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Accounting Equation and Business Transactions

1. Introduction

The significant objective of financial accounting is to prepare financial accounts. In accounts, trading account, profit and loss account and balance sheet are included. In the company form instead of trading account and profit and loss account, income statement is prepared. At the end of the year profit and loss will be closed and will be transfered to balance sheet. (A detailed explanation in this regard is undertaken in subsequent chapter.) Generally at the end of year balance sheet is prepared.

There are two important components of balance sheet : (1) Capital and Liability (2) Asset

The final effect of every business transaction goes to above mentioned two components of balance sheet. i.e. capital and liability, and assets. As per the norms of double entry system, the total of above mentioned two components remains identical. According to the terminology of accounting these two components are known as Capital and Liability side and Assets side. This can be represented in the equaiton form as follows :

Assets = Capital + Liabilities

In brief, $A = C + L$

This is an American method for presentation of accounting transactions. This is a modern approch.

Under traditional approach, rules of presonal account, real account and nominal account are used. Under this traditional approach, on the basis of these rules, initially, journal is prepared and finally, final accounts are prepared. And at last, balance sheet is prepared. In accounting equation, effect of transaction is directly given in the balance sheet.

2. Accounting Equation and Transactions

In equation approach, effect of transaction is directly given to the assets and capital liability side. Prior to this we have undertaken study of types of accounts and their rules. We have accquired acquitance about how to write journal entry. Keeping these rules in mind, let us understand the equation method.

At the time of execution of equation method. Equation method can be understood easily, if business transactions are classified as under :

(1) **Transactions related to goods :** Purchase, sales, purchase return, sales return and goods goes out in any other form.

(2) **Revenue-expense related transactions :** Rent received, commission received, dividend etc are included in revenue. Salary, wages, advertisement expense, administrative expense etc are included in expenses.

(3) Assets purchase-sales transactions.

(4) Transactions related to borrowing of funds and lending of funds.

There can be following effect on $A = C + L$ of above mentioned transactions :

(1) Increase and decrease in A only. (Increase in one asset and decrease in another asset.)

(2) Increase / Decrease in A and C.

(3) Increase / Decrease in A and L.

(4) Increase – Decrease in C and L.

Let us understand this matter with illustrations, which are given hereafter.

Illustration 1 : Journal entries are written as follows and effect of transaction is explained in equation form.

Sr.No.	Transaction and Journal Entry	Debit (₹)	Credit (₹)	Effect
1.	Brought ₹ 50,000 and commenced business. Cash A/c Dr To capital A/c	 50,000	 50,000	 Cash increased. Capital increased.
2.	Furniture purchased for ₹ 10,000. Furniture A/c Dr To cash A/c	 10,000	 10,000	 Furniture increased. Cash decreased.
3.	Goods for ₹ 12,000 purchased in cash. Purchase A/c Dr To cash A/c	 12,000	 12,000	 Goods increased. Cash decreased.
4.	Goods for ₹ 8000 is purchased from B. Purchase A/c Dr To B's A/c	 8000	 8000	 Goods increased. Liability increased.
5.	Goods of ₹ 7000 is sold for ₹ 10,000 in cash. Cash A/c Dr To sales A/c	 10,000	 10,000	 Cash increased. Goods decreased.
6.	₹ 6000 paid for wages. Wages A/c Dr To cash A/c	 6000	 6000	Due to wages paid. Capital decreased. Cash decreased.
7.	Wages outstanding ₹ 1000. Wages A/c Dr To ourstanding wages A/c	 1000	 1000	Due to wages paid. Capital decreased. Liability increased.

A (Assects) =			C (Capital)		+ L (Liability)	
Cash		50,000	= Capital	50,000	+	0
		50,000		50,000		0
Cash	50,000		Capital	50,000		0
Furni. purchase	10,000 →	40,000				
Furniture		10,000			+	
		50,000	=	50,000	+	0
Cash	40,000		Capital	50,000		0
− Purchase	12,000 →	28,000				
Furniture		10,000				
Stock		12,000				
		50,000	=	50,000	+	0
Cash		28,000	Capital	50,000	Liability (B)	8000
Stock	12,000					
+ Purchase	8000 →	20,000				
Furniture		10,000				
		58,000	=	50,000	+	8000
Cash	28,000		Capital	50,000	Liability (B)	8000
+ Sales (S.P.)	10,000 →	38,000	+ Profit on sales	3000		
Stock	20,000		(10,000 − 7000)			
− Sales (C.P.)	7000 →	13,000				
Furniture		10,000				
		61,000	=	53,000	+	8000
Cash	38,000		Capital	53,000	Liability (B)	8000
− Wages	6000 →	32,000	− Wages	6000		
Stock		13,000				
Furniture		10,000				
		55,000	=	47,000	+	8000
Cash		32,000	Capital	47,000	Liability (B)	8000
Stock		13,000	− Wages	1000	+ Wages (O/s)	1000
Furniture		10,000				
		55,000	=	46,000	+	9000

Sr.No.	Transaction and Journal Entry	Debit (₹)	Credit (₹)	Effect
8.	Commission received ₹ 4000. Cash A/c Dr To commission A/c	 4000	 4000	 Cash increased. Capital would increase due to commission income.
9.	Divident receivable ₹ 9000. Receivable dividend A/c Dr To dividend A/c	 9000	 9000	 Asset increased. Capital increased.
10.	Machine purchased ₹ 8000. Machine A/c Dr To cash A/c	 8000	 8000	 Asset increased. Cash decreased.
11.	Land purchased from Radha of ₹ 25,000. Land A/c Dr To Radha A/c	 25,000	 25,000	 Asset increased. Liability increased.
12.	Borrowed bank loan of ₹ 20,000 and cash withdrawn. Cash A/c Dr To bank loan A/c	 20,000	 20,000	 Cash increased. Liability increased.

A (Assects) =			C (Capital)		+ L (Liability)	
Cash	32,000		Capital	46,000	Liability (B)	8000
+ Commission	4000	36,000	Commission	4000	Liability (O/s)	1000
Stock		13,000				
Furniture		10,000				
		59,000	=	50,000	+	9000
Cash		36,000	Capital	46,000	Liability (B)	8000
Stock		13,000	Commission	4000	Liability (O/s)	1000
Furniture		10,000	Dividend	9000		
Dividend receivable		9000				
		68,000	=	59,000	+	9000
Cash	36,000		Capital	46,000	Liability (B)	8000
– Machine	8000	28,000	Commission	4000	Liability (O/s)	1000
Stock		13,000	Dividend	9000		
Furniture		10,000				
Dividend receivable		9000				
Machine		8000				
		68,000	=	59,000	+	9000
Cash		28,000	Capital	46,000	Liability (B)	8000
Stock		13,000	Commission	4000	Liability (O/s)	1000
Furniture		10,000	Dividend	9000	Liability (Radha)	25,000
Dividend receivable		9000				
Machine		8000				
Land		25,000				
		93,000	=	59,000	+	34,000
Cash	28,000		Capital	46,000	Liability (B)	8000
+ Loan	20,000	48,000	Commission	4000	Liability (O/s)	1000
Stock		13,000	Dividend	9000	Liability (Radha)	25,000
Furniture		10,000			Bank loan	20,000
Dividend receivable		9000				
Machine		8000				
Land		25,000				
		1,13,000	=	59,000	+	54,000

Note : After having treatment of above mentioned transactions, total of asset side (of A side) and total of Capital-Liability side (C + L side) is always equal. Here A = 1,13,000 and C = 59,000 + L = 54,000 = 1,13,000.

The following observations can be obtained due to use of equation method :

Sr. No.	Transaction	Assets = (A) =	Capital + (C) +	Liability (L)
1(A)	When capital introduced by owner in business.	Increase	Increase	–
1(B)	When withdrawn made by owner from business.	Decrease	Decrease	–
2.	Purchase of goods in cash.	One would increase. Another would decrease.	–	–
3.	Purchase of goods on credit.	Increase	–	Increase
4.	Sale of goods in cash.	One would increase. Another would decrease.	Would increase. (in profit)	–
5.	Sale of goods on credit.	One would increase. Another would decrease.	Would increase. (in profit)	–
6.	Payment of revenue expense in cash.	Decrease	Decrease	–
7.	Revenue expenditure outstanding.	–	Decrease	Increase
8.	Receipt of revenue income in cash.	Increase	Increase	–
9.	Revenue income outstanding.	Increase	Increase	–
10.	Purchase of asset in cash.	One would increase. Another would decrease.	–	–
11.	Purchase of asset on credit.	Increase	–	Increase
12.	Sale of asset in cash.	One would increase. Another would decrease.	–	–
13.	Sale of asset on credit.	One would increase. Another would decrease.	–	–
14.	When funds borrowed.	Increase	–	Increase
15.	Out going material. e.g. goods destroyed by fire.	Decrease	Decrease	–

Note : In above mentioned transaction No. 4 and 5, when sales is made with profit, capital would increase and sales is made with loss capital would reduce.

Illustration 2 : Write journal entries for the following transactions and explain accounting treatments based on equation.

(1) Ramesh has brought cash of ₹ 20,000 and furniture of ₹ 10,000 to commence business.

(2) ₹ 5000 deposited in bank and opened account.

(3) Goods of ₹ 8000 purchased from Rajesh.

(4) Goods of ₹ 6000 purchased for cash.

(5) Goods of ₹ 5000 sold for ₹ 9000 to Raman on credit.

(6) Goods of ₹ 3000 sold for ₹ 6000 in cash.

(7) Goods of ₹ 1000 returned to Rajesh. (Purchase return)

(8) Goods of ₹ 2000 returned by Raman. (Sales return)

(9) Goods of ₹ 1000 destroyed by fire.

(10) Salary paid ₹ 2000.

(11) Salary outstanding is ₹ 1000.

(12) Commission received ₹ 4000.

(13) Receivable dividend ₹ 2000.

(14) Insurance premium of shop paid ₹ 500.

(15) A computer of ₹ 8000 is purchased from Shree Krishna Computer Co.

(16) Owner withdraw ₹ 1000 from business.

(17) Account settled of Rajesh.

(18) Account settled by Raman.

Ans. : Back page.

Sr.No.	Journal Entry		Debit (₹)	Credit (₹)	Effect
1.	Cash A/c	Dr	20,000		Cash increased.
	Furniture A/c	Dr	10,000		Furniture increased.
	To capital A/c			30,000	Capital increased.
2.	Bank A/c	Dr	5000		Bank balance increased.
	To cash A/c			5000	Cash decreased.
3.	Purchase A/c	Dr	8000		Stock increased.
	To Rajesh A/c			8000	Liability increased.
4.	Purchase A/c	Dr	6000		Stock increased.
	To cash A/c			6000	Cash decreased.
5.	Raman A/c	Dr	9000		Receivable increase
	To sales A/c			9000	Good decreased.
6.	Cash A/c	Dr	6000		Cash increased.
	To sales A/c			6000	Stock decreased.

A (Assects) =			C (Capital)		+ L (Liability)	
Cash		20,000	Capital	30,000	+	0
Furniture		10,000				
		30,000	=	30,000		0
Cash	20,000		Capital	30,000		0
− Deposited in Bank	5000	15,000				
Bank balance		5000				
Furniture		10,000				
		30,000	=	30,000		0
Cash		15,000	Capital	30,000	Liability (Rajesh)	8000
Bank balance		5000				
Furniture		10,000				
Stock (Purchase)		8000				
		38,000	=	30,000	+	8000
Cash	15,000		Capital	30,000	Liability (Rajesh)	8000
− Purchase	6000	9000				
Stock	8000					
+ Purchase	6000	14,000				
Bank balance		5000				
Furniture		10,000				
		38,000	=	30,000	+	8000
Cash		9000	Capital	30,000	Liability (Rajesh)	8000
Stock	14,000		+ Sales profit	4000		
− Sales (Cost)	5000	9000	(9000 − 5000)			
Receivable (debtors)(SP)		9000				
Bank balance		5000				
Furniture		10,000				
		42,000	=	34,000	+	8000
Cash	9000		Capital	34,000	Liability (Rajesh)	8000
+ Sales	6000	15,000	+ Sales profit	3000		
Stock	9000		(6000 − 3000)			
− Sales (Cost)	3000	6000				
Receivable (debtors)		9000				
Bank balance		5000				
Furniture		10,000				
		45,000	=	37,000	+	8000

Sr.No.	Journal Entry		Debit (₹)	Credit (₹)	Effect
7.	Rajesh A/c To purchase return A/c	Dr	1000	 1000	Liability decreased. Stock decreased.
8.	Sales return A/c To Raman A/c	Dr	2000	 2000	Stock increased. Receviable decreased.
9.	Loss due to fire A/c To purchase A/c (Goods destroyed by fire.)	Dr	1000	 1000	Loss (Capital decreased). Goods decreased
10.	Salary A/c To cash A/c	Dr	2000	 2000	Expense (Capital decreased) Cash decreased

A (Assects) =			C (Capital)		+ L (Liability)	
Cash		15,000				
Stock	6000		Capital	37,000	Liability (Rajesh)	8000
− Purchase return	1000	5000			− Purchase return	1000
Receivable (debtors)		9000				7000
Bank balance		5000				
Furniture		10,000				
		44,000	=	37,000	+	7000
Cash		15,000	Capital	37,000	Liability (Rajesh)	7000
Stock	5000					
+ Sales return	2000	7000				
Receivable (debtors)	9000					
− Sales return	2000	7000				
Bank balance		5000				
Furniture		10,000				
		44,000	=	37,000	+	7000
Cash		15,000	Capital	37,000	Liability (Rajesh)	7000
Stock	7000		− Loss	1000		
− Loss	1000	6000		36,000		
Receivable (debtors)		7000				
Bank balance		5000				
Furniture		10,000				
		43,000	=	36,000	+	7000
Cash	15,000		Capital	36,000	Liability (Rajesh)	7000
− Salary	2000	13,000	− Expense (Salary)	2000		
Stock		6000		34,000		
Receivable (debtors)		7000				
Bank balance		5000				
Furniture		10,000				
		41,000	=	34,000	+	7000

Sr.No.	Journal Entry		Debit (₹)	Credit (₹)	Effect
11.	Salary A/c	Dr	1000		Expense (Capital decreased)
	To outstanding salary A/c			1000	Liability increased.
12.	Cash A/c	Dr	4000		Cash increased.
	To commission A/c			4000	Capital increased.
13.	Receivable dividend A/c	Dr	2000		Receivable increased.
	To dividend A/c			2000	Capital increased.
14.	Insurance Premium A/c	Dr	500		Expense (Capital decreased)
	To cash A/c			500	Cash decreased.

A (Assects) =		C (Capital)		+ L (Liability)	
Cash	13,000	Capital	34,000	Liability (Rajesh)	7000
Stock	6000	− Expense (Salary)	1000	Liability	1000
Receivable (debtors)	7000			(O/s salary)	
Bank balance	5000				
Furniture	10,000				
	41,000	=	33,000	+	8000
Cash 13,000		Capital	33,000	Liability (Rajesh)	7000
+ Commission 4000 →	17,000	+ Income (Commission)	4000	Liability	1000
Stock	6000			(O/s salary)	
Receivable (debtors)	7000				
Bank balance	5000				
Furniture	10,000				
	45,000	=	37,000	+	8000
Cash	17,000	Capital	37,000	Liability (Rajesh)	7000
Stock	6000	+ Income (Dividend)	2000	Liability	1000
Receivable (O/s dividend)	2000			(O/s salary)	
Receivable (debtors)	7000				
Bank balance	5000				
Furniture	10,000				
	47,000	=	39,000	+	8000
Cash 17,000		Capital	39,000	Liability (Rajesh)	7000
− Insu. Premium 500 →	16,500	− Expense (Insurance	500	Liability	1000
Stock	6000	premium)	38,500	(O/s salary)	
Receivable (O/s dividend)	2000				
Receivable (debtors)	7000				
Bank balance	5000				
Furniture	10,000				
	46,500	=	38,500	+	8000

Sr.No.	Journal Entry	Debit (₹)	Credit (₹)	Effect
15.	Computer A/c Dr	8000		Asset increased.
	To Shree Krishna Computer A/c		8000	Liability increased.
16.	Drawings A/c Dr	1000		Capital decreased.
	To cash A/c		1000	Cash decreased.
17.	Rajesh A/c (8000 – 1000) Dr	7000		Liability decreased.
	To cash A/c		7000	Cash decreased.
18.	Cash A/c (9000 – 2000) Dr	7000		Cash increased.
	To Raman A/c		7000	Receivable decreased.

A (Assects) =	C (Capital)	+ L (Liability)
Cash 16,500 Stock 6000 Receivable (O/s dividend) 2000 Receivable (debtors) 7000 Bank balance 5000 Furniture 10,000 Computer 8000 54,500	Capital 38,500 = 38,500	Liability (Rajesh) 7000 Liability(O/s salary) 1000 Liability (Shree Krishna computer) 8000 + 16,000
Cash 16,500 − Drawings 1000 → 15,500 Stock 6000 Receivable (O/s dividend) 2000 Receivable (debtors) 7000 Bank balance 5000 Furniture 10,000 Computer 8000 53,500	Capital 38,500 − Drawings 1000 37,500 = 37,500	Liability (Rajesh) 7000 + Liability(O/s salary) 1000 + Liability (Shree Krishna computer) 8000 + 16,000
Cash 15,500 − Rajesh 7000 → 8500 Stock 6000 Receivable (O/s dividend) 2000 Receivable (debtors) 7000 Bank balance 5000 Furniture 10,000 Computer 8000 46,500	Capital 37,500 = 37,500	Liability (Rajesh) 7000 − Paid 7000 − Liability(O/s salary) 1000 Liability (Shree Krishna computer) 8000 + 9000
Cash 8500 + Raman 7000 → 15,500 Stock 6000 Receivable (O/s dividend) 2000 Receivable 7000 − Received 7000 → − Bank balance 5000 Furniture 10,000 Computer 8000 46,500	Capital 37,500 = 37,500	Liability(O/s salary) 1000 Liability (Shree Krishna computer) 8000 + 9000

To prepare final (annual) accounts the accountant has to pass through different stage under financial accounting. Annual accounts are prepared on the basis of Journal – Subsidiary books – Posting - Trail Balance and Adjustments. There are three components of annual accounts :

(1) Trading Account

(2) Profit-Loss Account

(3) Balance Sheet

Under double entry system, balance of Trading Account is transfered to Profit and Loss Account. The balance of Profit and Loss Account is transfered to capital account in Balance sheet. And finally, Balance sheet disclosed financial states of business.

Under equation all rules of accounting are followed. But, how Balance sheet can be prepared directly from transaction is explained.

The explanation in this regard is given in the chapter Financial (accounting) Statements of business enterprises. Thus the process of equation method can be understood in better manner.

Exercise

1. Select correct option for each equation :

(1) When an owner introduces capital in business,

(a) increase in capital - increase in liability

(b) increase in capital - increase in asset

(c) increase in one liability - decrease in another liability

(d) increase in one assets - decrease in another assets

(2) When goods purchased on credit,

(a) increase in assets - increase in liability

(b) decrease in assets - decrease in liability

(c) increase in assets - decrease in liability

(d) decrease in assets - increase in liability

(3) When revenue expenses are paid in cash,

(a) increase in assets - increase in liability

(b) decrease in assets - decrease in capital

(c) increase in assets - increase in capital

(d) decrease in assets - decrease in liability

(4) When revenue income received in cash,

(a) increase in assets - increase in liability

(b) increase in assets - decrease in liability

(c) increase in assets - increase in capital

(d) increase in capital - decrease in liability

(5) When goods distributed as sample,

(a) decrease in assets - decrease in liability

(b) increase in assets - increase in liability

(c) increase in assets - increase in capital

(d) decrease in assets - decrease in capital

2. Write journal entries for the following transactions and explain accounting treatments based on equation :

(1) Commenced business with capital of ₹ 80,000.

(2) ₹ 20,000 deposited with bank and opened account.

(3) Goods of ₹ 40,000 purchased from Himani on credit.

(4) Goods of ₹ 30,000 purchased for cash.

(5) Goods of ₹ 35,000 sold for ₹ 55,000 to Jaslin on credit.

(6) Goods of ₹ 10,000 sold for ₹ 18,000 in cash.

(7) Goods of ₹ 2000 returned to Himani.

(8) Goods of ₹ 4000 returned by Jaslin.

(9) Accounts are settled with Himani and Jaslin.

(10) Withdrew ₹ 5000 from bank.

(11) Salary of ₹ 4000 paid by cheque.

(12) Commission received in cash ₹ 3000 and ₹ 2500 are outstanding.

(13) Rent paid in cash ₹ 4000 and ₹ 1500 are outstanding.

(14) Goods donated ₹ 2000.

(15) Furniture of ₹ 15,000 purchased from Prexa Furniture Mart.

(16) College fees of daughter paid ₹ 6000.

(17) ₹ 500 bank has credited for interest and debited ₹ 200 for bank charges.

(18) ₹ 2500 received in advance for interest.

(19) Advertisement expense paid in advance ₹ 2000.

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