	₹ 2,672 =
		₹ 2,672	₹ 12,728
Less: Cash price of 4th installment	(12,728)		
Balance due after 4^{th}installment	14,000		
Interest/Cash price of 5th	-	₹14,000	₹ 15400–
installment		x10/100=	₹ 1,400= 14,000
		₹ 1,400	
Less: Cash price of 5th installment	(14,000)		
Total	Nil	₹ 18,622	₹ 80,000

Total interest can also be calculated as follow:
(Down payment + installments) – Cash Price = ₹ [21,622 +(15400 x 5)] – ₹ 80,000 =₹ 18,622

***Question – 5.* (ICAI Module)**
Happy Valley Florists Ltd. acquired a delivery van on hire purchase on 01.04.20X1 from Ganesh Enterprises. The terms were as follows:

Particulars	***Amount (₹)***
Hire Purchase Price	*180,000*
Down Payment	*30,000*
1^{st} installment payable after 1 year	*50,000*
2^{nd} installment after 2 years	*50,000*
3^{rd} installment after 3 years	*30,000*
4^{th} installment after 4 years	*20,000*

Cash price of van ₹ 150,000 You are required to calculate Total Interest and Interest included in each installment.

Solution:

Calculation of total Interest and Interest included in each installment
Hire Purchase Price (HPP) = Down Payment +installments
= 30,000 + 50,000 + 50,000 + 30,000 + 20,000 = 1,80,000
Total Interest = 1,80,000 – 1,50,000 =30,000

Computation of IRR (considering two guessed rates of 6% and 12%)

Year	***Cash Flow***	***DF @6%***	***PV***	***DF @12%***	***PV***
0	30,000	1.00	30,000	1.00	30,000
1	50,000	0.94	47,000	0.89	44,500
2	50,000	0.89	44,500	0.80	40,000
3	30,000	0.84	25,200	0.71	21,300
4	20,000	0.79	15,800	0.64	12,800
		NPV	1,62,500	NPV	1,48,600

Interest rate implicit on lease is computed below by interpolation:

Interest rate implicit on lease = $6\% \frac{1,62,500-1,50,000}{1,62,500-1,48,600} x\ (12\text{-}6) = 11.39\%$

Thus, repayment schedule and interest would be asunder:

Installment no.	***Principal at beginning***	***Interest included in each installment***	***Gross amount***	***Installment***	***Principle at end***
Cash down	1,50,000		1,50,000	30,000	1,20,000
1	1,20,000	13,668	1,33,668	50,000	83,668
2	83,668	9,530	93,198	50,000	43,198
3	43,198	4,920	48,118	30,000	18,118
4	18,118	2,064	20,182	20,000	182*
		30,182*			
* the difference is on account of approximations					

Question – 6. (ICAI Module)

On January 1, 20X1 HP M/s acquired a Pick-up Van on hire purchase from FM M/s. The terms of the contract were as follows:

(a) The cash price of the van was ₹1,00,000.

(b) ₹ 40,000 were to be paid on signing of the contract.

(c) Thebalancewastobepaidinannualinstallmentsof 20,000plusinterest.

(d) Interest chargeable on the outstanding balance was 6%p.a.

(e) Depreciation at 10% p.a. is to be written-off using the straight-line method.

You are required to:

(a) Give Journal Entries and show the relevant accounts in the books of HP M/s from January 1, 20X1 to December 31, 20X3;and

(b) Show the relevant items in the Balance Sheet of the purchaser as on December 31, 20X1 to20X3.

SOLUTION:

In the books of HP M/s Journal Entries

Date	***Particulars***		***Dr.***	***Cr.***
			₹	₹
20X1	Pick-up Van A/c	Dr.	1,00,000	
Jan. 1	To FM M/s A/c			1,00,000
	(Being the purchase of a pick-up van on hire purchase from FM M/s)			
"	FM M/s A/c	Dr.	40,000	
	To Bank A/c			40,000
	(Being the amount paid on signing the H.P. contract)			
Dec. 31	Interest A/c	Dr.	3,600	
	To FM M/s A/c			3,600
	(Being the interest payable @ 6% on₹ 60,000			
"	FM M/s A/c (₹ 20,000+₹ 3,600)	Dr.	23,600	
	To Bank A/c			23,600
	(Being the payment of 1st installment along with interest)			

"	Depreciation A/c	Dr.	10,000	
	To Pick-up Van A/c			10,000
	(Being the depreciation charged @ 10% p.a. on ₹ 1,00,000)			
"	Profit & Loss A/c	Dr.	13,600	
	To Depreciation A/c			10,000
	To Interest A/c			3,600
	(Beingthe depreciation and interest transferred to Profit and Loss Account)			
20X2	Interest A/c	Dr.	2,400	
Dec. 31	To FM M/s A/c			2,400
	(Being the interest payable @ 6% on ₹40,000)			
	FM M/s A/c (₹ 20,000 + ₹ 2,400)	Dr.	22,400	
	To Bank A/c			22,400
	(Being the payment of 2nd installment along with interest)			
	Depreciation A/c	Dr.	10,000	
	To Pick-up Van A/c			10,000
	(Being the depreciation charged @ 10% p.a.)			
	Profit & Loss A/c	Dr.	12,400	
	To Depreciation A/c			10,000
	To Interest A/c			2,400
	(Beingthe depreciation and interest charged to Profit and Loss Account)			
20X3	Interest A/c	Dr.	1,200	
Dec. 31	To FM M/s A/c			1,200
	(Being the interest payable @ 6% on ₹20,000)			
	FM M/s A/c (₹ 20,000 + ₹ 1,200)	Dr.	21,200	
	To Bank A/c			21,200
	(Being the payment of final installment along with interest)			
	Depreciation A/c	Dr.	10,000	
	To Pick-up Van A/c			10,000
	(Being the depreciation charged @ 10% p.a. on ₹ 1,00,000)			
	Profit & Loss A/c	Dr.	11,200	
	To Depreciation A/c			10,000
	To Interest A/c			1,200
	(Beingthe interest and depreciation charged to Profit and Loss Account)			

Ledgers in the books of HP M/s Pick-up Van Account

Date		***Particulars***	₹	***Date***		***Particulars***	₹
1.1.20X1	To	FM M/s A/c	1,00,000	31.12.20X1	By	Depreciation A/c	10,000
				31.12.20X1	By	Balance c/d	90,000
			1,00,000				1,00,000
1.1.20X2	To	Balance b/d	90,000	31.12.20X2	By	Depreciation A/c	10,000
				31.12.20X2	By	Balance c/d	80,000
			90,000				90,000

1.1.20X3	To	Balance b/d	80,000	31.12.20X3	By	Depreciation A/c	10,000
				31.12.20X3	By	Balance c/d	70,000
			80,000				80,000

FM M/s Account

Date	***Particulars***	₹	***Date***	***Particulars***	₹
1.1.20X1	To Bank A/c	40,000	1.1.20X1	By Pick-up Van A/c	1,00,000
31.12.20X1	To Bank A/c	23,600	31.12.20X1	By Interest c/d	3,600
31.12.20X1	To Balance c/d	40,000			
		1,03,600			1,03,600
31.12.20X2	To Bank A/c	22,400	1.1.20X2	By Balance b/d	40,000
31.12.20X2	To Balance c/d	20,000	31.12.20X2	By Interest A/c	2,400
		42,400			42,400
31.12.20X3	To Bank A/c	21,200	1.1.20X3	By Balance b/d	20,000
			31.12.20X3	By Interest A/c	1,200
		21,200			21,200

Depreciation Account

Date		***Particulars***	₹	***Date***	***Particulars***	₹
31.12.20X1	To	Pick-up Van A/c	10,000	31.12.20X1	By Profit & Loss A/c	10,000
31.12.20X2	To	Pick-up Van A/c	10,000	31.12.20X2	By Profit & Loss A/c	10,000
31.12.20X3	To	Pick-up Van A/c	10,000	31.12.20X3	By Profit & Loss A/c	10,000

Interest Account

Date	***Particulars***	₹	***Date***	***Particulars***	₹
31.12.20X1	To FM M/s A/c	3,600	31.12.20X1	By Profit & Loss A/c	3,600
31.12.20X2	To FM M/s A/c	2,400	31.12.20X2	By Profit & Loss A/c	2,400
31.12.20X3	To FM M/s A/c	1,200	31.12.20X3	By Profit & Loss A/c	1,200

Balance Sheet of HPM /s as at31stDecember,20X1

Liabilities	₹	***Assets***	₹
FM M/s	40,000	Pick-up Van	90,000

Balance Sheet of HPM/s as at 31stDecember,20X2

Liabilities	₹	***Assets***	₹
FM M/s	20,000	Pick-up Van	80,000

Balance Sheet of HP M/s as at 31st December, 20X3

Liabilities	₹	***Assets***	₹
		Pick-up Van	70,000

Question – 7.

In illustration 6 assume that the hire purchaser adopted the interest suspense method for recording his hire purchase transactions. On this basis, prepare H.P. Interest Suspense Account, Interest Account and FM M/s Accounts and Balance Sheets in the books of hire purchaser.

Solution:

H.P. Interest Suspense Account

Date	***Particulars***	₹	***Date***	***Particulars***	₹
1.1.20X1	To FM M/s A/c (W.N.)	7,200	31.12.20X1	By Interest A/c	3,600
			31.12.20X1	By Balance c/d	3,600
		7,200			7,200
1.1.20X2	To Balance b/d	3,600	31.12.20X2	By Interest A/c	2,400
			31.12.20X2	By Balance c/d	1,200
		3,600			3,600
1.1.20X3	To Balance b/d	1,200	31.12.20X3	By Interest A/c	1,200

Interest Account

Date	Particulars		Date	Particulars	
31.1.20X1	To H.P. Interest Suspense A/c	3,600	31.12.20X1	By Profit & Loss A/c	3,600
31.1.20X2	To H.P. Interest Suspense A/c	2,400	31.1.20X2	By Profit & Loss A/c	2,400
31.1.20X3	To H.P. Interest Suspense A/c	1,200	31.1.20X3	By Profit & Loss A/c	1,200

FM M/s Account

Date	***Particulars***	₹	***Date***	***Particulars***	₹
1.1.20X1	To Bank A/c	40,000	1.1.20X1	By Pick-up Van A/c	1,00,000
31.12.20X1	To Bank A/c	23,600	1.1.20X1	By H.P. Interest Suspense A/c	7,200
31.12.20X1	To Balance c/d	43,600			
		1,07,200			1,07,200
31.12.20X2	To Bank A/c	22,400	1.1.20X2		43,600
31.12.20X2	To Balance c/d	21,200			
		43,600			43,600
31.12.20X3	To Bank A/c	21,200	1.1.20X3		21,200

Balance Sheet of HPM/sasat31stDecember,20X1

Liabilities		₹	***Assets***		₹
FM M/s	43,600	40,000	Pick-up Van	1,00,000	90,000
Less: H.P. Interest Suspense	(3,600)		*Less*: Depreciation	(10,000)	

Balance Sheet of HPM/sasat31stDecember,20X2

Liabilities		₹	***Assets***	₹	
FM M/s	21,200		Pick-up Van	90,000	80,000
Less: H.P. Interest Suspense	(1,200)	20,000	Less: Depreciation	(10,000)	

Balance Sheet of HPM/sasat31stDecember,20X3

Liabilities	₹		***Assets***		₹
			Pick-up Van	80,000	
			Less: Depreciation	(10,000)	70,000

Working Note:

Total Interest = ₹ 3,600 + ₹ 2,400 + ₹ 1,200 = ₹ 7,200.

Question – 8.
X Ltd. purchased 3 milk vans from Super Motors costing ₹ 75,000 each on hire purchase system. Payment was to be made: ₹ 45,000 down and the remainder in 3 equal installments together with interest @ 9%. X Ltd. writes off depreciation @ 20% on the diminishing balance. It paid the installment at the end of the 1st year but could not pay the next. Super Motor agreed to leave one milk van with the purchaser, adjusting the value of the other two milk vans against the amount due. The milk vans were valued on the basis of 30% depreciation annually on written down value basis. X Ltd. settled the seller's dues after three months.
You are required to give necessary journal entries and the relevant accounts in the books of X Ltd.

Solution

In the Books of X Ltd.
Journal Entries

		Dr. (₹)	Cr. (₹)
I Year			
Milk Vans purchased:			
Milk Vans A/c	Dr.	2,25,000	2,25,000
To Vendor A/c			
On down payment:			
Vendor A/c	Dr.	45,000	
To Bank			45,000
I Year end			
Interest A/c (₹ 1,80,000 @ 9%)	Dr.	16,200	
To Vendor A/c			16,200
Vendor A/c	Dr.	76,200	
To Bank A/c (60,000 + 16,200)			76,200
Depreciation @ 20%			
Depreciation A/c	Dr.	45,000	
To Milk Vans A/c			45,000
Profit & Loss A/c	Dr.	61,200	
To Depreciation			45,000
To interest A/c			16,200
II Year end			
Depreciation @ 20%			
Depreciation A/c	Dr.	36,000	
To Milk Vans A/c			36,000
Interest A/c	Dr.	10,800	
(1,20,000 @ 9%)			
To Vendor A/c			10,800
For Loss in Repossession:			
Super Motors A/c (1,50,000 – 45,000 –	Dr.	73,500	
31,500)	Dr.	22,500	
Profit/Loss A/c (b.f.)			
To Milk Vans A/c [(2,25,000 – 45,000 – 36,000) x 2/3]			96,000
IIIrd Year Depreciation			
Depreciation A/c (48,000 x 20%)	Dr.	9,600	

To Milk Vans A/c			9,600
Settlement of A/cs Vendor A/c	Dr.	57,300	
To Bank			57,300

Milk Vans Account

Year		₹	Year		₹
1	To Super Motors A/c	2,25,000	1 end	By Depreciation A/c	45,000
			"	By Balance c/d	1,80,000
		2,25,000			2,25,000
2	To Balance b/d	1,80,000	2 end	By Depreciation	36,000
				By SuperMotors (value of 2 vans after depreciation for 2 years @ 30%)	73,500
				By P & L A/c (balancing figure)	22,500
				By Balance c/d (one van less depreciation for 2 years) @ 20%	48,000
		1,80,000			1,80,000

Super Motors Account

Year		₹	Year		₹
1	To Bank A/c	45,000	1	By Milk Vans A/c	2,25,000
	To Bank A/c	76,200		By Interest @ 9% on ₹ 1,80,000	16,200
	To Balance c/d	1,20,000			
		2,41,200			2,41,200
2	To Milk Van A/c	73,500	2	By Balance b/d	1,20,000
	To Balance c/d	57,300		By Interest A/c	10,800
		1,30,800			1,30,800
3	To Bank A/c	57,300	3	By Balance b/d	57,300

Question – 9.

A firm acquired two tractors under hire purchase agreements, details of which were as follows:

Date of Purchase	*Tractor A 1st April, 20X1(₹)*	*Tractor B 1st Oct., 20X1(₹)*
Cash price	*14,000*	*19,000*

Both agreements provided for payment to be made in twenty-four monthly installments (of ₹ 600 each for Tractor A and ₹ 800 each for Tractor B), commencing on the last day of the month following purchase, all installments being paid on due dates.

On 30th June, 20X2, Tractor B was completely destroyed by fire. In full settlement, on 10th July, 20X2 an insurance company paid ₹ 15,000 under a comprehensive policy. Any balance on the hire purchase company's account in respect of these transactions was to be written off.

The firm prepared accounts annually to 31st December and provided depreciation on tractors on a straight-line basis at a rate of 20 per cent per annum rounded off to nearest ten rupees, apportioned as from the date of purchase and up to the date of disposal.

You are required to record these transactions in the following accounts, carrying down the balances on 31st December, 20X1 and 31stDecember, 20X2:

(a) Tractors on hire purchase.

(b) Provision for depreciation of tractors.

(c) Disposal of tractors.

Solution:

Hire Purchase accounts in the buyer's books

(a) Tractors on Hire Purchase Account

20X1			₹	***20X1***				₹
April 1	To HP Co. - Cash price Tractor A		14,000	Dec. 31	By	Balance c/d Tractor A	14,000	
Oct. 1	" HP Co. - Cash price Tractor B		19,000			Tractor B	19,000	33,000
			33,000					33,000
20X2			₹					₹
Jan. 1	To Balance b/d					Disposal of Tractor A/c - Transfer		19,000
	Tractor A					Balance c/d		14,000
	Tractor B		33,000					33,000
			33,000					
20X3			14,000					
Jan. 1	To Balance b/d							

(b) Provision for Depreciation of Tractors Account

20X1		₹	***20X1***			₹
Dec. 31	To Balance c/d	3,050	Dec.31	By P & L A/c:		
				Tractor A	2,100*	
				Tractor B	950**	3,050
		3,050				3,050

* 14,000 x 20% x 9/12 = 2,100

** 19,000 x 20% x 3/12 = 950

20X2			**20X2**		
June 30	To Disposal of Tractor account Transfer (950 + 1,900)	2,850	Jan. 1	By Balance b/d	3,050
Dec. 31	To Balance C/D	4,900	Jun. 30	P&L A/c (Depn. For Tractor B)	1,900

				(19,000,X 20% X 6/12)	
			Dec. 31	By P&L A/C (Depn. For Tractor A) (14,000 x 20%)	2,800
		7,750			7,750
			20X3 Jan.	1 By Balance b/d	4,900

(c) **Disposal of Tractor Account**

20X2		`	20X2		`
June30	To Tractors on hire purchase — Tractor B	19,000	June 30	By Provision for Depn. Of Tractors A/c	2,850
			July 10	By Cash : Insurance	15,000
			Dec. 31	By P & L A/c : Loss (b.f.)	1,150
		19,000			19,000

Question – 10.

A machinery is sold on hire purchase. The terms of payment is four annual installments of ₹ 6,000 at the end of each year commencing from the date of agreement. Interest is charged @ 20% and is included in the annual payment of 6,000. Show Machinery Account and Hire Vendor Account in the books of the purchaser who defaulted in the payment of the third yearly payment whereupon the vendor re-possessed the machinery. The purchaser provides depreciation on the machinery @10%perannumonWVVbasis.Allworkingsshouldformpartofyouranswers.

Solution:

Machinery Account

		₹			₹
I Yr.	To Hire Vendor A/c (W.N.)	15,533	I Yr.	By Depreciation A/c	1,553
				By Balance c/d	13,980
		15,533			15,533
II Yr.	To Balance b/d	13,980	II Yr.	By Depreciation A/c*	1,398
				By Balance c/d	12,582
		13,980			13,980
III Yr.	To Balance b/d	12,582	III Yr.	By Depreciation A/c*	1,258
				By Hire Vendor	11,000
				By Profit & Loss A/c	324
				(Loss on Surrender) (bal.fig.)	
		12,582			12,582

*Depreciation has been directly credited to the Machinery Account; it could have been accumulated in provision for depreciation account.

Hire Vendor Account

		`			`

I Yr.	To Bank A/c	6,000	I Yr.	By Machinery A/c	15,533
	To Balance c/d	12,639		By Interest A/c	3,106
		18,639			18,639
II Yr.	To Bank A/c	6,000	II Yr.	By Balance b/d	12,639
	To Balance c/d	9,167		By Interest A/c	2,528
		15,167			15,167
III Yr.	To Machinery A/c (transfer)	11,000	III Yr.	By Balance b/d	9,167
				By Interest A/c	1,833
		11,000			11,000

***Note*:** Alternatively, total interest could have been debited to Interest Suspense A/c and credited to Hire Vendor A/c with consequential changes.

Working Notes:

		Installment Amount	***Interest***	***Principal***
4th Installment		6,000	₹	₹
Interest	$6,000 \times \frac{20}{120}$	1,000	1,000	5,000
		5,000		
Add : 3rd Installment		6,000		
		11,000		
Interest	$11,000 \times \frac{20}{120}$	1,833	1,833	4,167
		9,167		
Add : 2nd Installment		6,000		
		15,167		
Interest	$15,167 \times \frac{20}{120}$	2,528	2,528	3,472
		12,639		
Add : Ist Installment		6,000		
		18,639		
Interest	$18,639 \times \frac{20}{120}$	3,106	3,106	2,894
		15,533	8,467	15,533

$= 30,000 \times [(1 + 0.05)^3 - 1]/\ 0.05\ (1 + 0.05)^3$

= ₹ 81697.

Note- The difference in cash price of ₹ 7 is on account of approximation

Student Notes:-