Semester III

16BAU302	CORE – MANAGEMENT ACCOUNTING	L	T	P	C
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COURSE OBJECTIVE

- To make the students understand the concepts of cost and management accounting
- To Impart knowledge in financial statement analysis and budget preparations

COURSE OUTCOME

Management Accounting represents the nature and scope of management accounting, difference between cost and management accounting. The course will provide a brief overview in marginal costing, budgetary control, cash flow and fund flow analysis.

UNIT I

Management Accounting - Meaning - Definition - Nature - Scope of Management Accounting - Comparison of Management Accounting with Cost Accounting and Financial Accounting. Cost concepts - Meaning - Scope - Objectives - Importance of Cost Accounting - Cost - Costing - Cost Control, and Cost Reduction - Elements of Cost - Components of total Cost - Classification of Costs - Fixed Variable - Semi Variable - Step Costs - Product - Period Costs - Direct - Indirect Costs - Preparation of Cost Sheet in Lieu with Cost Accounting Standard.

UNIT II

Cost Volume Profit Analysis - Contribution - Profit Volume Ratio - Margin of safety - Cost Break-even Point - Composite Break-even Point - Cash Break-even Point - Key Factor - Break-even Analysis - Relevant Costs - Decision Making - Pricing - Product Profitability - Make or Buy - Exploring new markets - Export Order - Sell or Process Further - Shut down Vs. Continue.

UNIT III

Budgets and Budgetary Control - Meaning - Types of Budgets - Steps in Budgetary Control - Fixed and Flexible Budgeting - Cash Budget - Responsibility Accounting - Concept - Significance - Different responsibility centers - Divisional performance - Financial measures - Transfer pricing.

UNIT IV

Standard Costing and Variance Analysis - Meaning of Standard Cost - Standard Costing, Advantages - Limitations and Applications - Material - Labour - Overhead and Sales variances. Introduction to Target Costing - Life Cycle Costing - Quality Costing - Activity Based Costing.

UNIT V

Funds Flow Statement - Schedule of Changes in Working Capital - Calculation of Funds from Operation - Sources and Applications of Funds. Cash Flow Statement - Cash from Operation - Inflow and Outflow of Funds.

Note: Distribution of marks between problems and theory shall be 80% and 20%.

SUGGESTED READING:

TEXT BOOKS

1. S.N. Maheswari, (2011), Management Accounting, Sultan Chand & Sons, New Delhi.

REFERENCES

1. C.T. Horngren, Gary L. Sundem, Jeff O. Schatzberg, and Dave Burgstahler, (2012), Introduction to Management Accounting, Fourteenth Illustrated Edition, Pearson Prentice Hall, New Delhi.
2. M.N. Arora, (2010), A Textbook of Cost and Management Accounting, Eighth Edition, Vikas Publishing House Pvt Ltd., New Delhi.
3. M.Y. Khan, and P.K. Jain, (2013), Management Accounting: Text Problems and Cases, Sixth Edition, Tata McGraw-Hill Education, Mumbai.
4. S.N. Maheshwari, S.K. Maheshwari, (2010), A Textbook of Accounting for Management, First Edition, Vikas Publishing House Pvt. Limited, New Delhi.

KARPAGAM ACADEMY OF HIGHER EDUCATION

COIMBATORE 641 021

DEPARTMENT OF MANAGEMENT

II BBA

SUBJECT CODE: 16BAU302

MANAGEMENT ACCOUNTING

LECTURE PLAN

UNIT I

SL. No.	Lecture Duration (Hr)	Topics to be covered	Support Materials
1	1	Management Accounting – Meaning, Definition, Nature	R1 : Page No : I.3– I.6
2	1	Scope of Management Accounting	R1 :Page No : I.7 – I.12, W1
3	1	Management Accounting Vs Financial Accounting	R1 : Page No : I.13 – I.17
4	1	Management Accounting Vs Cost Accounting	R1 : Page No : 1.20 – 1.23
5	1	Cost Accounting – Meaning, Definition, Scope - Tutorial	R1 : Page No : 1.31 – 1.33
6	1	Objectives of Cost Accounting	T : D.9 – D.11
7	1	Importance of Cost Accounting	T : D.12 – D.13
8	1	Cost Control and Cost Reduction	T : D.14 – D.16
9	1	Elements of Cost – Material, Labour	T : D.21 – D.24
10	1	Elements of Cost – Overheads - Tutorial	T : D.24 – D.26
11	1	Computation of Total Cost - Fixed cost, Variable cost	T : D.26 – D.27
12	1	Computation of Total Cost - Semi Variable cost	T : D.27 – D.28
13	1	Computation of Total Cost - Step cost	T : D.28 – D.29
14	1	Computation of Total Cost –Product cost	T : D.29 – D.30
15	1	Computation of Total Cost – Direct cost, Indirect cost - Tutorial	T : D.30 – D.32
16	1	Preparation of Statement of Cost	T : D.33 – D.34, W1
17	1	Preparation of Statement of Cost	T : D.35 – D.36
18	1	Preparation of Statement of Cost	T : D.37 – D.40
19	1	Recapitulation and discussion of important questions	
Total no. of hours planned for Unit - I			**19**

TEXT BOOKS

T - Maheswari, S.N., Management Accounting, Sultan Chand & Sons., New Delhi, 2011.

REFERENCES

R1 - Jain and Narang. Cost Accounting : Principles and Practice. Kalyani Publishers. Ludhiana, 2006.

R2 - Shashi K Guptaa and Sharma, Management Accounting : Principles and Practice, Kalyani Publishers, Ludhiana, 7th Edition, 2014

R3 - Ramachandran R & Srinivasan R, (2012), Management Accounting, Sriram publications, Tennur, Trichy. 2012

WEBSITES

W1 - www.tutorialspoint.com

UNIT II

SL. No.	Lecture Duration (Hr)	Topics to be covered	Support Materials
1	1	Marginal Costing – Meaning, Definition, Features	R2 : 8.1 – 8.3
2	1	Marginal Costing – Assumptions, Merits, Demerits	R2 : 8.4 – 8.7
3	1	Marginal Cost Statement, Contribution, Marginal Cost Equation, Profit/Volume Ratio	R2 : 8.8– 8.10
4	1	Cost-Volume Profit analysis	R2 : 8.12 – 8.17
5	1	Break Even Analysis, Break Even Point, Cash Break Even Point - Tutorial	R2 : 8.18 – 8.23 W2
6	1	Advantages and Limitations of Break Even Point	R2 : 8.24 – 8.27
7	1	Margin of Safety, Angle of Incidence	R2 : 8.29 – 8.34
8	1	Calculation of Contribution, P/V ratio	T : C.178 – C.179
9	1	Calculation of Break Even Point, Margin of Safety	T : C.179 – C.181
10	1	Managerial Application of marginal Costing - Tutorial	T : C.182 – C.183
11	1	Pricing Decisions	T : C.183 – C.185
12	1	Profit Planning and maintaining a desired level of profit	T : C.186 – C.187
13	1	Make or Buy Decision	T : C.188 – C.189
14	1	Problems of Key or limiting factor	T : C.189 – C.191
15	1	Selection of a suitable or profitable sales mix - Tutorial	T : C.191 – C.192
16	1	Effect of changes in sales price Alternate methods of production	T : C.192 – C.193
17	1	Determination of optimum level of activity	T : C.194 – C.196
18	1	Evaluation of performance, Capital Investment decisions	T : C.197 – C.204
19	1	Recapitulation and discussion of important questions	
Total no. of hours planned for Unit - II			**19**

TEXT BOOKS

T - Maheswari, S.N., Management Accounting, Sultan Chand & Sons., New Delhi, 2011

REFERENCES

R1 - Jain and Narang. Cost Accounting : Principles and Practice. Kalyani Publishers. Ludhiana, 2006.

R2 - Shashi K Guptaa and Sharma, Management Accounting : Principles and Practice, Kalyani Publishers, Ludhiana, 7th Edition, 2014

R3 - Ramachandran R & Srinivasan R, (2012), Management Accounting, Sriram publications, Tennur, Trichy. 2012

WEBSITES

W2 - http://www.investopedia.com/

UNIT III

SL. No.	Lecture Duration (Hr)	Topics to be covered	Support Materials
1	1	Budget – Meaning, Definition	R2 : 10.1 – 10.3
2	1	Budgetary Control – Meaning, Nature, Objectives	R2 : 10.4 – 10.6 W3
3	1	Essentials and Objectives of Budgetary Control	R2 : 10.6 – 10.10
4	1	Characteristics of good budgeting	R2 : 10.11 – 10.13
5	1	Advantages and Limitations of Budgetary Control - Tutorial	R2 : 10.14 – 10.20
6	1	Classification and Types of Budget	T : C.6 – C.7
7	1	Operating and financial Budget	T : C.8 – C.10
8	1	Fixed and Flexible Budget	T : C.11 – C.14
9	1	Sales Budget	T : C.15 – C.17
10	1	Production budget - Tutorial	T : C.18 – C.21
11	1	Cash Budget	T : C.22– C.27
12	1	Master Budget Zero Based Budgeting	T : C.28 – C.31
13	1	Responsibility Accounting – Meaning, Definition, Features	T : C.32 – C.35
14	1	Steps involved in Responsibility Accounting	T : C.36 – C.42
15	1	Responsibility Centre - Tutorial	T : C.43 – C.46
16	1	Types of Responsibility Accounting	T : C.46 – C.51
17	1	Advantages of Responsibility Accounting	T : C.52– C.57
18	1	Transfer Price – Selection of Transfer price Method	T : C.58 – C.65
19	1	Recapitulation and discussion of important questions	
Total no. of hours planned for Unit - III			**19**

TEXT BOOKS

T - Maheswari, S.N., Management Accounting, Sultan Chand & Sons., New Delhi, 2011.

REFERENCES

R1 - Jain and Narang. Cost Accounting : Principles and Practice. Kalyani Publishers. Ludhiana, 2006.

R2 - Shashi K Guptaa and Sharma, Management Accounting : Principles and Practice, Kalyani Publishers, Ludhiana, 7th Edition, 2014

R3 - Ramachandran R & Srinivasan R, (2012), Management Accounting, Sriram publications, Tennur, Trichy. 2012

WEBSITES

W3 - http://www.tutorsonnet.com

UNIT IV

SL. No.	Lecture Duration (Hr)	Topics to be covered	Support Materials
1	1	Standard Costing – Meaning, Definition	R3 : 414 – 416
2	1	Steps involved in standard Costing	R3 : 417 – 420, W4
3	1	Standard Cost Vs Total Cost	R3 : 421 – 427
4	1	Standard Cost and Estimated Cost	R3 : 428 – 430
5	1	Advantages and Limitations of standard costing - Tutorial	R3 : 431 – 435
6	1	Determination of cost centre	T : C.96 – C.98
7	1	Types of standards	T : C.99 – C.100
8	1	Setting of Standard cost	T : C.101– C.105
9	1	Material Cost Variance, Material price variance, Material usage variance	T : C.106 – C.108
10	1	Material Mix Variance Material Yield Variance - Tutorial	T : C.109 – C.111
11	1	Labour Cost Variance Labour Rate Variance	T : C.112 – C.116
12	1	Labour Efficiency Variance Labour Mix Variance	T : C.117 – C.121
13	1	Overhead Cost Variance Expenditure Variance	T : C.122 – C.125
14	1	Volume Variance, Efficiency Variance	T : C.126 – C.131
15	1	Capacity Variance, Calendar Variance - Tutorial	T : C.131– C.135
16	1	Sales Price Variance, Sales Volume Variance, Sales Mix Variance	T : C.136 – C.147
17	1	Target Costing – Life Cycle Costing, Quality Costing	R2 : 39.1 – 39.5
18	1	Activity Based Costing	R2 : 39.6 – 39.15
19	1	Recapitulation and discussion of important questions	
Total no. of hours planned for Unit - IV			**19**

TEXT BOOKS

T - Maheswari, S.N., Management Accounting, Sultan Chand & Sons., New Delhi, 2011.

REFERENCES

R1 - Jain and Narang. Cost Accounting : Principles and Practice. Kalyani Publishers. Ludhiana, 2006.

R2 - Shashi K Guptaa and Sharma, Management Accounting : Principles and Practice, Kalyani Publishers, Ludhiana, 7th Edition, 2014

R3 - Ramachandran R & Srinivasan R, (2012), Management Accounting, Sriram publications, Tennur, Trichy. 2012

WEBSITES

W4 - http://accountingexplained.com

UNIT V

SL. No.	Lecture Duration (Hr)	Topics to be covered	Support Materials
1	1	Flow of Funds – Meaning, Definition, Current Account and Non Current Account	T :B.131 – B.135
2	1	Fund Flow Statement – Meaning, Definition, Uses, Importance, Limitations	T :B.136 – B.140
3	1	Procedure for preparing a Fund Flow Statement	T :B.141 – B.145
4	1	Schedule of changes in working capital	T :B.146 – B.149
5	1	Statement of Sources and Application of funds - Tutorial	T :B.149 – B.152
6	1	Preparation of Schedule of changes in working capital	T :B.152 – B.155
7	1	Preparation of Fund From Operations	T :B.154 – B.157
8	1	Cash Flows – meaning, Definition	R2 : 6.1 – 6.3 W5
9	1	Classification of cash flows, Significance, Limitation	R2 : 6.4 – 6.6
10	1	Cash flows from Operating activities - Tutorial	R2 : 6.7 – 6.10
11	1	Cash flows from Investing activities	R2 : 6.11 – 6.13
12	1	Cash flows from Financing activities	R2 : 6.14 – 6.15
13	1	Format of Cash Flow Statement	R2 : 6.16 – 6.25
14	1	Comparison of Funds Flow Statement and Cash Flow Statement	R2 : 6.26 – 6.35
15	1	Preparation of Cash Flow Statement - Tutorial	R2 : 6.36– 6.50
16	1	Preparation of Cash Flow Statement	R2 : 6.51– 6.65
17	1	Recapitulation and discussion of important questions	
Total no. of hours planned for Unit - V			**17**
18	1	Discussion of previous ESE question papers	
19	1	Discussion of previous ESE question papers	
20	1	Discussion of previous ESE question papers	3
Total no. of hours planned for Unit – V and Discussion of previous ESE question papers			**20**

TEXT BOOKS

T - Maheswari, S.N., Management Accounting, Sultan Chand & Sons., New Delhi, 2011.

REFERENCES

R1 - Jain and Narang. Cost Accounting : Principles and Practice. Kalyani Publishers. Ludhiana, 2006.

R2 - Shashi K Guptaa and Sharma, Management Accounting : Principles and Practice, Kalyani Publishers, Ludhiana, 7th Edition, 2014

R3 - Ramachandran R & Srinivasan R, (2012), Management Accounting, Sriram publications, Tennur, Trichy. 2012

WEBSITES

W5 - http://www.investopedia.com

UNIT – I

Management Accounting - Meaning - Definition - Nature - Scope of Management Accounting - Comparison of Management Accounting with Cost Accounting and Financial Accounting. Cost concepts - Meaning - Scope - Objectives - Importance of Cost Accounting - Cost - Costing - Cost Control, and Cost Reduction - Elements of Cost - Components of total Cost - Classification of Costs - Fixed Variable - Semi Variable - Step Costs - Product - Period Costs - Direct - Indirect Costs - Preparation of Cost Sheet in Lieu with Cost Accounting Standard.

INTRODUCTION

The process of preparing management reports and accounts that provide accurate and timely financial and statistical information required by managers to make day-to-day and short-term decisions. Unlike financial accounting, which produces annual reports mainly for external stakeholders, management accounting generates monthly or weekly reports for an organization's internal audiences such as department managers and the chief executive officer. These reports typically show the amount of available cash, sales revenue generated, amount of orders in hand, state of accounts payable and accounts receivable, outstanding debts, raw material and inventory, and may also include trend charts, variance analysis, and other statistics.

Cost accounting information is designed for managers. Since managers are taking decisions only for their own organization, there is no need for the information to be comparable to similar information from other organizations. Instead, the important criterion is that the information must be relevant for decisions that managers operating in a particular environment of business including strategy make. Cost accounting information is commonly used in financial accounting information, but first we are concentrating in its use by managers to take decisions.

The organizations and managers are most of the times interested in and worried for the costs. The control of the costs of the past, present and future is part of the job of all the managers in a company. In the companies that try to have profits, the control of costs affects directly to them. Knowing the costs of the products is essential for decision-making regarding price and mix assignation of products and services.

Cost accounting is a branch of accounting . It can be prepared to avoid the limitations of financial accounting to know the operating efficiency regarding labour, material and overhead of management policies, the costing is prepared.

The work of managers focuses on (1) planning, which includes setting objectives and outlining how to attain these objectives; and (2) control, which includes the steps to take to ensure that objectives are realized. To carry out these planning and control responsibilities, managers need

information about the organization. From an accounting point of view, this information often relates to the costs of organization.

The term cost is used in many different ways in managerial accounting. The reason is that there are many types of costs, and these costs are classified differently according to the immediate need of management. For example, managers may want cost data to prepare external financial reports, to prepare planning budgets, or to make decisions. Each different use of cost data demands a different classification and definition of cost. For example, the preparation of external financial reports require historical cost data, whereas decision making may require predictions about future costs. In the following paragraphs we have discussed many of possible use of cost data and how costs are defined and classified for each use.

Origins

Cost accounting has long been used to help managers understand the costs of running a business. Modern cost accounting originated during the industrial revolution, when the complexities of running a large scale business led to the development of systems for recording and tracking costs to help business owners and managers make decisions.

In the early industrial age, most of the costs incurred by a business were what modern accountants call "variable costs" because they varied directly with the amount of production. Money was spent on labor, raw materials, power to run a factory, etc. in direct proportion to production. Managers could simply total the variable costs for a product and use this as a rough guide for decision-making processes.

Some costs tend to remain the same even during busy periods, unlike variable costs, which rise and fall with volume of work. Over time, the importance of these "fixed costs" has become more important to managers. Examples of fixed costs include the depreciation of plant and equipment, and the cost of departments such as maintenance, tooling, production control, purchasing, quality control, storage and handling, plant supervision and engineering. In the early twentieth century, these costs were of little importance to most businesses. However, in the twenty-first century, these costs are often more important than the variable cost of a product, and allocating them to a broad range of products can lead to bad decision making. Managers must understand fixed costs in order to make decisions about products and pricing.

Definition:

According to Horngren Charles. T. " Cost accounting is quantitative method that accumulates, Classifies, Summaries and interprets information for 3 major purposes. i) Operational planning and control. ii) Special decisions. iii) Product decisions."

According to WJ Morse, " Cost accounting is the processing and evaluation of monetary and non-monetary data to provide information for external reporting, internal planning and control of business operations and special analysis and decisions."

Scope of Costing:

The scope of cost accounting is very wide. There are lots of techniques, tools, procedures, processes, programs are used in cost accounting for calculating cost and its control. But basically, we divide its scope within three major parts namely a) Cost ascertainment b)Cost accounting c)Cost control .

1.Cost Ascertainment

In this region of cost accounting, cost accounting collects product's material, labor and overhead cost and try to calculate total and per unit cost of product. This total cost calculation will be based on historical or standard or estimated basis. After this, cost accountant will use any method of costing like specific order costing, operation costing, and direct costing technique. These techniques and methods may be used for calculating different nature products in same organization.

2.Cost Records (Cost Accounting)

In this part of cost accounting, cost accountant maintains cost books, vouchers, ledgers, reports and other cost related documents for future comparison and reference. It will also be under the scope of cost accounting.

3. Cost Control:

This is the end boundary of cost accounting scope. In this division, cost accountant used different techniques and methods for controlling the cost. Save One Rupees in the cost of product means we have earned one rupees in the production of goods. So, Cost accountant uses budgetary control, standard costing, break even point analysis and many other techniques for controlling the cost.

Objectives of Costing :

Cost

Cost may be define as the price of any asset when one company purchases it or it may the expenses for getting services . So , we can say that cost is total amount which is sacrificed for getting the goods , services and assets .In general , cost is calculated on production of goods . Total cost represents cost of raw material , cost of labour and cost of overheads after adding above we can find total cost and if we divide total numbers of units, then we can find cost per unit.

Costing

Costing is technique to determine the cost. It involves the process and method to classify and analysis of different expenditures.

Cost Accounting

Cost accounting is science of recording , classify , analyzing and allocation of cost to cost centers or cost unit . It also include cost control .

Cost accounting = Accounting used → **{ [** determine the cost + control the cost**] }**

Objective of Cost accounting

1. To determine the cost.

It is the objective of cost accounting that cost accountant has to determine the cost because, after this cost per unit, price per unit can be calculated and product can be sold in market

2. To analyze of cost

Under this objective , cost is calculated after analyze which is done in cost sheet by knowing different elements and writing in specific head .

3. To reduce the Wastage

Cost accounting's main objective is to reduce the wastage , Wastage may be in material ,labour cost or overhead cost . Cost accountant makes cost sheet and after this he compares it with standard cost and with this can find at where wastage are incurred and after this he can reduce it by making proper control .

4. Provide cost data

There are large no. of previous records of cost of different products are available, if cost accounting is maintained by accounting department. It can be given to other department for taking decision. It is the another objective of cost accounting .

5. Ascertain the profitability

We know that cost accounting is to determine cost and with this cost we can find profit margin

6. Control the cost

Cost accounting's objective is to control the cost . For example Over stocking and under stocking is loss of money by using cost control techniques in stock maintaining, we can keep optimum level of stock to control the cost of stock .

7. Advising the management

Cost accountant can advice to management for achieving the objectives of cost accounting Alexander Dusty of President of Global Shop Solutions' thought on Objectives of Cost Accounting .

"Cost accounting provides a richer information base for operations management. The collection, classification, and determination of cost through accounting becomes, then, a means by which efficiencies are discovered and implemented. To the extent that these implementations offer a greater return on investment, and perhaps a greater dividend to shareholders, cost accounting can be said to truly help build the bottom-line profit".

The above should be summarized in the following manner

To ascertain the cost per unit of the different products manufactured by the business concern.

To provide a correct analysis of cost both by process or operations and by different elements of cost.

To disclose sources of wastage whether of material, time or expense or in the use of machinery equipment & tools .

To provide requisite data & serve as a guide to price fixing of products manufactured or services rendered.

To ascertain the profitability for advising the management.

To exercise effective control of stock, raw materials, working progress & finished products.

To reveal the sources of economy.

To help in supervising.

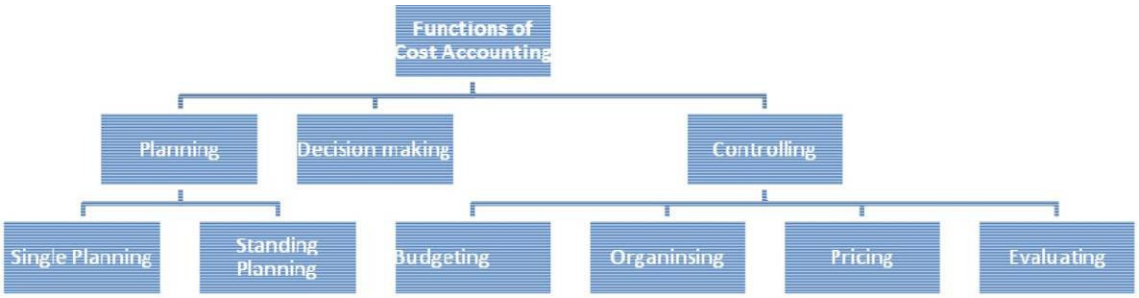
To organize the internal systems, Cost reduction programs.

To Provide specialized services of cost audit.

To Find out costing Profit or Loss .

Functions of Cost Accounting

Cost accounting analyzes corporate costs related to overhead, products, and manufacturing orders. It provides a variety of costing approaches such as standard, FIFO, LIFO, average, target, and activity-based costing (ABC). The software should support the following functionality: cost data; cost allocation definitions; cost allocation process; cost management; cost and sales price calculation; activity based costing (ABC); and activity based cost tracing and tracking.



Merits and Demerits of Cost Accounting :

Following are the most important advantages of a good cost accounting system:

1)Classification and Subdivision of Costs:

In the contrast to a single profit or loss figure supplied by general accounting, the cost accounting classifies costs and income by every conceivable subdivision of the business enterprise. In a good costing system data regarding costs by departments, processes, functions, products, orders, jobs, contracts and services can easily computed. This detailed cost information for managerial control is one of the most important contributions of cost accounting.

2)Adequacy Of Inadequacy of Selling Prices:

Unit cost of production, administration and safe made possible by cost accounting aids management in deciding the adequacy or inadequacy of selling prices i.e. neither too high detracting business, nor too low resulting in losses to the concern. In period of depressions, slumps, or in case of competition management forced to lower prices even below cost of production and sale. In such circumstances, cost accounting will help management in deciding the proper reduction.

3)Disclosure of profitable Products:

Cost Accounting will disclose activities, departments, products and territories, which bring profit and those that result in losses. Management to determine what products because of profit margin the sales department because of their greater profit margin should emphasize will use this information. What products arte unprofitable or less profitable and might be eliminated or lesser sales pressure be given to them. What activities or territories are not producing sufficient profit and should be either further improved or eliminated and what methods of production and distribution are most profitable for the firm. This will increase the overall profit of the concern.

4)Control of Material and Supplies:

In a good costing system materials and supplies must be accounted for in terms of departments, jobs, units of production or service. This will eliminate altogether or reduce to the minimum misappropriations, embezzlements, deterioration, obsolescence, and losses from defective, spoiled, scrap and out of date materials and supplies.

5)Maintenance of Proper Investment in Inventories:

A costing system will help in the maintenance of various inventory items of materials and supplies in line with production and sale requirements. If these quantities are too small, production may stop or sales may be lost. On the other hand, if quantities of such materials and supplies are in excess of the production and sales requirements, too much working capital may unnecessarily tie up in inventories. The detailed quantity information furnished by the cost accountant at all times will go a long way in reducing or eliminating this possibility.

6) Correct Valuation of Inventories:

Cost Accounting plays a basic role in the correct valuation of inventories of finished goods, work in process, materials and supplies. The book inventory method (as opposed to physical inventory method) made possible by cost accounting system will involve the operation of the various inventory control accounts in such a manner that the balances of these accounts well be inventory valuations required for periodic financial statements. This enables the preparation of monthly financial statements without the trouble and expense of taking monthly physical inventories.

Further, the value of inventories shown by the book inventory will be more accurate than inventory values shown by the physical inventory method. If no cost system is in use and inventory values computed by physical inventory method, then the value of these inventories must either bean estimate of cost or be determined at market values. But in a cost accounting system accurate procedures and techniques are available by which inventory values can be computed in a relatively more exact fashion. The requirements of management, stockholders, creditors, employees and other groups interested in the financial statements of the firm naturally attach more emphasis on this objective of cost accounting. In most cases, this objective of cost accounting dominates the formal cost records and routines.

7) Whether to Manufacture or Purchase from Outsiders:

Cost records furnish information regarding the cost of manufacturing of different finished parts, which assist management in making a decision whether to purchase these parts from outside manufacturers or manufacture them in the factory.

8) Control of Labour Cost:

Orders, jobs, contracts, departments, processes, or services record cost of labour. In many manufacturing enterprises, daily time reports are prepared showing the number of hours and minutes spent and the wage rate for each worker per job or operation. This enables management to compare the current cost of labour per job or operation with some previously incurred or determined cost thus measuring the efficiency or inefficiency of the labour force and assigning the work to employees best suited for it.

9) Use of Company-wide Wage Incentive Plans:

When labour cost is accounted for by jobs and operations, it is possible to use effectively wage incentive plans or bonus schemes for the remuneration of labour force. Carefully planned and administered incentive schemes are an effective means of enforcing superior performance and cost reduction. Workers are more co-operative, responsive and productive when some form of incentive offered to them for surpassing stipulated standards of perfection and performance. Cost of accounting has developed incentive plans, which are applicable not only to factory workers but also to clerks, salespersons, and other executives for above standard performance.

10) Controllable and Uncontrollable Cost:

Cost accounting exhibits at each stage of production and sale the controllable and uncontrollable items in the manufacturing, selling and administrative cost thus enabling management to concentrate attention on those costs, which can reduced of, eliminated. There is very little the management can do to reduce such uncontrollable items as idle time of machines and labour, wastage in the use of materials, supplies and power can controlled much more effectively.

11) Use of Standards for Measuring Efficiency:

A complete cost accounting system, generally, has a well-developed plan of standards to measure the efficiency of the organization in the use of materials, incurrence of labour and other manufacturing cost. Cora does this appraisal paring the work of factory workers, office and sales personnel and other executive with what should have done in manufacturing and selling a given quantity of units in a given period.

12) Reduction of Losses Due to Seasonal Conditions:

Cost accounting provides data for making a complete analysis of losses due to idle plant and equipment or due to the use of plant and equipment beyond normal capacity, irregular employment of labour, wastes in the use of materials. It indicates cost variations between active and inactive periods and seasonal conditions in the business or industry. Seasonal fluctuations in business activity affect profoundly the earnings of the concern. In many industries, seasonal variations are responsible for higher costs and lower profits.

13)Budgeting:

In a good cost accounting system, preparation of various budgets periods in advance of actual production and sale of goods is necessary. These budgets include budgeted statement of profits, budgeted cost of plant improvements, budgeted cost of production, budgeted cash receipts and payments, and so forth. These budgets show the plans of the management for future periods and they reflect the expected results of these plans. They are of great help in getting the sales manager, the works manager, and the treasurer into agreement as to a plan that can sold, manufactured and financed. In fact, the use of budgets has made costing a preventive device for the rectification of inefficiencies before they creep into the business operations or as they occur from day to day. In other words, budgeting, inculcates the habit of thinking and calculations before taking decisions.

14) Reliable Check on General Accounting:

Finally, an efficient and proper system of cost accounting is a most reliable and independent check on the accuracy of the financial accounts. This check made effective through reconciliation of the balance of profit or loss shown by the costing profit and loss account and the balance of profit of profit or loss revealed by the general accounting profit and loss account.

Advantages of Cost Accounting:

Profitable and Unprofitable activities are disclosed.

It enables a concern to measure the efficiency and then to improve and maintain.

It provides information upon which estimates and tenders are based.

It guides future production policies.

It helps in increasing the profits.

It enables the periodical determination of profits or losses.

It is also very helpful to the Government.

Sound business concern with a good system of cost can attract more investors.

It's very helpful to the consumers.

The efficiency of public enterprises can also be calculated.

Limitations of Cost Accounting:

It lacks a uniform procedure.

Many formalities are to be observed.

Handling future situations has not been much.

Its is very expensive.

It is failure in many cases.

Distribution between Cost, Management and Financial accounting

IFAC Definition of Enterprise Financial Management embracing three broad areas: Cost Accounting; Performance Evaluation & Analysis; Planning & Decision Support. Copyright July 2009 Professional Accountants in Business Committee. International Good Practice Guidance:
Evaluating and Improving Costing in Organizations

Cost Accounting is a branch of accounting, which has been developed because of the limitations of Financial Accounting from the point of view of management control and internal reporting. Financial accounting performs admirably, the function of portraying a true and fair overall picture of the results or activities carried on by an enterprise during a period and its financial position at the end of the year. Also, on the basis of financial accounting, effective control can be exercised on the property and assets of the enterprise to ensure that they are not misused or misappropriated. To that extent financial accounting helps to assess the overall progress of a concern, its strength and weaknesses by providing the figures relating to several previous years.

Data provided by Cost and Financial Accounting is further used for the management of all processes associated with the efficient acquisition and deployment of short, medium and long term financial resources. Such a process of management is known as Financial Management. The objective of Financial Management is to maximize the wealth of shareholders by taking effective Investment, Financing and Dividend decisions. Investment decisions relate to the effective deployment of scarce resources in terms of funds while the Financing decisions are concerned with acquiring optimum finance for attaining financial objectives.

The last and very important 'Dividend decision' relates to the determination of the amount and frequency of cash which can be paid out of profits to shareholders. On the other hand, Management Accounting refers to managerial processes and technologies that are focused on adding value to organizations by attaining the effective use of resources, in dynamic and competitive contexts. Hence, Management Accounting is a distinctive form of resource management which facilitates management's 'decision making' by producing information for managers within an organization.

Definition

According to the Chartered Institute of Management Accountants (CIMA), Management Accounting is "the process of identification, measurement, accumulation, analysis, preparation,

interpretation and communication of information used by management to plan, evaluate and control within an entity and to assure appropriate use of and accountability for its resources.

Management accounting also comprises the preparation of financial reports for non-management groups such as shareholders, creditors, regulatory agencies and tax authorities"(CIMA Official Terminology).

The Institute of Management Accountants (IMA)[2] recently updated its definition as follows: "management accounting is a profession that involves partnering in management decision making, devising planning and performance management systems, and providing expertise in financial reporting and control to assist management in the formulation and implementation of an organization's strategy".

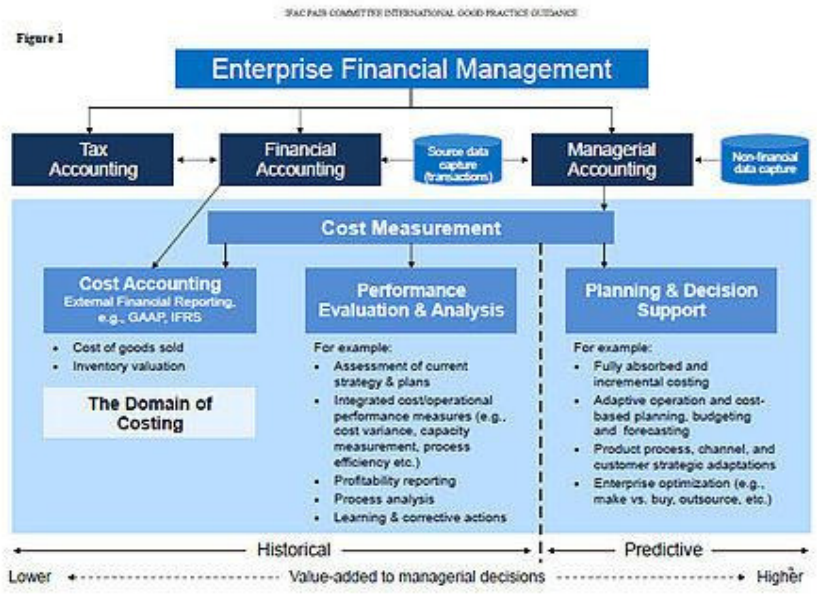
The American Institute of Certified Public Accountants (AICPA) states that management accounting as practice extends to the following three areas:

Strategic Management—Advancing the role of the management accountant as a strategic partner in the organization.

Performance Management—Developing the practice of business decision-making and managing the performance of the organization.

Risk Management—Contributing to frameworks and practices for identifying, measuring, managing and reporting risks to the achievement of the objectives of the organization.

The Institute of Certified Management Accountants(ICMA), states "A management accountant applies his or her professional knowledge and skill in the preparation and presentation of financial and other decision oriented information in such a way as to assist management in the formulation of policies and in the planning and control of the operation of the undertaking". Management Accountants therefore are seen as the "value-creators" amongst the accountants. They are much more interested in forward looking and taking decisions that will affect the future of the organization, than in the historical recording and compliance (score keeping) aspects of the profession. Management accounting knowledge and experience can therefore be obtained from varied fields and functions within an organization, such as information management, treasury, efficiency auditing, marketing, valuation, pricing, logistics, etc.



Difference Between Financial and Managerial Accounting :

Financial accounting reports are prepared for the use of external parties such as shareholders and creditors, whereas managerial accounting reports are prepared for managers inside the organization. This contrast in basic orientation results in a number of major differences between financial and managerial accounting, even though both financial and managerial accounting often rely on the same underlying financial data. In addition to the to the differences in who the reports are prepared for, financial and managerial accounting also differ in their emphasis between the past and the future, in the type of data provided to users, and in several other ways. These differences are discussed in the following paragraphs.

Emphasis on the Future:

Since planning is such an important part of the manager's job, managerial accounting has a strong future orientation. In contrast, financial accounting primarily provides summaries of past financial transactions. These summaries may be useful in planning, but only to a point. The future is not simply a reflection of what has happened in the past. Changes are constantly taking place in economic conditions, and so on. All of these changes demand that the manager's planning be based in large part on estimates of what will happen rather than on summaries of what has already happened.

Relevance of Data:

Financial accounting data are expected to be objective and verifiable. However, for internal use the manager wants information that is relevant even if it is not completely objective or verifiable. By relevant, we mean appropriate for the problem at hand. For example, it is

difficult to verify estimated sales volumes for a proposed new store at good Vibrations, Inc., but this is exactly the type of information that is most useful to managers in their decision making.

The managerial accounting information system should be flexible enough to provide whatever data are relevant for a particular decision.

Less Emphasis on Precision:

Timeliness is often more important than precision to managers. If a decision must be made, a manager would rather have a good estimate now than wait a week for a more precise answer. A decision involving tens of millions of dollars does not have to be based on estimates that are precise down to the penny, or even to the dollar. In fact, one authoritative source recommends that, "as a general rule, no one need more than three significant digits. this means, for example, that if a company's sales are in the hundreds of millions of dollars, than nothing on an income statement needs to be more accurate than the nearest million dollars. Estimates that accurate to the nearest million dollars may be precise enough to make a good decision. Since precision is costly in terms of both time and resources, managerial accounting places less emphasis on precision than does financial accounting. In addition, managerial accounting places considerable weight on non monitory data, for example, information about customer satisfaction is tremendous importance even though it would be difficult to express such data in monitory form.

Segments of an Organization:

Financial accounting is primarily concerned with reporting for the company as a whole. By contrast, managerial accounting forces much more on the parts, or segments, of a company. These segments may be product lines, sales territories divisions, departments, or any other categorizations of the company's activities that management finds useful. Financial accounting does require breakdowns of revenues and cost by major segments in external reports, but this is secondary emphasis. In managerial accounting segment reporting is the primary emphasis.

Generally Accepted Accounting Principles (GAAP):

Financial accounting statements prepared for external users must be prepared in accordance with generally accepted accounting principles (GAAP). External users must have some assurance that the reports have been prepared in accordance with some common set of ground rules. These common ground rules enhance comparability and help reduce fraud and

misrepresentations, but they do not necessarily lead to the type of reports that would be most useful in internal decision making.

For example, GAAP requires that land be stated at its historical cost on financial reports. However if, management is considering moving a store to a new location and then selling the land the store currently sits on, management would like to know the current market value of the land, a vital piece of information that is igored under generally accepted accounting principles (GAAP).

Managerial Accounting Not Mandatory:

Financial accounting is mandatory; that is, it must be done. Various outside parties such as Securities and Exchange Commission (SEC) and the tax authorities require periodic financial statements. Managerial accounting, on the other hand, is not mandatory. A company is completely free to do as much or as little as it wishes. No regularity bodies or other outside agencies specify what is to be done, for that matter, weather anything is to be done at all. Since managerial accounting is completely optional, the important question is always, "Is the information useful?" rather than, "Is the information required?"

Summary:

Financial Accounting	Managerial Accounting
Reports to those outside the organization owners, lenders, tax authorities and regulators.	Reports to those inside the organization for planning, directing and motivating, controlling and performance evaluation.
Emphasis is on summaries of financial consequences of past activities.	Emphasis is on decisions affecting the future.
Objectivity and verifiability of data are emphasized.	Relevance of items relating to decision making is emphasized.
Precision of information is required.	Timeliness of information is required.

Only summarized data for the entire organization is prepared.	Detailed segment reports about departments, products, customers, and employees are prepared.
Must follow Generally Accepted Accounting Principles (GAAP).	Need not follow Generally Accepted Accounting Principles (GAAP).
Mandatory for external reports.	Not mandatory.

Elements of cost

Material (Material is a very important part of business)

- Direct material

Labor

- Direct labor

Overhead (Variable/Fixed)

- Indirect material
- Indirect labor
- Maintenance & Repair
- Supplies
- Utilities
- Other Variable Expenses
- Salaries
- Occupancy (Rent)
- Depreciation
- Other Fixed Expenses

(In some companies, machine cost is segregated from overhead and reported as a separate element)

They are grouped further based on their functions as,

Production or works overheads

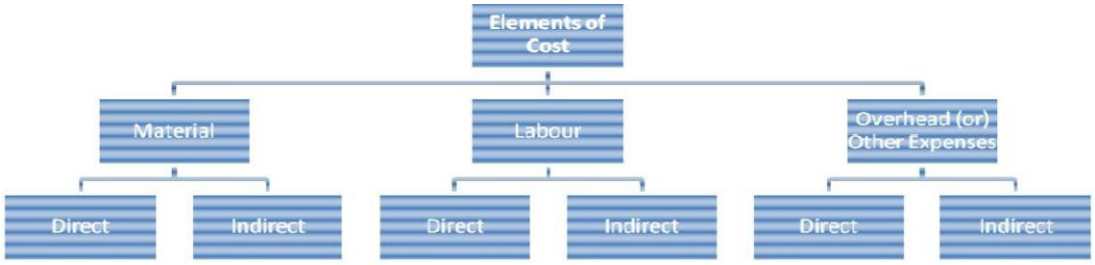
Administration overheads

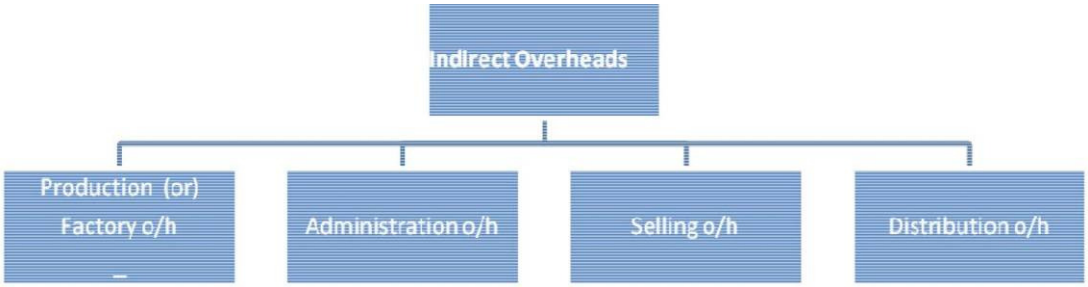
Selling overheads

Distribution overheads

Financial Expenses

Elements of Cost





Cost Classification:

By Nature (materials, labor, expenses)

By Function (production, selling, distribution, administration, R&D, development etc)

By Degree of traceability to the product.(direct and indirect)

By Changes in activity (fixed, variable, semi-variable)

By Controllability (controllable, uncontrollable)

By Normality (normal, abnormal)

By Relationship with accounting Period

By Time

By Planning and Control

By Association with the product

By Management decisions.

Cost Object

Costs are assigned to objects for a variety of purposes including pricing, profitability studies, and control of spending. A cost object is anything for which cost data are desired

including products, product lines, customers, jobs, and organizational subunits. For the purpose of assigning costs to cost objects, costs are classified as direct cost and indirect cost.

Direct Cost:

A direct cost is a cost that can be easily and conveniently traced to the particular cost object under consideration. A cost object is anything for which cost data is required including products, customer's jobs and organizational subunits. For example, if a company is assigning costs to its various regional and national sales offices, then the salary of the sales manager in its Tokyo office would be a direct cost of that office.

Indirect Cost:

An indirect cost is a cost that cannot be easily and conveniently traced to the particular cost

object under consideration. For example a soup factory may produce dozens of verities of canned

soups. The factory manager's salary would be an indirect cost of a particular verity such as chicken noodle soup. The reason is that the factory manager's salary is not caused by any one variety of soup. To be traced to a cost object such as a particular product, the cost must be caused by the cost object.

This salary of manger is called common cost of producing the various products of the factory. A common cost is a cost that is incurred to support a number of costing objects but cannot be traced to them individually. A common cost is a particular type of indirect cost.

A particular cost may be direct or indirect, depending on the cost object. While, in the above example, the soup factory manager's salary is an indirect cost of manufacturing chicken noodle soup, it is a direct cost of the manufacturing division. In the first case, the cost object is the chicken noodle soup product. In the second case, the cost object is the entire manufacturing division.

Cost Classification as Manufacturing and Non-manufacturing:

Manufacturing firms are involved in acquiring raw materials producing finished goods and then administrative, marketing and selling activities. All these activities require costs to be incurred. These costs are normally classified by manufacturing companies as manufacturing and non-manufacturing costs. In the following paragraphs we will see how these costs are classified as manufacturing and non-manufacturing.

Manufacturing Costs:

Manufacturing costs are those costs that are directly involved in manufacturing of products and services. Examples of manufacturing costs include raw materials costs and salary of labor workers. Manufacturing cost is divided into three broad categories by most companies.

Direct materials cost

Direct labor cost

Manufacturing overhead cost.

Direct Materials Cost:

The materials that go into final product are called raw materials. This term is somewhat misleading, since it seems to imply unprocessed natural resources like wood pulp or iron ore. Actually raw materials refer to any materials that are used in the final product; and the finished product of one company can become raw material of another company. For example plastic produced by manufacturers of plastic is a finished product for them but is a raw material for Compaq Computers for its personal computers.

Direct Materials are those material that become an integral part of the finished product and that can be physically and conveniently traced to it. Examples include tiny electric motor that Panasonic uses in its CD players to make the CD spin. According to a study of 37 manufacturing industries material costs averaged about 55% of sales revenue.

Sometimes it is not worth the effort to trace the costs of relatively insignificant materials to the end products. Such minor items would include the solder used to make electrical connection in a Sony TV or the glue used to assemble a chair. Materials such as solder or glue are called indirect materials and are included as part of manufacturing overhead, which is discussed later on this page.

Direct Labor Cost:

The term direct labor is reserved for those labor costs that can be essentially traced to individual units of products. Direct labor is sometime called touch labor, since direct labor workers typically touch the product while it is being made. The labor cost of assembly line workers, for example, is a direct labor cost, as would the labor cost of carpenter, bricklayer and machine operator. Labor costs that cannot be physically traced to the creation of products, or that can be traced only at a great cost and inconvenience, are termed indirect labor and treated as part of manufacturing overhead, along with indirect materials. Indirect

labor includes the labor costs of janitors, supervisors, materials handlers, and night security guards. Although the efforts of these workers are essential to production, it would be either impractical or impossible to accurately trace their costs to specific units of product. Hence, such labor costs are treated as indirect labor. In some industries, major shifts are taking place in the structure of labor costs. Sophisticated automated equipment, run and maintained by skilled workers, is increasingly replacing direct labor. In a few companies, direct labor has become such a minor element of cost that it has disappeared altogether as a separate cost category. However the vast majority of manufacturing and service companies throughout the world continue to recognize direct labor as a separate cost category.

Direct Materials cost combined with direct labor cost is called prime cost**.**

In equation form:

Prime Cost = Direct Materials Cost + Direct Labor Cost

For example total direct materials cost incurred by the company is Rs.4,500 and direct labor cost is Rs.3,000 then prime cost is Rs.7,500 (Rs.4,500 + Rs.3,000).

Fixed Cost

A fixed cost is a cost that remains constant, in total, regardless of changes in the level of activity. Unlike variable costs, fixed costs are not affected by changes in activity. Consequently, as the activity level rises and falls, the fixed costs remain constant in total amount unless influenced by some outside forces, such as price changes. Rent is a good example of fixed cost. Fixed cost can create confusion if they are expressed on per unit basis. This is because average fixed cost per unit increases and decreases inversely with changes in activity. Examples of fixed cost include straight line depreciation, insurance property taxes, rent, supervisory salary etc.

Manufacturing Overhead Cost:

Manufacturing overhead, the third element of manufacturing cost, includes all costs of manufacturing except direct material and direct labor. Examples of manufacturing overhead include items such as indirect material, indirect labor, maintenance and repairs on production equipment and heat and light, property taxes, depreciation, and insurance on manufacturing facilities. Indirect materials are minor items such as solder and glue in manufacturing industries. These are not included in direct materials costs. Indirect labor is a labor cost that cannot be trace to the creation of products or that can be traced only at great cost and inconvenience. Indirect labor includes the labor cost of janitors, supervisors, materials handlers and night security guards. Costs incurred for heat and light, property taxes, insurance, depreciation and so forth

associated with selling and administrative functions are not included in manufacturing overhead. Studies have found that manufacturing overhead averages about 16% of sales revenue. Manufacturing overhead is known by various names, such as indirect manufacturing cost, factory overhead, and factory burden. All of these terms are synonymous with manufacturing overhead. Manufacturing overhead cost combined with direct labor is called conversion cost.

Formula:

Prime cost = Direct Materials + Direct Labour + Direct Expenses Works cost (or) Factory Cost = Prime Cost + Factory Overhead Cost of Production = Works cost + Administration overhead

Total Cost (or) Cost of Sales = Cost of production + Selling and distribution overhead.

In equation form:

Conversion Cost = Direct Labor Cost + Manufacturing Overhead Cost

For example if total direct labor cost is Rs. 3,000 and total manufacturing overhead cost is Rs.

2,000 then conversion cost is Rs. 5,000 (Rs. 3,000 + Rs. 2,000).

Non-manufacturing Costs:

Non-manufacturing costs are those costs that are not incurred to manufacture a product. Examples of such costs are salary of sales person and advertising expenses. Generally non-manufacturing costs are further classified into two categories.

1. Marketing and Selling Costs
2. Administrative Costs

Marketing or Selling Costs:

Marketing or selling costs include all costs necessary to secure customer orders and get the finished product into the hands of the customers.

These costs are often called order getting or order filling costs. Examples of marketing or selling **costs** include advertising costs, shipping costs, sales commission and sales salary.

Administrative Costs:

Administrative costs include all executive, organizational, and clerical costs associated with general management of an organization rather than with manufacturing, marketing, or selling. Examples of administrative costs include executive compensation, general accounting, secretarial, public relations, and similar costs involved in the overall, general administration of the organization as a whole.

Cost Concepts:

Cost

Cost Centre

Profit Centre

Conversion Cost

Contribution margin

Carrying cost

Out of stock cost

Ordering cost

Development cost

Policy cost

Idle facilities cost

Expired cost

Incremental revenue

Added Value cost

The work of managers focuses on (1) planning, which includes setting objectives and outlining how to attain these objectives; and (2) control, which includes the steps to take to ensure that objectives are realized. To carry out these planning and control responsibilities, managers need information about the organization. From an accounting point of view, this information often relates to the costs of organization.

Formula:

Prime cost = Direct Materials + Direct Labour + Direct Expenses Works cost (or) Factory Cost = Prime Cost + Factory Overhead Cost of Production = Works cost + Administration overhead

Total Cost (or) Cost of Sales = Cost of production + Selling and distribution overhead. Conversion Cost

(Direct Labor +Overhead Cost)

Manufacturing Costs

Direct Materials:

Materials that can be physically and conveniently traced to a product, such as wood in a table.

Direct Labor:

Labor costs that can be physically and conveniently traced to a product such as assembly line workers in a plant. Direct labor is also called touch labor cost.

Manufacturing Overhead:

All costs of manufacturing a product other than direct materials and direct labor, such as indirect materials, indirect labor, factory utilities, and depreciation of factory equipment.

Non-manufacturing Costs

Marketing or selling costs:

All costs necessary to secure customer orders and get the finished product or service into the hands of the customer, such as sales commission, advertising, and depreciation of delivery equipment and finished goods warehouse.

Administrative Costs:

All costs associated with the general management of the company as a whole, such as executive compensation, executive travel costs, secretarial salaries, and depreciation of office building and equipment Manufacturing overhead cost combined with direct labor is called conversion cost.

Cost Sheet

Cost sheet is a statement presenting the items entering into cost of products or services. It shows the total cost components by stages and cost per unit of output during a period. It is usually prepared to meet three objectives: to provide the classification of costs in a summarised form, to prepare estimates of costs for future use and to facilitate a comparative study of costs with previous cost sheets to know the cost trends.

The layout of a typical cost sheet is provided below:

Specimen cost sheet

	Total cost	Cost per Unit
Direct materials		
opening stock of materials		
add purchases of materials		
less closing stock of materials		
(a) materials consumed		
Direct wages		
Direct expenses		
Prime cost		
Add Factory Overheads		
Factory Rent, Rates, Taxes		
Fuel-Power And Water		
Lighting And Heating		
Indirect Wages		
Salaries Of Works Manager Etc.		
Indirect Materials		
Drawing Office And Works Office Expenses		
Depreciation On Factory Land And Building		
Less Scrap Value		
Defective Work		
Add Work In Progress (Opening)		
Less Work In Progress (Closing)		
Works cost		
Add Office/Administration Overheads		
Office Rent, Insurance, Lighting, Cleaning		
Office Salaries, Telephone, Law And		
Audit Expenses		
General Manager's Salary		
Printing And Stationery		
Maintenance, Repairs, Upkeep Of Office bldg		
bank charges and miscellaneous expenses		

Cost Of Production		
Add **opening stock of finished goods**		
Less **closing stock of finished goods**	———	
Cost of goods sold		
Add selling and distribution overheads showroom expenses, salesmen's salaries & commission, bad debts, discounts, warehouse rent, carriage outwards, advertising, delivery expenses, samples and free gifts etc.		
ost of sales		
add net profit or deduct net loss:		
Sales		

Treatment of certain items in the cost sheet:

(a) ***Computation Of Profit:*** profit may be calculated either as a Percentage of cost or selling price.

Example: profit as a percentage of cost:

Factory cost	5,700
Administration overhead	600
Total cost	6,300
Profit 10% on cost	630
Selling price	6,930

$$\text{So profit} = \text{cost} \times \frac{\text{percent}}{100}$$

Example: Profit as a percentage of selling price. Here the percentage is on Selling price. Selling price includes Cost + Profit.

Less profit = 10

Cost price = 90

This profit of rs.10 is on rs.90 which is the cost price. So it is 1/9th of cost price. In the above example,

Total cost = 6,300

Profit on 10% on SP = 700

Selling price 7,000

$$\text{So sale price} = \frac{\text{Cost x percent}}{\text{100 - percent}}$$

$$= \frac{6{,}300 \times 100}{100 - 10}$$

$$= 7{,}000$$

(b) Treatment Of Stock: the term `stock' includes three items: raw materials, work in progress and finished goods. The value of raw materials is arrived at in the following manner:

Opening stock of raw material

Add purchases

Add expenses involved in the purchases of raw material

Less closing stock of raw materials

Work-in-progress represents the quantity of semi-finished goods at the time of the preparation of the cost sheet. It represents cost of materials, labour and manufacturing expenses to-date. Work-in-progress may be shown in the cost sheet either immediately after the prime cost or after the calculation of the factory overheads, as shown in the specimen cost sheet. Finally, in respect of stock of finished goods, adjustments have to be made where opening and closing stock of finished goods are given. This is done, as shown in the specimen cost sheet, by adding opening stock of finished goods to the cost of production arrived at on the basis of current figures and reducing the closing stock of finished goods from this total. Let's explore these aspects more clearly through the following illustrations:

Tenders And Quotations:

While preparing tenders or quotations, manufacturers or contractors have to look into the figures pertaining to the previous year as shown in the cost sheet for that period. These figures have to be suitably

modified in the light of changes expected in the prices of materials, labour, etc., and submit the tender or quotation accordingly.

Illustrations

Illustration 1:

Prepare the cost sheet to show the total cost of production and cost per unit of goods manufactured by a company for the month of july 2012. Also find out the cost of sales.

Stock of raw materials 1-7-2012	3,000
Raw materials purchased	28,000
Stock of raw materials 31-7-2012	4,500
Manufacturing wages	7,000
Depreciation of plant	1,500
Loss o n sale of a part of plant	300
Factory rent and rates	3,000
Office rent	500
General expenses	400
Discount on sales	300
Advertisement expenses to be fully charged	600
Income-tax paid	2,000

The number of units produced during july, 2012 was 3,000.

The stock of finished goods was 200 and 400 units on 1-7-2012 and 31-7-202 respectively. The total cost of units on hand on 1-7-2012 was Rs.2,800. All these have been sold during the month.

Output 3,000 units.

Cost sheet for the year ended 31-7-2012

Particulars		Total Cost Rs.	Per Unitcost Rs.
Raw materials consumed			
Opening stock	3,000		
Add purchases	28,000		
	31,000		
Less closing stock	4,500	26,500	8.83

Direct wages		7,000	2.33
Prime cost		33,500	11.16
Factory overheads:			
Depreciation	1,500		
Factory rent	3,000	4,500	1.50
Factory cost		38,000	12.66
Office and administrative			
Overheads:			
Office rent	500		
General expenses	400	900	0.30
Cost of production		38,900	12.96
Statement of cost of sales			
Cost of production		38,900	
Add: opening stock of			
Finished goods		2,800	
		41,700	
Less: closing stock of finished			
Goods (400 x rs.12.96)		5,184	
Cost of production of goods sold		36,516	
Add: selling and distribution overhead:			
Discount on sales	300		
Advertisement expenses	600	900	
Cost of sales		37,416	

Illustration 2:

From the following particulars, prepare a cost sheet for the year ending 31-12-2011.

Opening stock of raw materials (1-1-2011)	50,000
Purchases of raw materials	1,60,000
Closing stock of raw materials (31-12-2011)	80,000

Wages - productive	1,50,000
general	20,000
Chargeable expenses	40,000
Rent, rates and taxes - factory	10,000
Rent, rates and taxes - office	1,000
Depreciation on plant and machinery	3,000
Salary - office	5,000
Salary - travellers	4,000
Printing and stationery	1,000
Office cleaning and lighting	800
Repairs and renewals (factory)	6,400
Other factory expenses	5,000
Management expenses (including managing Director's fees)	24,000
Travelling expenses of salesmen	2,200
Showroom expenses and samples	2,000
Carriage and freight - outwards	2,000
Carriage and freight - inwards	9,000
Octroi on purchases	1,000
Advertisement	30,000
Sales	4,60,000

Management expenses should be allocated in the ratio of 2:1:3 on factory, office and sales departments.

Solution:

Statement of cost and profit for 2011

	Rupees	Rupees
Materials consumed		
Opening stock	50,000	
Add purchases	1,60,000	
Add carriages freight inwards	9,000	
Add octroi on purchases	1,000	
	2,20,000	
Less closing stock	80,000	
Cost of materials used	1,40,000	
Productive wages	1,50,000	
Chargeable expenses	40,000	
Prime cost	3,30,000	

Factory expenses		
General wages	20,000	
Rent, rates and taxes	10,000	
Depreciation on plant and Machinery	3,000	
Repairs and renewals	6,400	
Other factory expenses	5,000	
Management expenses: 1/6 of Rs.24,000	8,000	52,400
Factory cost		3,82,400
Administrative expenses		
Rent, rates and taxes	1,000	
Salary	5,000	
Printing and stationery	1,000	
Cleaning and lighting	800	
Management expenses:1/6 of Rs.24,000	4,000	11,800
Cost of production		3,94,200
Selling and distribution expenses		
Advertising	4,000	
Show-room expenses and samples	2,000	
Traveller's salary	4,000	
Salesmen's travelling expense	2,200	
Carriage outwards and freight	2,000	
Management expenses: 3/6 of Rs.24,000	12,000	26,200
Cost of sales		4,20,400
Sales		4,60,000
Profit		39,600

Illustration 3:

the following particulars relate to a company for a period of Three months:

Raw materials (1-1-2012)	55,000
Raw materials (31-3-2012)	35,000
Factory wages	80,000
Materials purchased	60,000
Sales	1,54,000
Indirect expenses	10,000
Stock of finished goods (1-1-2012)	NIL
Stock of finished goods (31-3-2012)	30,000

No. Of units produced during the period was 2,000.

Prepare a statement of cost for the period and compute the price to be quoted for 500 units in order to realise the same profit as for the period under review, assuming no alternation in wages and cost of materials.

Solution:

Statement of cost for the period ending 31-3-2012

Output 2,000 Units

Particulars	Amount Rs.	Rs.
Opening stock of raw materials	55,000	
Add: purchases	60,000	
	1,15,000	
Less: closing stock of raw materials	35,000	
Raw materials consumed	80,000	
Factory wages		
	80,000	
Prime cost	1,60,000	
Indirect expenses	10,000	
Cost of production	1,70,000	
Less: closing stock of finished goods	30,000	

Cost of goods sold 1,40,000

Profit (14,000 x 100 / 1,40,000) = 10% of cost 14,000

Sales 1,54,000

Tender statement showing quotations for 500 units

Particulars	Amount Rupees
Materials consumed (80,000 x 500 / 2,000)	20,000
Wages (80,000 x 500 / 2,000)	20,000
Prime cost	40,000
Add: indirect expenses (10,000 x 500 / 2,000)	2,500
Cost of production	42,500
Add: profit (10% of cost of production)	4,250
Price to be quoted	46,750

POSSIBLE QUESTIONS

UNIT I

PART B

1. Define Management accounting
2. Write any two importance of management accounting?
3. Give the meaning for the term cost accounting?
4. List out the functions of management accounting?
5. Write any two advantages of management accounting?
6. Draw a chart showing the classification of accounting?
7. What is meant by financial accounting?
8. Give any two limitations of management accounting?
9. Write the relationship between management accounting and cost accounting?
10. Distinguish between management accounting and financial accounting?
11. Give the relationship between management accounting and financial accounting?
12. What is meant by cost centre?
13. Distinguish between management accounting and cost accounting?
14. List out the features of management accounting?
15. Write the objectives of management accounting?

***CIA - 3 X 2 = 6 (ANSWER ALL THE QUESTIONS)**
****ESE - 5 X 2 = 10 (ANSWER ALL THE QUESTIONS)**

PART C

1. Explain the concept management accounting and also discuss the features of management accounting in detail?
2. Define Management accounting. Explain the functional areas of management accounting?
3. "Management accounting helps in decision making of a concern" Elaborate
4. Discuss the objectives, advantages and limitations of management accounting?
5. Explain the relationship between Financial Accounting, Cost Accounting and Management Accounting in detail?
6. Distinguish between Financial Accounting, Cost Accounting and Management Accounting?
7. Define the term costing and explain its nature and scope?
8. Define cost accounting. How does it differ from management accounting and financial accounting?
9. Determine the various types of costs?
10. Enumerate the term elements of cost?
11. Distinguish between 'Management Accounting' and 'Financial Accounting'. How does management accounting help in decision-making?
12. "Costing is an aid to the management" - Discuss.
13. Calculate Prime Cost, Factory Cost, Cost of Production, Cost of Sales and profit from the following particulars:

	Rs.		Rs.
Direct Materials	1,00,000	Consumable stores	2,500
Direct Wages	30,000	Manager's Salary	5,000
Wages of Foreman	2,500	Directors' fees	1,250
Electric power	500	Office Stationery	500
Lighting: Factory	1,500	Telephone Charges	125
Office	500	Postage and Telegrams	250
Storekeeper's wages	1,000	Salesmen's salary	1,250

Oil and water	500	Travelling expenses	500
Rent: Factory	5,000	Advertising	1,250
Office	2,500	Warehouse charges	500
Repairs and Renewals:		Sales	1,89,500
Factory plant	3,500	Carriage outward	375
Transfer to Reserves	1,000	Dividend	2,000
Discount on shares written off	500		
Depreciation: Factory Plant	500		
Office Premises	1,250		

14.The following extract of costing information relates to commodity 'A' for the half year ending 31st December, 2015

	Rs.		**Rs.**
Purchases of Raw Materials	1,20,000	**Stock (31st Dec., 2015) :**	22,240
Works Overheads	48,000	Raw Materials	32,000
Direct Wages	1,00,000	Finished Products (2,000 tons)	4,800
Carriage on Purchases	1,440	Work-in-Progress	4,800
Stock (1st July, 2015) :			
Raw Materials	20,000	Work-in-Progress (31st Dec., 2015)	16,000
Finished Products (1,000 tons)	16,000	Sales – Finished Products	3,00,000

Selling and distribution overheads are Re. 1 per ton sold. 16,000 tons of commodities were produced during the period.

You are to ascertain (i) cost of raw materials used (ii) Cost of output for the period (iii) cost of sales (iv) Net profit for the period (v) Net profit per ton of the commodity

***CIA - 3 X 8 = 24 (EITHER OR TYPE)**
****ESE - 5 X6 = 30 (EITHER OR TYPE)**

UNIT – II

Cost Volume Profit Analysis - Contribution - Profit Volume Ratio - Margin of safety - Cost Break-even Point - Composite Break-even Point - Cash Break-even Point - Key Factor - Break-even Analysis - Relevant Costs - Decision Making - Pricing - Product Profitability - Make or Buy - Exploring new markets - Export Order - Sell or Process Further - Shut down Vs. Continue

MARGINAL COSTING

The costs that vary with a decision should only be included in decision analysis. For many decisions that involve relatively small variations from existing practice and/or are for relatively limited periods of time, fixed costs are not relevant to the decision. This is because either fixed costs tend to be impossible to alter in the short term or managers are reluctant to alter them in the short term. Marginal costing distinguishes between fixed costs and variable costs as convention ally classified. The marginal cost of a product –"is its variable cost". This is normally taken to be; direct labor, direct material, direct expenses and the variable part of overheads.

Definition of marginal costing

Marginal costing is formally defined as:

'the accounting system in which variable costs are charged to cost units and the fixed costs of the period are written-off in full against the aggregate contribution. Its special value is in decision making'. The term 'contribution' mentioned in the formal definition is the term given to the difference between Sales and Marginal cost. Thus

MARGINAL COST = VARIABLE COST DIRECT LABOUR
+
DIRECT MATERIAL
+
DIRECT EXPENSE
+
VARIABLE OVERHEADS
CONTRIBUTION SALES - MARGINAL COST

Theory of Marginal Costing

The theory of marginal costing as set out is as follows:

In relation to a given volume of output, additional output can normally be obtained at less than proportionate cost because within limits, the aggregate of certain items of cost will tend to remain fixed and only the aggregate of the remainder will tend to rise

proportionately with an increase in output. Conversely, a decrease in the volume of output will normally be accompanied by less than proportionate fall in the aggregate cost.

The ascertainment of marginal cost is based on the classification and segregation of cost into fixed and variable cost. In order to understand the marginal costing technique, it is essential to understand the meaning of marginal cost.

Marginal cost means the cost of the marginal or last unit produced. It is also defined as the cost of one more or one less unit produced besides existing level of production. In this connection, a unit may mean a single commodity, a dozen, a gross or any other measure of goods.

The marginal cost varies directly with the volume of production and marginal cost per unit remains the same. It consists of prime cost, i.e. cost of direct materials, direct labor and all variable overheads. It does not contain any element of fixed cost which is kept separate under marginal cost technique.

Marginal costing may be defined as the technique of presenting cost data wherein variable costs and fixed costs are shown separately for managerial decision-making. It should be clearly understood that marginal costing is not a method of costing like process costing or job costing.

Rather it is simply a method or technique of the analysis of cost information for the guidance of management which tries to find out an effect on profit due to changes in the volume of output. Variable costing is another name of marginal costing. Marginal costing technique has given birth to a very useful concept of contribution where contribution is given by: Sales revenue less variable cost (marginal cost)

Contribution may be defined as the profit before the recovery of fixed costs. Thus, contribution goes toward the recovery of fixed cost and profit, and is equal to fixed cost plus profit (C = F + P).In case a firm neither makes profit nor suffers loss, contribution will be just equal to fixed cost (C = F). This is known as breakeven point.

The concept of contribution is very useful in marginal costing. It has a fixed relation with sales. The proportion of contribution to sales is known as P/V ratio which remains the same under given conditions of production and sales.

The principles of marginal costing

The principles of marginal costing are as follows:

a) For any given period of time, fixed costs will be the same, for any volume of sales and production (provided that the level of activity is within the 'relevant range'). Therefore, by selling an extra item of product or service the following will happen.

Revenue will increase by the sales value of the item sold.

Costs will increase by the variable cost per unit.

Profit will increase by the amount of contribution earned from the extra item.

b) Similarly, if the volume of sales falls by one item, the profit will fall by the amount of contribution earned from the item.

c) Profit measurement should therefore be based on an analysis of total contribution. Since fixed costs relate to a period of time, and do not change with increases or decreases in sales volume, it is misleading to charge units of sale with a share of fixed costs.

d) When a unit of product is made, the extra costs incurred in its manufacture are the variable production costs. Fixed costs are unaffected, and no extra fixed costs are incurred when output is increased.

Features of Marginal Costing

The main features of marginal costing are as follows:

1. Cost Classification

The marginal costing technique makes a sharp distinction between variable costs and fixed costs. It is the variable cost on the basis of which production and sales policies are designed by a firm following the marginal costing technique.

2. Stock/Inventory Valuation

Under marginal costing, inventory/stock for profit measurement is valued at marginal cost. It is in sharp contrast to the total unit cost under absorption costing method.

3. Marginal Contribution

Marginal costing technique makes use of marginal contribution for marking various decisions. Marginal contribution is the difference between sales and marginal cost. It forms the basis for judging the profitability of different products or departments.

Utility of Marginal Costing:

Marginal costing is a special technique used for managerial decision making. The technique of marginal costing is used to provide a basis for the interpretation of cost data to measure the profitability of different products, processes and cost centers in the course of decision making. It can, therefore, be used in conjunction with the different methods of costing such as job costing, process costing etc., or even with other techniques such as standard costing or budgetary control. The technique of marginal costing has become more relevant and useful in today's business environment of globalization. This is because in marginal costing the cost of a product or a service is computed only on the basis of variable costs. Global companies want to take advantage of cheap labor in developing or backward countries.

Marginal costing techniques help management in several ways in the present day context of global business environment. These are listed below:

Volume of production: Marginal costing helps in determining the level of output which is most profitable for running concern. The production capacity, therefore, can be utilized to the maximum possible extent. It helps in determining the most profitable relationship between cost, price, and volume in the business which helps the management in fixing best selling prices for its products.

Selecting product lines: The marginal costing technique helps in determining the most profitable production line by comparing the profitability of different products.

Produce or procure: The decision whether a particular product should be manufactured in the factory or procured from outside source can be taken comparing the price at which it can be had from outside. In case the procurement price is lower than the marginal cost of production, it will be advisable to procure the product from outside source.

Method of manufacturing: If a product can be manufactured by two or more methods, ascertaining the marginal cost of manufacturing the product by each method will be helpful in deciding as to which method should be adopted.

Shut down or continue: marginal costing, particularly in the times of depression, helps in deciding whether the production in the plant should be suspended temporarily or continued in spite of low demand for the firm's products.

Advantages and Disadvantages of Marginal Costing

Technique Advantages

1. Marginal costing is simple to understand.

2. By not charging fixed overhead to cost of production, the effect of varying charges per unit is avoided.

3. It prevents the illogical carry forward in stock valuation of some proportion of current year's fixed overhead.

4. The effects of alternative sales or production policies can be more readily available and assessed, and decisions taken would yield the maximum return to business.

5. It eliminates large balances left in overhead control accounts which indicate the difficulty of ascertaining an accurate overhead recovery rate.

6. Practical cost control is greatly facilitated. By avoiding arbitrary allocation of fixed overhead, efforts can be concentrated on maintaining a uniform and consistent marginal cost. It is useful to various levels of management.

7. It helps in short-term profit planning by breakeven and profitability analysis, both in terms of quantity and graphs. Comparative profitability and performance between two or more products and divisions can easily be assessed and brought to the notice of management for decision making.

Disadvantages

1. The separation of costs into fixed and variable is difficult and sometimes gives misleading results.
2. Normal costing systems also apply overhead under normal operating volume and this shows that no advantage is gained by marginal costing.
3. Under marginal costing, stocks and work in progress are understated. The exclusion of fixed costs from inventories affect profit and true and fair view of financial affairs of an organization may not be clearly transparent.
4. Volume variance in standard costing also discloses the effect of fluctuating output on fixed overhead. Marginal cost data becomes unrealistic in case of highly fluctuating levels of production, e.g., in case of seasonal factories.
5. Application of fixed overhead depends on estimates and not on the actuals and as such there may be under or over absorption of the same.
6. Control affected by means of budgetary control is also accepted by many. In order to know the net profit, we should not be satisfied with contribution and hence, fixed overhead is also a valuable item. A system which ignores fixed costs is less effective since a major portion of fixed cost is not taken care of under marginal costing.
7. In practice, sales price, fixed cost and variable cost per unit may vary. Thus, the assumptions underlying the theory of marginal costing sometimes becomes unrealistic.

ABSORPTION COSTING

Definition of Absorption Costing:

Absorption costing is a method of calculating the full cost of a product. As a result, absorption costing is also known as full costing. Under absorption costing, the entire cost of production is apportioned to products. These costs could be direct costs or indirect costs (variable and fixed overheads). Fixed overheads are usually applied based on a predetermined overhead absorption rate. One or more overhead absorption rates could be employed.

Difference Between Marginal Costing and Absorption Costing

There are two alternative approaches for the valuation of inventory; they are Marginal Costing and Absorption Costing. **Marginal Costing** excludes fixed cost of production, whereas **Absorption Costing** includes the same. There are instances, when people have doubts regarding which costing method will be better for valuing the inventory whether the former or the latter one. So we have compiled a detailed article, which might be helpful for you to know the differences between Marginal Costing and Absorption Costing.

Key Differences Between Marginal Costing and Absorption Costing

The following are the major differences between marginal costing and absorption costing.

1. The costing method in which variable cost is apportioned exclusively, to the products is known as Marginal Costing. Absorption Costing is a costing system in which all the costs are absorbed and apportioned to products.
2. In Marginal Costing, Product related costs will include only variable cost while in the case of Absorption costing, fixed cost is also included in product related cost apart from variable cost.
3. Marginal Costing divides overheads into two broad categories, i.e. Fixed Overheads and Variable Overheads. Look at the other term Absorption costing, which classifies overheads in the following three categories Production, Administration and Selling & Distribution.
4. In marginal costing profit can be ascertained through the help of Profit Volume Ratio [(Contribution / Sales) * 100]. On the other hand, Net Profit shows the profit in case of Absorption Costing.
5. In Marginal Costing variances in the opening and closing stock will not influence the per unit cost. Unlike Absorption Costing, where the variances between the stock at the beginning and the end will show its effect by increasing/decreasing per unit cost.
6. In marginal costing, the cost data is presented to outline total cost of each product. On the contrary, in absorption costing, the cost data is presented in traditional way, net profit of each product is ascertained after deducting fixed cost along with their variable cost.

Cost-Volume-Profit Analysis.

Cost-volume-profit(CVP) analysis is used to determine how changes incosts and volume affect a company's operating income and net income. In performing this analysis, there are several assumptions made, including: Sales price per unit is constant.

A critical part of CVP analysis is the point where total revenues equal total costs (both fixed and variable costs). At this break-even point, a company will experience no income or loss. This break-even point can be an initial examination that precedes more detailed CVP analysis.

CVP analysis employs the same basic assumptions as in breakeven analysis. The assumptions underlying CVP analysis are:

The behavior of both costs and revenues are linear throughout the relevant range of activity. (This assumption precludes the concept of volume discounts on either purchased materials or sales.)

Costs can be classified accurately as either fixed or variable.

Changes in activity are the only factors that affect costs.

All units produced are sold (there is no ending finished goods inventory).

When a company sells more than one type of product, the product mix (the ratio of each product to total sales) will remain constant.

The components of CVP analysis are:

Level or volume of activity

Unit selling prices

Variable cost per unit

Total fixed costs

Cost-Volume-Profit Analysis: Subject Matter, Factors, Techniques and Objectives

Let us make an in-depth study of the subject matter, factors, techniques and objectives of cost-volume-profit analysis.

Subject Matter:

The Cost-Volume-Profit (CVP) analysis helps management in finding out the relationship of costs and revenues to output.

The aim of an undertaking is to earn profit. Profit depends upon a large number of factors, the most important of which are the cost of manufacture, selling price, and the volume of sales effected.

The three factors cost, volume and profit are interdependent—profit depends upon sales, selling price to a large extent depends upon cost, volume of sales depends upon the volume of production which, in turn, is related to costs. Cost, again, is the resultant of the operation of a number of varying factors.

Factors Affecting Cost-Volume-Profit Analysis:

Such factors affecting cost are:

(i) Volume of production,

(ii) Product mix,

(iii) Internal efficiency,

iv) Methods of production, and

(v) Size of plant etc.

Of all these, volume is perhaps the largest single factor which influence cost. Often, outside factors, over which the management has no control, necessitate changes in volume, and costs do not always vary in proportion to changes in levels of output. This type of situation poses special problems for the management.

Thus, cost-volume-profit analysis furnishes a complete picture of the profit structure which enables the management to distinguish between the effect of sales volume fluctuations and the results of selling price or cost changes upon profits.

This analysis helps in understanding the behaviour of profits in relation to Output. Fixed costs do not change with production, the amount per unit declines as output rises. On the other hand, variable costs react proportionately with production changes.

Technique of Cost-Volume-Profit Analysis:

The amount per unit is constant with output; under normal circumstances cost-volume-profit analysis uses the technique of:

(i) Break-even analysis, and

(ii) Profit-Volume (P/V) analysis.

Objectives of Cost-Volume-Profit Analysis:

The objectives of cost-volume-profit analysis are:

(i) Cost-volume-profit analysis is very much useful for profit planning, cost control and decision-making.

(ii) It is useful in setting up flexible budgets which indicate cost and profit at various levels of activities.

(iii) It helps to determine the maximum sales volume required to avoid losses.

(iv) It helps to determine the sales volume at which the profit goal of the firm will be achieved.

(v) It helps management to find the most profitable combination of costs and volume.

(vi) It helps in evaluating the effect of change in selling price on profitability.

(vii)It provides a means for assessing the profitability of each product so that the optimum product mix may be determined.

(viii) The study of cost-volume relationship is necessary in order to know the amount of overhead costs which could be charged to product costs at various levels of operation.

(ix) It helps in evaluating performance of an organisation for the purpose of control.

Difference Between Profit and Contribution

Profit

All organisations that are run with the objective of making a profit will complete a profit and loss report at the end of each financial period. This will show the revenue they have received, the amount that has been paid out in expenses, and the remaining amount of profit that has been made.

The profit and loss report takes into consideration all types of sales for all products and services. It also takes into account all the expenses of running the business, including both variable and fixed costs.

Variable costs are those that vary with the amount of output by the business. This includes the wages of staff involved in production, as well as the materials used to make products.

Fixed costs are those that remain the same regardless of the amount of product that is made. This includes things like rent, rates, salaries, fuel, and depreciation.

Contribution

As well as overall profit, organisations are often interested in the of contribution of specific products towards paying fixed costs and making a profit.

It's possible to calculate contribution per unit, or for the total number of units that are expected to sell. To calculate contribution per unit, you use the sales price per unit, minus variable cost per unit .

Application of Marginal Costing: 4 Purposes

Read this article to learn about the following four purposes for application of marginal costing, i.e., (a) Profit Planning, (b) Level of Activity Planning, (c) Profitable Mix of Sales, (d) Marginal Costing and Pricing.

(a) Profit Planning:

A business concern exists with the objective of making profits, and profits are the yardstick of its success. Profit planning is therefore a part of operations planning. It is the basis of planning cash, capital expenditure, and pricing.

If growth and survival of a business are to be ensured, planning becomes an absolute necessity. Marginal costing assists profit planning through computation of contribution ratio.

It enables planning of future operations in such a way as to either maximize profits or maintain specified levels of profits. Normally, profits are affected by several factors such as the volume of sales, marginal cost per unit, total fixed costs, selling price, sales mix, etc. Hence, management can achieve their profit goals by varying one or more of the above variables.

Basic marginal costing equations, which are useful in profit planning, are as follows:

Profit/Volume Ratio [P/V Ratio]:

This is the ratio of contribution to sales. Symbolically, it is expressed as follows:

$$P/V\ Ratio = \frac{Contribution\ (C)}{Sales\ (S)} \times 100$$

From the above equation, we may derive the following equations:

$$Sales = \frac{Contribution}{\frac{P}{V}\ ratio}$$

Break-Even Point [BEP]:

BEP may be defined as that level or point of sales volume at which the total revenue is equal to total costs. It is a no-profit, no-loss point.

It may be expressed as follows:

$$\text{BEP (in rupees)} = \frac{Fixed\ cost}{\frac{P}{V}\ ratio}$$

$$\text{BEP (in units)} = \frac{Fixed\ cost}{Contribution\ per\ unit}$$

Margin of Safety [MS]:

MS may be defined as the excess of actual sales or production at the selected activity over break-even sales or production.

Margin of Safety = Actual sales – Break-even sales or point It may be calculated as follows:

$$\text{Margin of Safety (in rupees)} = \frac{\text{Profit (P)}}{\text{P/V Ratio}}$$

$$\text{Margin of Safety (in units)} = \frac{\text{Profit}}{\text{Contribution per unit}}$$

Margin of safety may also be expressed as a percentage on actual sales as follows:

$$\text{Margin of Safety Sales Ratio} = \frac{\text{Margin of Safety (Sales)}}{\text{Actual Sales at Selected activity}} \times 100$$

Example 1:

From the following information, calculate BEP and determine the net profit if sales are 25% above BEP.

Margin of Safety [MS]: MS may be defined as the excess of actual sales or production at the selected activity over break-even sales or production.

Margin of Safety = Actual sales – Break–even sales or point

It may be calculated as follows:

$$\text{Margin of Safety (in rupees)} = \frac{\text{Profit (P)}}{\text{P/V Ratio}}$$

$$\text{Margin of Safety (in units)} = \frac{\text{Profit}}{\text{Contribution per unit}}$$

Margin of safety may also be expressed as a percentage on actual sales as follows:

$$\text{Margin of Safety Sales Ratio} = \frac{\text{Margin of Safety (Sales)}}{\text{Actual Sales at Selected activity}} \times 100$$

Solution:

Marginal Cost Statement

	Rs.	Rs.
Selling price per unit:		50.00
Less: Marginal cost per unit		
Materials	20.00	
Wages	10.00	
Variable overheads	7.50	37.50
Contribution		12.50

$$\text{P/V ratio} = \frac{C}{S} \times 100 = \frac{12.50}{50} \times 100 = 25\%$$

$$\text{BEP} = \frac{F}{\text{P/V ratio}} = \frac{\text{Rs.50,000}}{25} \times 100 = \text{Rs.2,00,000}$$

BEP	=	Rs.2,00,000
25% of BEP	=	Rs.50,000
Total Sales	=	Rs.2,50,000
Contribution	=	Sales × P/V ratio
Contribution at Rs.2,50,000 sales	=	Rs.2,50,000 × 25%
Contribution	=	Rs.62,500
Less: Fixed cost	=	Rs.50,000
Net Profit	=	Rs.12,500

(b) Level of Activity Planning:

Business concerns may have plans to expand or contract the level of activities depending upon the conditions prevailing in the market. Such planning is to be considered before the events overtake the business. Marginal costing is very useful for taking such decisions by enabling management to compare the contribution at different levels of activities.

Example 2:

Following is the Cost Structure of JB Limited:

	Level of Activity		
	60%	70%	80%
Output (in unit)	2,400	2,800	3,200
Costs (Rs.)			
Materials	48,000	56,000	64,000
Wages	14,400	16,800	19,200
Factory overheads	25,600	27,200	28,800
Factory cost	88,000	1,00,000	1,12,000

The factory is considering an increase of production to 90% level of activity. No increase in fixed overheads is expected at this level. The management requires a statement showing all details of factory costs at 90% level of activity.

Solution:

Selection of Sales Alternatives

	Products		
	Z Rs.	Y Rs.	Total Rs.
(a) 450 units of Z and 300 units of Y contribution (450 × Rs.40) + (300 × Rs.90)	18,000	27,000	45,000
Less: Fixed overheads			20,000
Profit			25,000
(b) 900 units of Z only			
contribution (900 × Rs.40)	36,000		36,000

Note:

Factory overheads increase by Rs. 1,600 at each level of activity. Therefore, variable overheads must be Rs. 1,600/400 units = Rs. 4 per unit. At 80% level of activity, factory overheads are Rs. 28,000, of which variable cost are Rs.12,800 (Rs.4 x 3,200), resulting in fixed overheads of Rs. 16,000 (Rs.28,800 – 12,800)

(c) Profitable Mix of Sales:

A company, which has a variety of product lines, can employ marginal costing in order to determine the most profitable sales mix from a number of selected alternatives.

Example 3:

The directors of AB Ltd. are considering the sales budget for the next budget period.

The following information has been made available from the cost records:

	Product Z (per unit)	Product Y (per unit)
Direct materials	Rs.40	Rs.50
Selling price	Rs.120	Rs.200
Direct wages @ Rs.2 per hour	10 hours	15 hours

Variable overheads: 100% of direct wages.

Fixed overheads: Rs.20,000 p.a.

You are required to present to the management a statement showing the marginal cost of each product, and to recommend which of the following sales mix should be adopted:

(a) 450 units of Z and 300 units of Y
(b) 900 units of Z only
(c) 600 units of Y only
(d) 600 units of Z and 200 units of Y

Solution:

Marginal cost Statement

	Per unit			
	Product Z		Product Y	
	Rs.	Rs.	Rs.	Rs.
Selling Price		120		200
Less: Marginal cost				
Direct Materials	40		50	
Direct wages	20		30	
Variable overheads	20	80	30	110
Contribution		40		90

Selection of Sales Alternatives

	Products		
	Z Rs.	Y Rs.	Total Rs.
(a) 450 units of Z and 300 units of Y contribution (450 × Rs.40) + (300 × Rs.90)	18,000	27,000	45,000
Less: Fixed overheads			20,000
Profit			25,000
(b) 900 units of Z only			
contribution (900 × Rs.40)	36,000		36,000
Less: Fixed cost			20,000
Profit:			16,000
(c) 600 units of Y only			
contribution (600 × Rs.90)		54,000	54,000
Less: Fixed cost			20,000
Profit			34,000
(d) 600 units of Z and 200 units of Y			
Contribution (600 × Rs.40) + (200 × Rs.90)	24,000	18,000	42,000
Less: Fixed cost			20,000
Profit			22,000

Thus, alternative (c) is the one recommended.

(d) Marginal Costing and Pricing:

Pricing is a very difficult problem and the basic problem involved in pricing is the matching of demand and supply. Marginal costing is sometimes used to determine prices, a simple and familiar example being the railway ticket.

The normal fare will usually be more than the charge collected for excursion fare [concession fare], for the normal fare is calculated to cover all the railway costs including fixed overheads, which is a considerable item; whereas the excursion fare will probably cover only marginal cost (which is relatively small) and some contribution towards profit. The marginal costing technique can help management in fixing prices in such special circumstances as

1. A trade depression in the industry;

2. Spare capacity in the factory;

3. A seasonal fluctuation in demand; and

4. When it is desired to obtain a special contract.

Example 4:

M. Ltd manufactures and sells light engineering goods. Due to competitions, the company proposes to reduce its selling price. If the present level of profit is to be maintained, indicate the number of units to be sold if the proposed reduction in selling price is 5%, 10% and 15%

The following additional information is available:

	Rs.	Rs.
Present sales (60,000 units)	-	1,50,000
Variable cost (60,000 units)	90,000	
Fixed cost	35,000	1,25,000
Net Profit		25,000

Solution:

Marginal Cost Statement

	Present price	No.of units: 60,000 Price Reductions		
	Rs.	5% Rs.	10% Rs.	15% Rs.
Sales	1,50,000	1,42,500	1,35,000	1,27,500
Less: Marginal cost	90,000	90,000	90,000	90,000
Contribution	60,000	52,500	45,000	37,500
Less: Fixed cost	35,000	35,000	35,000	35,000
Profit	25,000	17,500	10,000	2,500
Contribution per unit	Re.1.00	Re.0.875	Re 0.75	Re.0.625

Profit to be maintained = Rs.25,000

Contribution to be earned = Profit to be earned + Fixed cost

= Rs.25,000 + Rs.35,000 = Rs.60,000

$$\text{reduction} = \frac{\text{Total contribution to be earned}}{\text{Contribution per unit}}$$

Hence,

$$\text{At 5\% Reduction} = \frac{\text{Rs.60,000}}{\text{Rs.0.875}} = 68{,}572 \text{ units (app)}$$

$$\text{At 10\% Reduction} = \frac{\text{Rs.60,000}}{\text{Rs.0.75}} = 80{,}000 \text{ units}$$

$$\text{At 15\% Reduction} = \frac{\text{Rs.60,000}}{\text{Rs.0.625}} = 96{,}000 \text{ units}$$

The Make or Buy Decision

Outsourcing is closely related to make or buy decision. The corporations made decisions on what to make internally and what to buy from outside in order to maximize the profit margins.

As a result of this, the organizational functions were divided into segments and some of those functions were outsourced to expert companies, who can do the same job for much less cost.

Make or buy decision is always a valid concept in business. No organization should attempt to make something by their own, when they stand the opportunity to buy the same for much less price.

This is why most of the electronic items manufactured and software systems developed in the Asia, on behalf of the organizations in the USA and Europe.

When you are supposed to make a make-or-buy decision, there are four numbers you need to be aware of. Your decision will be based on the values of these four numbers. Let's have a look at the numbers now. They are quite self-explanatory.

The volume

The fixed cost of making

Per-unit direct cost when making

Per-unit cost when buying

Now, there are two formulas that use the above numbers. They are 'Cost to Buy' and 'Cost to Make'. The higher value loses and the decision maker can go ahead with the less costly solution.

Cost to Buy (CTB) = Volume x Per-unit cost when buying

Cost to Make (CTM) = Fixed costs + (Per-unit direct cost x volume)

Reasons for Making

There are number of reasons a company would consider when it comes to making in-house. Following are a few:

Cost concerns

Desire to expand the manufacturing focus

Need of direct control over the product

Intellectual property concerns

Quality control concerns

Supplier unreliability

Lack of competent suppliers

Volume too small to get a supplier attracted

Reduction of logistic costs (shipping etc.)

To maintain a backup source

Political and environment reasons

Organizational pride

Reasons for Buying

Following are some of the reasons companies may consider when it comes to buying from a supplier:

Lack of technical experience

Supplier's expertise on the technical areas and the domain

Cost considerations

Need of small volume

Insufficient capacity to produce in-house

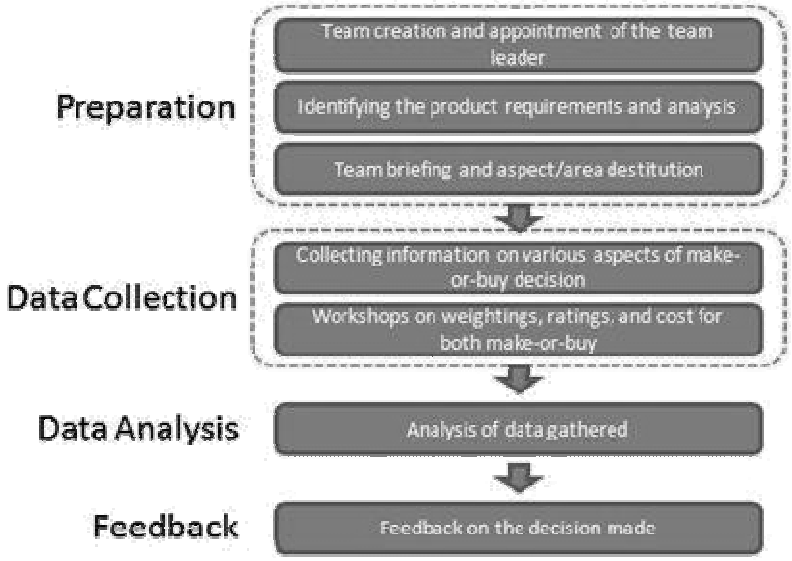
Brand preferences

Strategic partnerships

The Process

The make or buy decision can be in many scales. If the decision is small in nature and has less impact on the business, then even one person can make the decision. The person can consider the pros and cons between making and buying and finally arrive at a decision.

When it comes to larger and high impact decisions, usually organizations follow a standard method to arrive at a decision. This method can be divided into four main stages as below.



1. Preparation

   Team creation and appointment of the team leader

   Identifying the product requirements and analysis

   Team briefing and aspect/area destitution

2. Data Collection

   Collecting information on various aspects of make-or-buy decision

   Workshops on weightings, ratings, and cost for both make-or-buy

3. Data Analysis

   Analysis of data gathered

4. Feedback

   Feedback on the decision made

By following the above structured process, the organization can make an informed decision on make-or-buy. Although this is a standard process for making the make-or-buy decision, the organizations can have their own varieties.

Make-or-buy decision is one of the key techniques for management practice. Due to the global outsourcing, make-or-buy decision making has become popular and frequent.

Since the manufacturing and services industries have been diversified across the globe, there are a number of suppliers offering products and services for a fraction of the original price. This has enhanced the global product and service markets by giving the consumer the eventual advantage.

If you make a make-or-buy decision that can create a high impact, always use a process for doing that. When such a process is followed, the activities are transparent and the decisions are made for the best interest of the company.

Break-even point analysis

Explanation of break-even point:

The point at which total of fixed and variable costs of a business becomes equal to its total revenue is known as **break-even point (BEP)**. At this point, a business neither earns any profit nor suffers any loss. Break-even point is therefore also known as no-profit, no-loss point or zero profit point. Calculation of break-even point is important for every business because it tells business owners and managers how much sales are needed to cover all fixed as well as variable expenses of the business or the sales volume after which the business will start generating profit. The computation of sales volume required to break-even is known as *break-even analysis*. The concept explained above can also be presented as follows:

When there is a profit:

Revenues > Variable cost + fixed cost

At break-even point (BEP):

Revenues = Variable cost + fixed cost

When there is a loss:

Revenues < Variable cost + fixed cost

After reading this article you will be able to compute the break-even point of a single product company using two popular methods – *equation method* and *contribution margin method*. First we shall compute break-even point using these two methods and then present the information graphically (*preparation of break-even chart*).

Computation of break-even point:

(1). Use of equation method:

The application of equation method facilitates the computation of break-even point both in units and in dollars. As we have already described that the sales are equal to total variable and fixed expenses at break-even point, the equation can therefore be written as follows:

Sp × Q = Ve × Q + Fe

Or

SpQ = VeQ + Fe

Where;

Sp = Sales price per unit.

Q = Number (quantity) of units to be manufactured and sold during the period.

Ve = Variable expenses to manufacture and sell a single unit of product.

Fe = Total fixed expenses for the period.

Notice that the left hand side of the equation represents the total sales in dollars and the right hand side of the equation represents the total cost. If the information about sales price per unit, variable expenses per unit and the total fixed expenses is available, we can solve the equation for 'Q' to find the number of units to break-even. The break-even point in units can then be multiplied by the sales price per unit to calculate the break-even point in dollars. Suppose, for example, you run a manufacturing business that is involved in manufacturing and selling a single product. The annual fixed expenses to run the business are $15,000 and variable expenses are $7.50 per unit. The sale price of your product is $15 per unit. The number of units to be sold to break even can be easily calculated using ***equation method***: Sp × Q = Ve × Q + Fe

15 × Q = 7.5 × Q + 15,000

15 Q = 7.5 Q + 15,000

15Q – 7.5Q = 15,000

7.5Q = 15,000

Q = 15,000 / 7.5

Q = 2,000 units

The break-even point in units is 2,000 units and the break-even point in dollars can be computed as follows:

= (2,000 units) × ($15)

= $30,000

(2). Use of contribution margin method:

The method described above is known as ***equation method of calculating break-even point.*** Some people use another method called ***contribution margin method*** (read about contribution margin and its calculation). Under this method, the total fixed expenses are divided by contribution margin per unit. Consider the following computations: Total fixed expenses / Contribution margin per unit

= 15,000 / 7.5*

= 2,000

units or

= (2,000 units) × ($15)

= $30,000

*$15 – $7.5

A little variation of this method is to divide the total fixed expenses by the contribution margin ratio (CM ratio). Doing so results in break-even point in dollars. It is shown below: Total fixed expenses / Contribution margin ratio

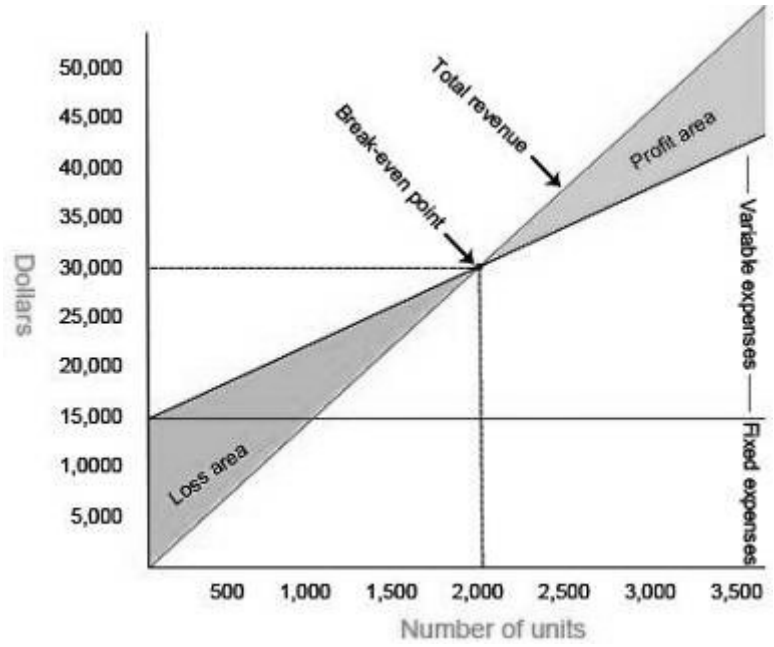
= $15,000 / 0.5*

= $30,000

*($15 – $7.5)/$15

Graphical presentation (Preparation of break-even chart or CVP graph):

The graphical presentation of dollar and unit sales needed to break-even is known as ***break-even chart*** or ***CVP graph***:



Explanation of the graph:

1. The number of units have been presented on the X-axis (horizontally) where as dollars have been presented on Y-axis (vertically).
2. The straight line in red color represents the total annual fixed expenses of $15,000.
3. The blue line represents the total expenses. Notice that the line has a positive or upward slop that indicates the effect of increasing variable expenses with the increase in production.
4. The green line with positive or upward slop indicates that every unit sold increases the total sales revenue.
5. The total revenue line and the total expenses line cross each other. The point at which they cross each other is the *break-even point*. Notice that the total expenses line is above the total revenue line before the point of intersection and below after the point of intersection. It tells us that the business suffers a loss before the point of intersection and makes a profit after this point. The break-even point in the above graph is 2,000 units or $30,000 that agrees with the break-even point computed using equation and contribution margin methods above.
6. The difference between the total expenses line and the total revenue line before the point of intersection (BE point) is the *loss area*. The loss area has been filled with pink color. Notice that this area reduces as the number of units sold increases. It means every additional unit sold before the break-even point reduces the loss.
7. The difference between the total expenses line and the total revenue line after the point of intersection (BE point) is the profit area. The profit area has been filled with green color. Notice that this area increases as the number of units sold increases. It means every additional unit sold after the break-even point increases the profit of the business.

The method of calculating break-even point of a single product company has been discussed in the break-even point analysis article. In this article, I would explain the procedure of calculating break-even point of a multi product company. A multi-product company means a company that sells two or more products.

The procedure of computing break-even point of a multi product company is a little more complicated than that of a single product company.

Formula:

A multi product company can compute its break-even point using the following formula:

$$\text{Break-even point} = \frac{\text{Total fixed expenses}}{\text{Weighted average selling price - Weighted average variable expenses}}$$

Break-Even Analysis (With Solution)

Here is a compilation of top eight problems on break-even analysis with their relevant solutions.

Break-Even Analysis: Problem with Solution # 1.

From the following particulars, calculate:

(i) Break-even point in terms of sales value and in units.

(ii) Number of units that must be sold to earn a profit of Rs. 90,000.

	₹
Fixed Factory Overheads Cost	60,000
Fixed Selling Overheads Cost	12,000
Variable Manufacturing Cost per unit	12
Variable Selling Cost per unit	3
Selling Price per unit	24

Solution:

(i) ***Break-even point*** $= \dfrac{\text{Fixed Cost}}{\text{Selling Price per unit} - \text{Variable Cost per unit}}$

Variable Cost per unit = ₹ 12 + 3 = ₹ 15

Total Fixed Cost = ₹ 60,000 + 12,000 = ₹ 72,000

B.E.P. $= \dfrac{72,000}{24-15} = 8,000$ units

B.E.P. (in sales values) = 8,000 × 24 = ₹ 1,92,000

(ii) ***Number of units that must be sold to earn profit of ₹90,000***

$$= \frac{\text{Fixed Cost} + \text{Profit}}{\text{Selling Price per unit} - \text{Variable Cost per unit}}$$

$$= \frac{72,000+90,000}{24-15} = \frac{1,62,000}{9} = 18,000 \text{ units.}$$

Break-Even Analysis: Problem with Solution # 2.

From the following data, you are required to calculate:

(a) P/V ratio

(b) Break-even sales with the help of P/V ratio.

(c) Sales required to earn a profit of Rs.

4,50,000 Fixed Expenses = Rs. 90,000

Variable Cost per unit:

Direct Material = Rs. 5

Direct Labour = Rs. 2

Direct Overheads = 100% of Direct Labour

Selling Price per unit = Rs. 12.

Solution:

		₹
Selling Price per unit		12
Less : Variable Cost per unit :		
Direct Material	5	
Direct Labour	2	
Direct Overheads	2	
		9
Contribution per unit		3

(a) P/V ratio

$$= \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{3}{12} \times 100 = 25\%$$

(b) Break-even Sales

$$= \frac{\text{Fixed Expenses}}{\text{P/V ratio}}$$

$$= \frac{90,000}{\frac{25}{100}} = \frac{90,000 \times 100}{25} = \text{Rs. } 3,60,000.$$

(c) Sales required to earn a profit of ₹4,50,000

$$= \frac{\text{Fixed Expenses} + \text{Desired Profit}}{\text{P/V ratio}}$$

$$= \frac{90,000 + 4,50,000}{25\%} = \frac{5,40,000}{\frac{25}{100}}$$

$$= \frac{5,40,000 \times 100}{25} = \text{Rs. } 21,60,000$$

Break-Even Analysis: Problem with Solution # 3.

From the following data, you are required to calculate break-even point and net sales value at this point:

	₹
Direct material cost per unit	10
Direct labour cost per unit	5
Fixed overhead	50,000
Variable overheads @ 60% on direct labour	
Selling price per unit	25
Trade discount	4%

If sales are 10% and 25% above the break even volume, determine the net profits.

Solution:

		₹
Selling price per unit		25
Less : Trade discount (25 × 4/100)		1
Net selling price per unit		24
Less : Variable cost per unit	₹	
Direct material	10	
Direct labour	5	
Variable overheads (5 × 60/100)	3	18
Contribution per unit		6

Break-even point (in units) $= \frac{\text{Fixed Cost}}{\text{Contribution Per Unit}}$

$= \frac{50,000}{6} = 8,333$ units

Break - even Point (in sales value) $= \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$

$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$

$= \frac{6}{24} \times 100 = 25\%$

Hence, B.E.P. (in sales value) $= \frac{50,000}{25\%} = 50,000 \times \frac{100}{25}$

$= ₹ 2,00,000$

Profit when sales are 10% above the break even volume

Sales = 2,00,000 + 10% of 2,00,000 = ₹ 2,20,000

Contribution = Sales × P/V Ratio = 2,20,000 × 25/100 = ₹ 55, 000

Contribution = Fixed Cost + Profit

₹ 55,000 = 50,000 + Profit

Profit = **₹ 5,000**

Profit when sales are 25% above the break even volume

Sales = 2,00,000 + 25% of 2,00,000 = ₹ 2,50,000

Contribution = 2,50,000 × 25/100 = ₹ 62,500.

Contribution = Fixed Cost + Profit

62,500 = 50,000 + Profit

Profit = **₹ 12,500**

Break-Even Analysis: Problem with Solution # 4.

From the following particulars, find out the break-even-point:

	₹
Variable Cost per unit	15
Fixed Expenses	54,000
Selling Price per unit	20

What should be the selling price per unit, if the break-even point should be brought down to 6,000 units?

Solution:

Contribution per unit = Selling Price – Variable cost per unit
= ₹ 20 – 15 = ₹ 5

(a) ***B.E.P.*** $= \frac{\text{Fixed Expenses}}{\text{Contribution per unit}}$

$= \frac{54,000}{5} = 10,800$ units

(b) ***What should be the selling price per unit, if the break-even-point should be brought down to 6000 units:***

B.E.P. $= \frac{\text{Fixed Expenses}}{\text{Contribution per unit}}$

Or, $6,000 = \frac{54,000}{\text{Contribution per unit}}$

Or, Contribution per unit $= \frac{54,000}{6,000} = \text{Rs. } 9$

Contribution = S.P. – V.C.

Or, 9 = SP – 15

Or, Selling Price = ₹ 24.

Break-Even Analysis: Problem with Solution # 5.

The fixed costs amount to Rs. 50,000 and the percentage of variable costs to sales is given to be 66 ⅔%.

If 100% capacity sales are Rs. 3,00,000, find out the break-even point and the percentage sales when it occurred. Determine profit at 80% capacity: Solution:

Percentage of Variable Cost to Sales is $66\frac{2}{3}\%$ i.e., $\frac{200}{3}$

$\therefore$ Percentage of Contribution to Sales is $100 - \frac{200}{3} = \frac{100}{3}$

$$\text{P/V ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{100}{3} \times \frac{1}{100} \times 100 = \frac{100}{3} = 33\frac{1}{3}\%$$

$$\text{Break-even Sales} = \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$= \frac{50,000}{33\frac{1}{3}\%} = \frac{50,000}{100} \times 300 = \text{Rs. } 1,50,000.$$

100% Capacity Sales = ₹ 3,00,000

Hence, B.E.P. occurs at $\frac{1,50,000}{3,00,000} \times 100 = 50\%$ capacity.

Profit at 80% Capacity

At 100% Capacity Sales are ₹ 3,00,000

$\therefore$ 80% Capacity Sales $3,00,000 \times \frac{80}{100} = \text{Rs. } 2,40,000$

Total Contribution at 80% capacity $= 2,40,000 \times \frac{100}{3} \times \frac{1}{100}$

= ₹ 80,000

Fixed Expenses = ₹ 50,000

Profit at 80% capacity = ₹ 30,000

Break-Even Analysis: Problem with Solution # 6.

From the following information, ascertain by how much the value of sales must be increased by the company to break-even:

	₹
Sales	3,00,000
Fixed Cost	1,50,000
Variable Cost	2,00,000

Solution:

$$\text{Break-even point} = \frac{\text{Fixed Cost} \times \text{Sales}}{\text{Sales} - \text{Variable Cost}}$$

$$= \frac{1,50,000 \times 3,00,000}{3,00,000 - 2,00,000}$$

$$= \frac{1,50,000 \times 3,00,000}{1,00,000} = \text{Rs. } 4,50,000.$$

Hence, Sales to be increased by the company to break-even are = ₹ 4,50,000 – 3,00,000 = ₹ 1,50,000.

Break-Even Analysis: Problem with Solution # 7.

Calculate:

(i) The amount of fixed expenses.

(ii) The number of units to break-even.

(iii) The number of units to earn a profit of Rs. 40,000.

The selling price per unit can be assumed at Rs. 100.

The company sold in two successive periods 7,000 units and 9,000 units and has incurred a loss of Rs. 10,000 and earned Rs. 10,000 as profit respectively.

Solution:

	Period I	*Period II*
Sales	₹ 7,00,000	₹ 9,00,000
Profit/Loss (—)	(—) ₹ 10,000	₹ 10,000

Thus for an additional sales of ₹ 2,00,000 there is an additional contribution of ₹ 20,000 which has wiped off the loss or ₹ 10,000 of period I and earned a profit of ₹ 10,000 in period II.

$$\text{P/V Ratio} = \frac{\text{Change in Contribution}}{\text{Change in Sales}} \times 100$$

$$= \frac{20,000}{2,00,000} \times 100 = 10\%$$

$$\text{Contribution of Period I} = 7,00,000 \times \frac{10}{100} = \text{Rs. } 70,000$$

Loss of period I (given) = ₹ 10,000

(i) Fixed Cost = ₹ 80,000

Contribution = Fixed Cost ± Profit/Loss

Fixed Cost = Contribution ± Loss/Profit

(ii) Break–Even Point

$$= \frac{\text{Fixed Cost}}{\text{P/V Ratio}}$$

$$= \frac{80,000}{\frac{10}{100}} = \frac{80,000 \times 100}{10} = \text{Rs. } 8,00,000$$

Number of units to break–even

$$= \frac{\text{Break– Even Sales}}{\text{Selling Price per unit}}$$

$$= \frac{8,00,000}{100} = 8,000 \text{ units.}$$

(iii) Number of units required to earn a profit of ₹40,000.

$$= \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{80,000 + 40,000}{10\%}$$

$$= \frac{1,20,000 \times 100}{10} = \text{Rs. } 12,00,000$$

Break-Even Analysis: Problem with Solution # 8.

A company is making a loss of Rs. 40,000 and relevant information is as follows:

Sales Rs. 1,20,000; Variable Costs Rs. 60,000; Fixed costs Rs. 1,00,000.

Loss can be made good either by increasing the sales price or by increasing sales volume. What are Break even sales if

(a) Present sales level is maintained and the selling price is increased.

(b) If present selling price is maintained and the sales volume is increased. What would be sales if a profit of Rs. 1,00,000 is required ?

Solution:

(a) Break-even sales = Variable Cost + Fixed Cost = ₹ 60,000 + 1,00,000 = ₹ 1,60,000.

(b) Sales = ₹ 1,20,000

Variable cost = ₹ 60,000

∴ Contribution = ₹ 1,20,000 – 60,000 = ₹ 60,000

$$\text{P/V Ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100$$

$$= \frac{60,000}{1,20,000} \times 100 = 50\%$$

$$\text{Break-even sales} = \frac{\text{Fixed Costs}}{\text{P/V Ratio}}$$

$$= \frac{1,00,000}{50} \times 100 = \text{Rs. } 2,00,000$$

Desired sales to earn a profit of ₹ 1,00,000 :

$$\text{Desired Sales} = \frac{\text{Fixed Cost + Desired Profit}}{\text{P/V Ratio}}$$

$$= \frac{1,00,000 + 1,00,000}{50\%}$$

$$= \frac{2,00,000 \times 100}{50} = \text{Rs. } 4,00,000$$

Profit-Volume Chart

Definition: A profit-volume chart is a graphical representation of the relationship between the sales and profits of a business. The concept is especially useful for determining the breakeven point of a business, where the sales level generates a profit of exactly zero. Breakeven information is critical for adjusting the expenditure and margin levels of a business to improve the probability that it will earn a profit. A profit-volume chart can also be used to estimate the profit that will likely be earned based on a certain sales level.

The managers of a business should have an especially high familiarity with the entity's profit-volume chart when the firm has a high fixed cost level. The reason is that the company must attain a high sales volume just to earn enough money to cover fixed costs. If sales drop below this breakeven level, a high fixed-cost business could lose a substantial amount of money.

Profit Volume Analysis (Explained With Diagram)

Read this article to learn about Profit Volume Analysis!

A P/V graph is sometimes used in place of or along with a break-even chart. Profits and losses are given on a vertical scale, and units of products, sales revenue or percentage of activity are given on a horizontal line. The horizontal line is drawn on the graph to separate profits from losses.

The profits and losses at various sales levels are plotted and connected by the profit line. The break-even point is measured at the point where the profit line intersects the horizontal line. The PV graph may be preferred to the break-even chart because profit and losses at any point can be read directly from the vertical scale, but the P/V graph does not clearly show how costs vary with activity.

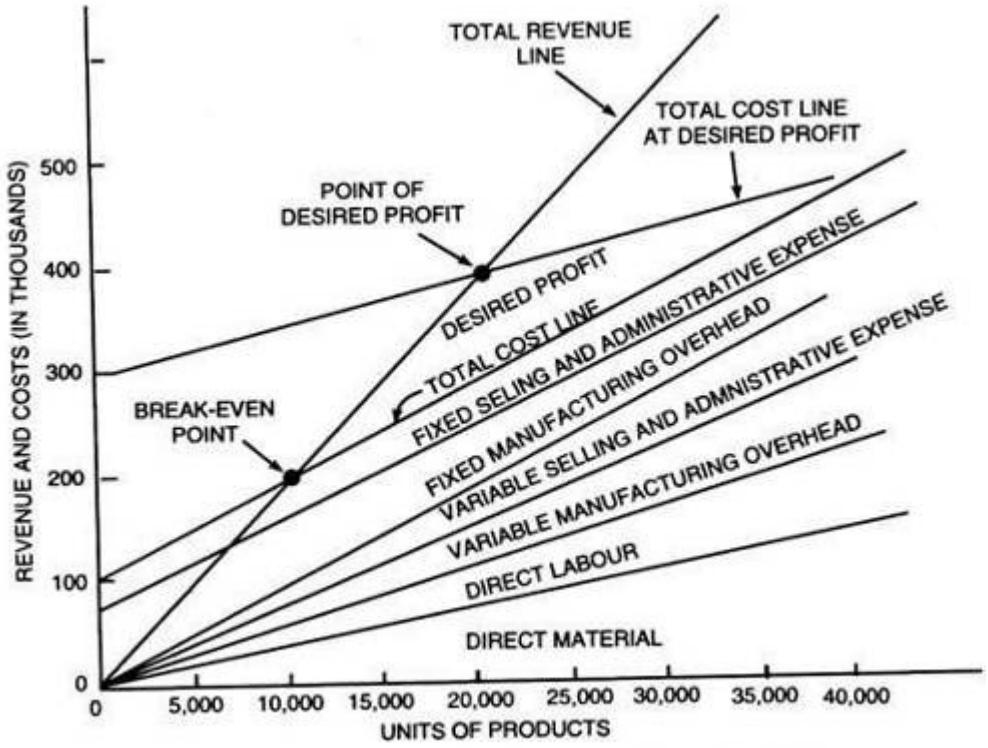


Exhibit. 6.2: Break-even chart showing cost and profit details

Data used earlier to prepare the break-even chart are also used in preparing the P/V graph (see Exhibit. 6.3):

Basic Assumption in CVP Analysis:

CVP analysis is based on several assumptions.

Whether income is computed under the absorption or marginal (variable) costing concept, these assumptions include the following:

1. Selling prices and pricing policy will remain constant at all sales levels; no quantity discounts are assumed to be available. If this is not true, sales revenue cannot be plotted as a straight line.

2. All costs and expenses can be separated into fixed and variable components.

3. The total of the fixed costs is constant at all sales levels; the unit variable costs remain the same and there is a direct relationship between costs and volume. If this is not true, straight lines cannot be drawn.

4. Production and sales quantities are equal.

5. Managerial policies, technological methods, and efficiency of men and machines will not change and cost control will be neither strengthened nor weakened.

6. Volume is assumed to be the only important factor affecting cost behaviour; other influencing factors such as unit prices, sales-mix, labour-strikes, and production methodology are ignored. Any change in cost behaviour will need the break-even point to be modified.

7. In case of multiple products being manufactured by the enterprises, the sales-mix should remain unchanged. That is, the calculation of the break-even point in the case of multiple products predetermines the number of units to be sold in respect of each product. This multiproduct sales-mix should remain unchanged.

Method of Constructing P/V Graph:

(a) Determine an appropriate scale for sales volume on the horizontal axis (which forms the sales line) and this line must be drawn up in the middle portion of the graph so that profit can be shown on the side above the sales line and loss or fixed cost below the sales line.

(b) Then select a scale for profit and loss (fixed cost) on the vertical axis. Thus, the total fixed costs are shown below the sales line on the left hand side of the vertical axis and profits are shown on the right hand side above the sales line of the graph.

(c) Now, points are plotted for profits and fixed costs which are connected by a straight line which again intersects the sales line at the horizontal axis. And BEP is the point of intersection.

The following illustration will make the above principle clear:

Illustration:

From following data prepare a P/V Graph:

	Rs.	
Fixed Costs	25,000	
Variable Cost	60,000	(Rs. 6 per unit)
Units produced	10,000	
Selling Price	1,00,000	(Rs. 10 per unit)

Solution:

Before constructing a P/V graph, it becomes necessary to determine the amount of profit at the present activity level which is as under:

	Rs.
Sales	1,00,000
Less : Variable Costs	60,000
Contribution	40,000
Less : Fixed Costs	25,000
Profit	15,000

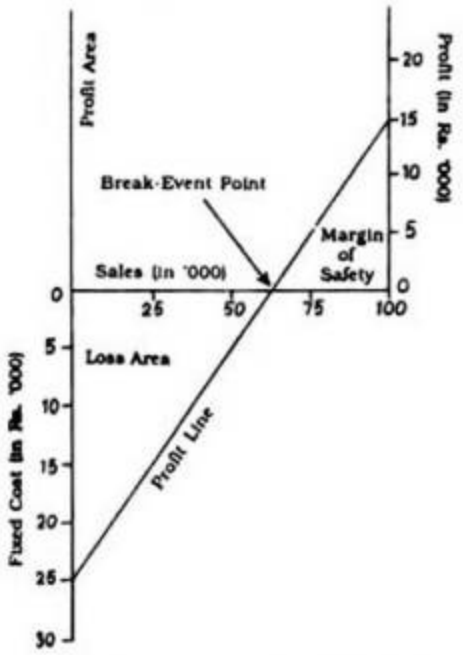


Fig. 4.3 Profit/Volume Graph.

From the above, it becomes clear that the BEP is Rs. 62,500 and Margin of Safety is Rs. 37,500. From the discussion we have made so far about the P/V Graph, we have found that a P/V Graph helps us to determine the BEP and its impact on profits at various levels of activity. It also highlights relative profitability under conditions of high or low demand for a product, for different product prices etc.

Some of them are discussed below:

(i) Relative Profitability under conditions of high or low demands: In order to show the relative profitability, the position of two separate firms can be taken into consideration.

Illustration:

Two business X Ltd. and Y Ltd. sell the same type of product in the same type of market.

Their budgeted Profit and Loss Account for the year ending 1994 are as follows:

			X Ltd. Rs.		Y Ltd. Rs.
Sales			1,50,000		1,50,000
Less :	Variable Cost	1,20,000		1,00,000	
	Fixed Cost	15,000		35,000	
			1,35,000		1,35,000
	Net Budgeted profit		15,000		15,000

You are required to:

(i) Calculate the BEP of each business; and

(ii) State which business is likely to earn greater profits in con editions

of; Heavy demand for the product;

Low demand for the product

Solution:

(i)		X Ltd. Rs	Y Ltd Rs
Sales		1,50,000	1,50,000
Less :	Variable cost	1,20,000	1,00,000
	Contribution	30,000	50,000
	∴ P/V Ratio	20%	$33\frac{1}{3}\%$
$BES = \left(\frac{F}{P/V\ Ratio}\right)$		$= \left(\frac{Rs.\ 15,000}{20\%}\right)$	$= \frac{Rs.\ 35,000}{33\frac{1}{3}\%}$
		= Rs. 75,000	= Rs. 1,05,000
MS = (Actual Sales – BES)		= Rs. 75,000	= Rs. 45,000

(ii) From the above, we find that the total cost of both the firms X Ltd. and Y Ltd. are the same but fixed cost of X Ltd is comparatively low than the firm Y Ltd. As such, BEP of X Ltd. will come sooner which can be shown with the help of the following P/V Graph.

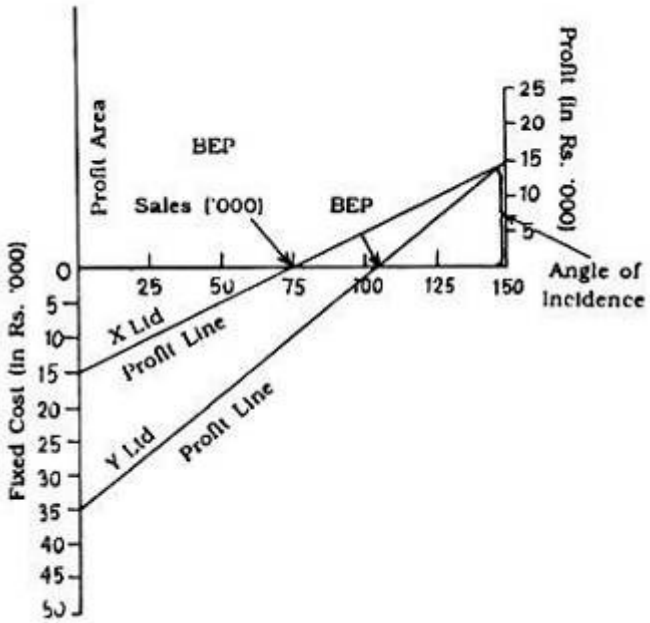


Fig. 4.4 Comparative Profit-Volume Graph.

From the above graph, it becomes crystal clear that X Ltd. will earn more profits than Y Ltd. against a demand below Rs 1, 50,000 sales since the BEP has been reached sooner in case of X Ltd. Moreover, at volume of Rs. 1, 50,000 both the firms will earn equal amount of profit.

But as the rate of earning profit in case of Y Ltd. is more in comparison with X Ltd (which is proved by Angle of Incidence) for a Volume above Rs. 1,50,000 Y Ltd. will earn more profit than X Ltd.

Thus:

(i) In case of heavy demand Y Ltd. will earn more profit, and

(ii) In case of low demand, X Ltd. will earn more profit.

(b) For various product prices:

Under the circumstance, a profit chart depicts the effect on BEP for charging different prices for a product. One is to remember that the use of units is needed as different prices are compared. The following illustration will explain the principals clearly with the help of a profit chart.

Illustration:

Maximum Units sold	3,000
Variable Cost	Rs. 2 per unit
Fixed Cost	Rs. 5,000 (total)

Alternative Selling Price of a product Rs. 4, Rs. 5 and Rs. 6.

Solution:

First Calculate BEP

(i) BEP (in units) $= \frac{F}{C} = \frac{Rs.\ 5,000}{Rs.\ 2}$ = 2,500 units [C = S – V]

,, (in Sales) = 2,500 × Rs. 4 = Rs. 10,000

(ii) BEP (in units) $= \frac{F}{C} = \frac{Rs.\ 5,000}{Rs.\ 3}$ = 1,667 units

,, (in Sales) = 1,667 × Rs. 5 = Rs. 8,335 units

(iii) BEP (in units) $= \frac{F}{C} = \frac{Rs.\ 5,000}{Rs.\ 4}$ = 1,250 units

,, (in Sales) = 1,250 × Rs. 6 = Rs. 7,500

Profit is Calculated as under :

S. P. per unit	Rs. 4	Rs.5	Rs.6
Sales	12,000	15,000	18,000
Less : V. C.	6,000	6,000	6,000
Contribution	6,000	9,000	12,000
Less : F. C.	5,000	5,000	5,000
Net Profit	1,000	4,000	7,000

Now, the following P/V

Graph for different price may be constructed:

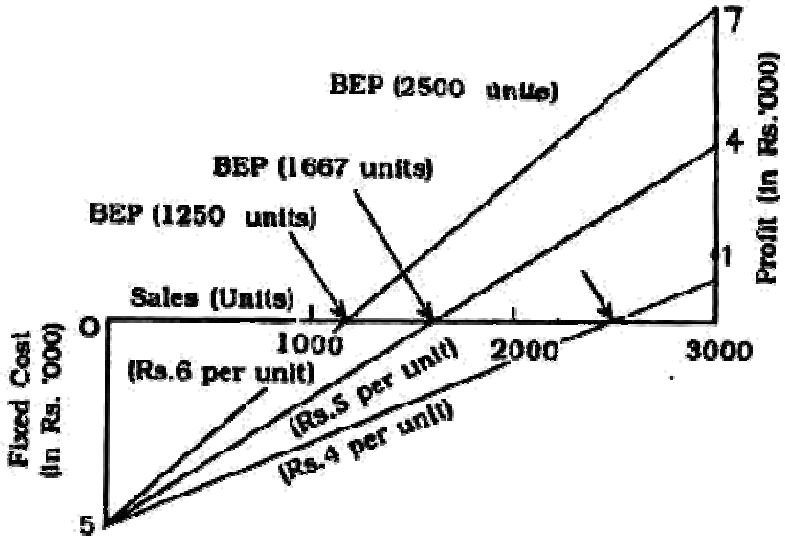


Fig. 4.5 P/V Graph for various Prices.

POSSIBLE QUESTIONS

UNIT II

PART B

1. Write any two features of marginal costing?
2. From the following information, calculate the break-even point in units and in sales value:

Output	-	3,000 units
Selling price per unit	-	Rs.30
Variable cost per unit	-	Rs.20
Total fixed cost	-	Rs.20,000

3. You are given the following information relating to a company for the year 2012 output 20000 units Selling price per unit Rs.12 Direct materials per unit Rs.5 Direct Labour per unit Rs.2 Variable overhears per unit Rs.1 Fixed cost per year Rs.60000

   From the following information calculate

   1. P/V Ratio
   2. Breakeven point in Units
   3. Breakeven point in Value

   Selling price per unit Rs.20

   Variable cost per unit Rs.12

   Fixed costs Rs.32000

   1. The number of units to be produced to break even
   2. The number of units to be sold to earn a profit of Rs.10000

4. Define Marginal costing
5. Calculate BEP and Margin of safety from the following? Sales 50000 units @ Rs.6 per unit Prime cost Rs. 3 per unit Variable overhead Rs. 1 per unit Fixed costs Rs.75000 per annum
6. What is meant by angle of incidence?
7. Write the formula for calculating breakeven point?
8. Calculate BEP in units and value for the following:

9. A Ltd. has two factories X and Y producing same article whose selling price is Rs. 150 per unit. Other details are:

	X	Y
Capacity in units	10000	15000
Variable cost per unit (Rs)	100	120
Fixed expenses (Rs)	300000	210000

Determine the BEP for the two factories assuming constant sales mix also composite BEP.

10. From the following data calculate
Break even point (Units)
If sales are 10% and 15% above the break even sales volume determine the net profit
Selling price per unit - Rs. 10
Direct material per unit - Rs. 3
Fixed overheads - Rs. 10000

11. Write a short note on profit volume ratio?

12. How will you calculate margin of safety?

13. Sales for the year 20000units Rs.2000000

Variable Costs Rs.1600000

Fixed costs for the year Rs.200000

Find BEP
What would be the profits when the output is 22000 units?

14. What is the formula for calculating profit volume ratio?

***CIA - 3 X 2 = 6 (ANSWER ALL THE QUESTIONS)**
****ESE – 5 X 2 = 10 (ANSWER ALL THE QUESTIONS)**

PART C

1. "Marginal costing is a valuable aid for managerial decision" Discuss?
2. From the following particulars, calculate:
   (i) Break-even point in terms of sales value and in units.
   (ii) Number of units that must be sold to earn a profit of Rs.90,000.

		Rs.
Fixed factory overheads cost	-	60,000
Fixed selling overheads cost	-	12,000
Variable manufacturing cost per unit	-	12
Variable selling cost per unit	-	3
Selling price per unit	-	24

3. The following data have been obtained from the records of a manufacturing firm.

	Period I	Period II
Sales	300000	320000
Total cost	260000	272000

Calculate

1. Break even sales
2. Profit when sales are Rs.360000.
3. Sales required to earn a profit of Rs.50000

4. MNP ltd is working at 60% of capacity producing 6000 units of output. The following details are available from its cost records.

Direct materials	Rs.24000
Direct labour	Rs.12000
Variable overheads	Rs.6000

Fixed overheads Rs.15000

The output is sold at a price of Rs 10 per unit. The company receives an offer to export 4000 units @Rs.8.50 per unit. Should the export order be accepted

5. ABC Ltd produces and sells two products A and B. the cost and sales data are given as

	Product A	product B
Selling price	20	30
Direct material	10	15
Direct labour	4	5

Fixed overheads Rs.1200

Variable overheads are absorbed at 50% of direct labour. The proposed sales mix are
a. 100 units of A and 200 units of B
b. 150 units of A and 150 units of B
c. 200 units of A and 100 units of B
Recommend which of the above sales mix the company should adopt

6. A television manufacturing company finds that while the cost of making component part No.Xo5 is Rs.4 per unit, the same is available in the market at rs. 350 per unit with assured supply. The cost details are

Material	1.50
Labour	1.00
Variable OH	0.50
Fixed cost allocated	1.00
Total	4.00

Should the component part be made or bought ?what would be your suggestion if the component part is available at 2.50 in the market ?

7. A toy manufacturing company produces two type of toys. The skilled labour required for the production of these toys is in short supply. You are given the following details of cost :-

	Toy A	Toy B
Direct materials	20	16
Standard time required		
For one unit [hrs.]	4 Hrs	16 Hrs
Direct labour cost @2/Hr	8	6

Variable overhead	4	3
Selling price	50	40

Which type of toy is more profitable to produce and why?

The skilled labour available during a month is only 1200 Hrs. and maximum sales possible of each toy are only 200 units per month. In such a case what would be the optimum product mix of toys?

8. Discuss the assumptions of marginal cost?
9. Explain the features of marginal cost?
10. Discuss the advantages and limitations of marginal cost?

***CIA- 3 X 8 = 24 (EITHER OR TYPE)**
****ESE – 5 X6 = 30 (EITHER OR TYPE**

UNIT III

Budgets and Budgetary Control - Meaning - Types of Budgets - Steps in Budgetary Control - Fixed and Flexible Budgeting - Cash Budget - Responsibility Accounting - Concept - Significance - Different responsibility centers - Divisional performance - Financial measures - Transfer pricing.

Budget

According to ICMA England, A Budget is , "A Financial and /or quantitative statements, prepared and approved prior to a defined period of time, of the policy, to be purchased during the period for the purpose of attaining a given objective .

It is also defined as, " A blue print of a projected plan of action of a business for a definite period of time."

Budgetary Control

According to J. Vatty, "Budgetary Control is a system which uses budgets as a means of planning and controlling all aspects o producing and /or selling commodities and services."

TYPES OF BUDGETS

Production Budget

Production Cost Budget

Sales Budget

Sales Overhead Budget

Cash Budget

Flexible Budget

Zero – Base Budget

BUDGETING AND PREPARATION OF VARIOUS BUDGETS

BUDGET

Budget is a financial and/or quantitative statement, prepared and approved prior to a defined period of time, of the policy to be pursued during that period for the purpose of attaining a given objective.

CIMA Official Terminology

It is a plan quantified in monetary terms, prepared and approved prior to a defined period of time, usually showing planned income to be generated and/or expenditure to be incurred during that period and the capital to be employed to attain a given objective. It is a plan of future activities for an organisation. It is expressed mainly in financial terms, but also usually incorporates many non-official quantitative measures as well.

BUDGETING

Budgeting is the whole process of designing, implementing and operating budgets. The main emphasis in this is short-term budgeting process involving the prevision of resources to support plans which are being implemented.

BUDGETARY CONTROL

Budgetary control is the establishment of budgets relating the responsibilities of executives to the requirements of a policy, and the continuous comparison of actual with budgeted results, either to secure by individual action
the objective of that policy or to provide a basis for its revision.

- CMA Official Terminology

FORECAST Vs. BUDGET

A forecast is a prediction of the future state of world, in connection with those aspects of the world, which are relevant to and likely to affect on future activities. Forecast is calculation of probable events. Both forecasting and planning involve recognition of the relevant factors in a given situation and understanding of what each factor has contributed to it and how each is likely to affect the future. Any organised business cannot avoid anticipating or calculating future conditions and trends for the framing of its future policy and decision. Forecast is concerned with 'probable events' and the budgeting relates to 'planned events' Budgeting should be preceded by forecasting, but forecasts may be made for purpose other than budgeting.

Requirements of a Sound Budgeting System

The following are the essential requirements of a sound budgeting system:

Clear lines of authority and responsibility have to be established throughout the organisation and the authority and responsibility of different levels of management and departmental executives are clearly defined.

The organisational goal should be quantified and clearly stated. These goals should be within the framework of organisation’s strategic and long range plans. The setting of budgets is not a process detached from planning of the company's overall policy. A well defined business policy and objective is a prerequisite for budgeting.

The budget system should be established on the highest possible level of motivation. All levels of management should participate in setting budgets. Since this can produce more realistic targets, lead to better understanding of corporate objectives and the constraints within which organisation works. Participation in budgeting process will motivate the personnel to achieve budget levels of efficiency and activity.

The budget control system should provide for a degree of flexibility designed to change in relation to the level of activity attained and the impact of changes in sales and production levels on revenue, expenses are known. It enables more accurate assessment of managerial and organisational performance.

Proper communication systems should be established for management reporting and information service so that information relating to actual performance is presented to the manager responsible for it promptly to enable the manager to know the nature of variations so that remedial action is taken wherever necessary.

Educating the budget process and creation of cost awareness atmosphere will lead to effective implementation of budgets.

The top management's involvement in budget process is essential for successful implementation of the budgets. It should take interest not only in setting the budgets and targets but also to check upon the actual attainment, motivating the personnel, rewarding for achievements, investigation into reasons for any deviation of actual from budgeted results, taking punitive action wherever necessary.

A sound system for generating accurate and reliable and prompt accounting information is basic for successful implementation of budget system in an organisation.

Advantages of Budgeting

- Budgetary control establishes a basis for internal audit by regularly evaluating departmental results.
- Only reporting information which has not gone according to plan, it economies on managerial time and maximizes efficiency. This is called 'Management by Exception reporting.
- Scarce resources should be allocated in an optimal way, thus controlling expenditure
- It forces management to plan ahead so that long-term goals are achieved.
- Communication is increased throughout the firm and coordination should be improved.
- An effective budgetary control system will allow people to participate in the setting of budgets, and thereby have a motivational impact on the work force. Individual and corporate goals are aligned.
- Areas of efficiency and inefficiency are identified. Variance analysis will prompt remedial action where necessary
- The budget provides a yardstick against which the performance of the firm can be evaluated. It is better to compare actual with budget rather than with the past, since the latter may no longer be suitable for current and expected conditions.

- People are made responsible for items of cost and revenue, i.e. areas of responsibility are clearly delineate.

Problems in Budgeting

- Budgets are perceived by the work force as pressure devices imposed by top management. This can have an adverse effect on labour relations.
- It can be difficult to motivate an apathetic work force.
- The pressure in the budgeting system may result in inaccurate record keeping. :
- Managers may over-estimate costs in order that they will not be held responsible in the future for over spending. The difference between the minimum necessary costs and the costs built into the budget is called slack.
- Departmental conflict arises because of competition for resource allocation. Departments blame each other if targets are not achieved.
- Uncertainties can occur in the system,' e.g. uncertainty over demand, inflation, technological change, competition, weather etc. ;
- It may be difficult to align individual and corporate goals. Individual goals often change and may be much lower than the firm's goals.
- It is important to match responsibility with control, otherwise, a manager will be demotivated. Costs can only be controlled by a manager if they occur within a certain time span and can be influenced by that manager. A problem arises when a cost can be influenced by more than one person.
- Managers are often accused of wasting expenditure when they either

  demand a greater budget allowance than is really needed, or

  unnecessary spending in order to fully utilise their allowance through fear of future cut-backs. Zero base budgeting can overcome this problem.

- Sub-optimal decisions may arise when a manager tries to enhance his short-run performance in a way which is detrimental to the organisation as a whole, e.g. delaying expenditure urgently needed repairs.
- They are based on assumed conditions (e.g. rates of interest) and relationship (e.g. product-wise held constant) that are not varied to reflect the actual circumstances that come about.
- They make allowance for tasks to be performed only in relation to volume rather than time.
- They compare current costs with estimates "based only on historical analysis.
- Their short-term horizon limits the perspective, so short-term results may be sought at the expense of longer term stability or success.

- They have a built-in bias that tends to perpetuate inefficiencies. For example, next year's budget is determined by increasing last year's by 15 per cent, irrespective of the efficiency factor in last year.
- As with all types of budgets the game of 'beating the system' may take more energy factor in last year.

- The fragile internal logic of static budget will be destroyed if top management reacts to draft budgets by requiring changes to be made to particular items, which are then not reflected through the whole budget.

BUDGETING PROCESS

The method by which the annual budget is prepared will differ from organisation to organisation. In some organisations budgeting may be a well organised, well documented procedures while in others the budget may be prepared in a rather ad hoc and disorganised manner. The budget process is shown in the following figure. The steps in budgeting process representative to all organisations is given below:

1. Specification and Communication of Organisational Objectives :

Budget is a medium through which organisation's objectives and policies are reflected. Budgeting is used as a tool for implementing the organisational objectives. It is essential to understand, specification and documentation of organisational objectives before the managers start for budgeting the organisational activities. Following from a statement of objectives, a corporate long-range or strategic plan can be built up. Distinction may be drawn between current operating activities and future strategic activities. Budgeting is a management tool used for shorter term planning and control. This classification of activities into short-term and strategic long-term and communication to the managers will lay down a sort of guide for budgeting the activities within the specified objectives and activity

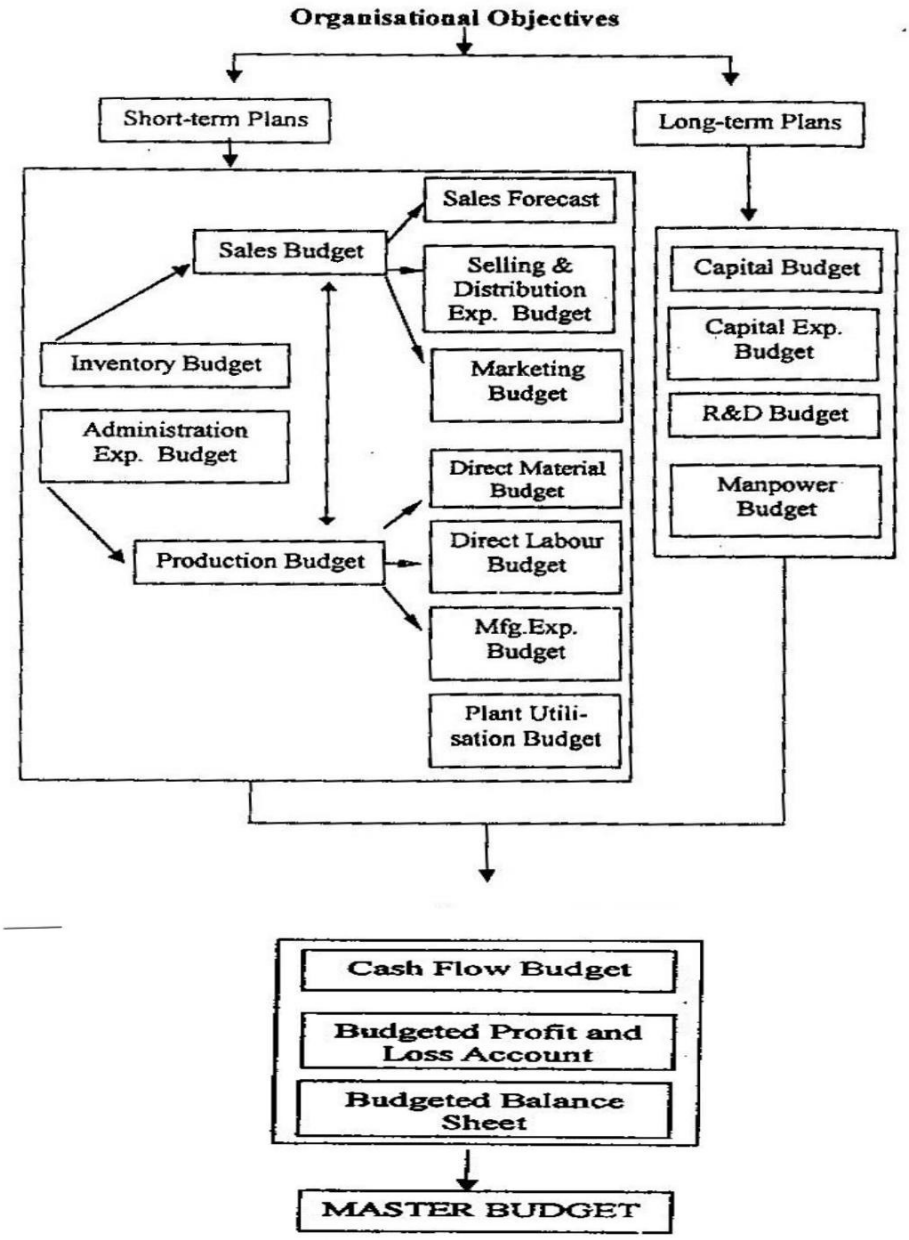


Figure: Budgeting Process

2. Determination of Key Success Factors :

The performance of every organisation will be particularly influenced by certain critical success factors, key factor will influence the activities of an undertaking and it will limit the volume of output and will have direct impact on the profitability of the organisation. Critical success factors may consist of a specified raw material, a specific type of labour skill, a tool, a service facility, floor space, cash resources etc. The limitation or shortage of such critical factors may result in restricting capacity utilisation. The limiting factors may shift from time to time due to external and internal circumstances,. In organisations which are already operating at maximum capacity, the most critical success factor is likely to be productive capacity. In majority of organisation the most critical factor is likely to be consumer demand or the expected level of revenues or funds. Because of this, the sales or funds budget is usually the first budget to be prepared. It will determine the content of other related budgets.

3. Establishment of Clear Ones of Authority and Responsibility:

An organisational chart defining the lines of authority and responsibility of the managers responsible for accomplishment of organisational objectives is to be prepared. The organisational chart should define the following:

The responsibility of individual functional managers

Delegation of authority to the concerned functional managers

Inter-functional relationship of the organisation.

4.Establishment of Budget Centres :

Budget centre is a section of an organisation for which separate budgets can be prepared and control exercised (CMA official terminology). The entire organisation is divided into different segments, which are clearly defined for the purpose of budgetary control according to responsibilities of departmental heads. These segments of an organisation defined for the purpose of budgetary control are technically referred to as budget centers.

5. Determination of Budget Period :

Budget period is a period for which the budget is prepared. A budget can; be a long-term budget or short-term budget. A short term budget is generally prepared for one year or lesser period. Quarterly, monthly or even weekly budget can be prepared for certain operations of the company. The short-term budget will generally not exceed the full accounting year. The long-term budget which extend to five or even more years. This long-term budget will agree with long-term forecast of sales, organisational schemes for expansion modernisation, diversification etc. The long-term budgets are used for planning whereas short-term budget is used for implementation of long range plans, activities, objectives and also for control purposes. Capital expenditure budget and Research and development expenditure budget are the examples of long-term budgets. Annual sales budget, Income and expenditure budget are the examples of short-term budgets.

6. Establishment of Budget Committee :

In small organisations, the person incharge of finance and accounting functions will involve in preparation of budgets. The setting up of a budget Committee is necessary in case of large and complex organisations. As the budget involves the various functional activities, the closest association of functional managers is essential for satisfactory formulation and

implementation of the budget The budget committee will be composed of major functional heads. It can be effective medium for coordination and review of the budget programme. The main functions of budget committee are as follows:

To review the functional budget estimates.
To recommend the functional budgets for revision.
To review and advise on the general policies affecting more than one function.
To review, approval and adoption of revised budgets.
To receive and analyse the-periodic performance reports from budget centers.
To examine the budget reports showing actual compared with budget.
To locate the responsibility for discrepancies between actual and budgets, and recommends the corrective action.
To participate in decision making in strategic issue like, expansion, modernisation, diversification and revision of organisational activities, which have direct relationship to the company's budgets.

7.Appointment of Budget Controller :

Proper budget administration is facilitated by the budget controller who is made responsible for the preparation of the budget and coordinating activities of the individual departments. His functions and responsibilities will include the following:

Generation and dissemination of information needed for decision-making and planning to each person in the organisation having such responsibilities. The information may include, but is not limited to, forecasts of economic and social conditions, governmental influences, organisation goals and standards for decision making, economic and financial guidelines, performance data, performance standards and the prerequisite plans of others in the enterprise.

Establishing and maintaining a planning system which:
Channels of information to each of persons responsible for planning,

Schedules the formulation of plans,

Structures the plans of sub-sections of the enterprise into composites at which points, tests are made for significant deviations from economic and financial guidelines and from goal achievement and repeats the process for larger segments to and including the enterprises as a whole, and

Disseminates advice of approval, disapproval or revision of plans to affected individuals in accordance with established lines of authority and organisational responsibilities.

Construction and using models of the enterprise both in total and by sub-sections, to test the effect of internal and external variables upon the achievement of organisation goals.

Ensuring the accumulation of performance data related to responsibility centers within the organisation, measured against the plans, whether period or project, for each centre, transmitted to each centre, and the analysis of deviations of actual from planned performance.

The budget controller is responsible for the final preparation, presentation and interpretation of the financial plan of the company. He is responsible for development of budget procedures. He will act as a staff manager coordinating all budget functions.

8. Preparation of Budget Manual:

Budget manual is the documentation of policies and procedures involved in implementation of budgetary control system. A budget manual will normally set out the following:

Responsibility and authority of different levels of management.

Establishment of organisational hierarchy.

Definition and clarification of various terms used in budgets.

Fixation of responsibility for preparation and implementation of budgets and budgetary system.

Specification and timing of statements and reports.

Procedures in management information system in the organisation.

Procedures in feed-back and feed-forward control systems.

Exhaustive programme of budget preparation.

The budget manual contains the standardised form which become information generation for preparation of budgets. It contains a complete programme of activities involved in budget preparation. The budget' manual should provide detailed procedure for preparation and development and control of each budget like Sales budget, Production budget, Direct material budget, Direct labour budget, Overhead budget, Capital expenditure budget, R&D expenses budget etc.

PREPARATION OF SALES OR REVENUE BUDGET

The sales revenue budget is the starting point of most master budgets. In manufacturing organisations sales budgeting begins with the forecasting of the sales of individual products. These forecasts may be by geographical area, by class of customer or by some other segment. In case of manufacturing companies, the budgeting will begin with the Revenue budget of the organisation. Forecasting sales is a difficult task as many assumptions need to be made about consumer demand, environmental conditions likely customer demand at different prices, the probable prices for similar products sold by competitors, the number of economic activity in the regions where the product is sold, the number of sales personnel required to service the estimated demand, the appropriate level of advertising and promotional expenditures, the impact of anticipated changes in exchange rates and changes in the taxes such as value added tax or customs and excise duties.

PREPARATION OF BUDGETS

Once the sales budget has been determined from a range of sales forecasts it is possible to construct the following other budgets:

1. Production Budget

The production budget is an estimate of the quantity of goods that must be produced during the budget period. The aim of the production function will presumably be to supply finished goods of a specified quality to meet marketing demands. The sum of sales requirements plus changes in stock levels of finished goods gives the production requirements for the period being budgeted. In order to construct the production budget we need the level of sales expected and the desired levels of stock of finished goods. The following formula is used for calculation of units to be produced.

Production = Sales + Closing stock - Opening stock

Production budget should be developed keeping in view the optimal, balance between sales, inventories and production so as to result in minimum cost. Once the production level is determined, it becomes the starring point for the direct materials, direct labour and manufacturing overhead budgets.

2. Plant Utilisation Budget

Plant utilisation budget is prepared for the estimation of plant capacity to meet the budgeted production during the period considered under the budget" For this purpose the plant capacity is expressed in terms of convenient units of measurement like production in hours, production in weight (M.T./Kg.) production in units etc. Budgeted machine load in each department should be worked out.

In case the budgeted plant utilisation is more than the plant capacity the management may think of extra shift working, purchase of new machinery, overtime working, sub-contracting etc. When the budgeted plant utilisation in lesser than the plant capacity, management should consider the ways to increase sales volume.

3. Direct Materials Budget

The direct materials budget specifies the budgeted quantities of each raw material required for the budgeted production. The requirement to purchase of direct material can be calculated with the help of the following formula.

Purchases = Closing stock + Usage - Opening stock

The materials budget provides basis for fixing optimum levels of inventory stocks, establishment of control over material usage and purchase cost budget.

4. Direct Labour Budget

The direct labour budget will ensure that the plan will make the required number of employees of relevant grades and suitable skills available at the right times. It specifies the direct labour requirement, of various products as envisaged in the production budget. The direct labour budget will be developed for both direct labour hours and direct labour cost. After the labour requirements relating to different grades are finalized, estimated rate per hour and labour cost per unit is arrived at:

Illustration 1:

The direct labour hour requirements of three of the products manufactured in a factory, each involving more than one labour operation, are estimated as follows:

Direct Labour Hour / per unit (in minutes)

Product / Operation	1	2	3
1	18	42	30
2	-	12	24
3	9	9	-

The factory works 8 hours per day, 6 days in a week. The budget quarter is taken as 13 weeks and during a quarter, lost hours due to leave and holidays and other causes are estimated to be 124.

The budgeted hourly rates for the workers manning the operations, 1, 2 and 3 are Rs.2.00, Rs.2.50 and Rs.300 respectively. The budgeted sales of the product during the quarter are:

Product	1	9,000 units
	2	15,000 units
	3	12,000 units

There is a carryover of 5,000 units of Product 2 and 4,000 units of Product 3 and it is proposed to built up a stock at the end of the budget quarter as follows:

Product	1	1,000 units
	3	2,000 units

Prepare a manpower budget for the quarter showing for each operation:
(i) Direct labour hours, (ii) Direct labour cost, and (iii) Number of workers.

Before preparing the quarterly manpower budget for 3 products operation-wise, it is necessary to work out the following:

(a) Production budget, (b) Direct labour hours for each product operation-wise, (c) Number of workers required for each operation.

(a) Production Budget for the quarter ending .....

Particulars		Product 1	Product 2	Product 3
Budgeted Sales	(units)	9,000	15,000	12,000
Add: Stock to be built up	(closing)	1,000	-	2,000
Total		**10,000**	**15,000**	**14,000**
Less: Carry-over stock	(opening)	-	5,000	4,000
Budgeted Production		10,000	10,000	10,000

(b) Direct Labour Hour for each Product (operation-wise) Operation I

Particulars	Product 1	Product 2	. Product 3
Direct labour hrs. per unit (minutes)	18	42	30
Budget Production (units)	10,000	10,000	10,000
Direct labour hrs. required:	$\left(\frac{10,00}{0} \times \frac{18}{60}\right)$	$\left(\frac{10,000}{} \times \frac{42}{60}\right)$	$\left(\frac{10,000}{} \times \frac{30}{60}\right)$
	3,000 hrs.	7,000 hrs.	5,000 hrs.

Total labour hours required for Operation I = 15,000 hours.

Operation II

Particulars	Product 1	Product 2	. Product 3
Direct labour hrs. per unit (minutes)	-	12	24
Budget Production (units)	10,000	10,000	10,000
Direct labour hrs. required:	-	$\left(\frac{10,000}{} \times \frac{12}{60}\right)$	$\left(\frac{10,00}{0} \times \frac{24}{60}\right)$
	-	2,000 hrs.	4,000 hrs.

Total labour hours required for Operation II = 6,000 hours.

Operation III

Particulars	Product 1	Product 2	Product 3
Direct labour hrs. per unit (minutes)	9	6	-
Budget Production (units)	10,000	10,000	10,000

Direct labour hrs. required:	$\left(\frac{10,00}{0} \times \frac{9}{60}\right)$	$\left(\frac{10,000}{} \times \frac{6}{60}\right)$	-
	1,500 hrs.	1,000 hrs.	-

Total labour hours required for Operation III = 2,500 hours.

(c) Number of Workers required for each Operation

Working hrs. of factory in a quarter = 13 weeks x 6 days week x 8 hours a day	624 hours
Less: Loss of hours due to leave, holidays and others causes	124 hours
Total available hours per man	500 hours

Now, the requirements for manpower for each operation can be worked out.

Manpower Requirement:

Total direct labour hrs./ Total available hours required per man

a. Operation I	= 15,000/500	= 30 men
b. Operation II	= 6,000/500	= 12 men
c. Operation III	= 2,500/500	= 5 men

Now, manpower budget for the quarter can be prepared for the three products and for each operation. The same is given below:

Operation		Product I		Product II		Product 3		Total		No. of workers
				D.L. Hrs.			Cost Rs.		Cost Rs.	
I		7,000			10,000			30,000	30	

II				2,000	10,000		15,000	12	
III				1,000	-		7,500	5	
Total				10,000	20,000		52,500	47	

5. Manufacturing Expenses Budget

Manufacturing overhead refers to the aggregate' of factory indirect material, indirect labour and indirect expenses which can be divided into fixed and variable elements of manufacturing overhead. The fixed manufacturing overhead will not vary with the change in the level of activity and it can be estimated with a fair degree of accuracy. On the other hand, variable manufacturing overhead per unit will be estimated and the total variable manufacturing overhead will be determined with the help of the activity level. Preparation of variable overhead budget is based on scheduled production and operating conditions.

Illustration 2:

Gama Engineering Company Limited manufacturers two Products X and Y. An estimate of the number of units expected to be sold in the first seven months of 2001 is given below:

Months	Product X	Product Y
January	500	1,400
February	600	1,400
March	800	1,200
April	1,000	1,000
May	1,200	800
June	1,200	800
July	1,000	980

It is anticipated that:

(a) There will be no work-in-progress at the end of any month;

(b) Finished units equal to half the anticipated sales for the next month will be in stock at the end of each month (including June 2001).

The budgeted production and production costs for the year ending 31st June, 2001 are as follows:

Particulars		Product X	Product Y
Production	(units)	11,000	12,000
Direct materials per unit	(Rs.)	12	19
Direct wages per unit	(RS.)	5	7
Other manufacturing charges apportionable to each type of product	(Rs.)	33,000	48,000

You are required to prepare:

(a) Production budget showing the number of units to be manufactured each month.

(b) Summarised production cost budget for the 6 month-period January to June 2001.

(a) Production Budget (for the 6 months ending 30th June, 2001

(units)

Particulars			March	April	May	June
Product X						
Closing Stock			500	600	600	500
Sales			800	1,000	1,200	1,200
			1,300	1,600	1,800	1,700
Less:Opening Stock			400	500	600	600
Production(in units)			900	1,100	1,200	1,100

Product Y	Jan.	Feb.	March	April	May	June
Closing stock	700	600	500	400	400	450
Sales	1,400	1,400	1,200	1,000	800	800

	2,100	2,000	1,700	1,400	1,200	1,250
Less: Opening Stock	700	700	600	500	400	400
Production (in units)	1,400	1,300	1,100	900	800	850

(b) Summarised Production Cost Budget (for the 6 months ending 30th June, 2001) . (Rs.)

Production	**X-5,550 units**		**Y-6,350 units**	
	Unit Cost	**Total Cost**	**Unit Cost**	**Total Cost**
Direct materials	12	66,600	19	1,20,650
Direct wages	5	27,750	7	44,450
Manufacturing charges	3	16,650	4	25,400
Total	20	1,11,000	30	1,90,500

Note: Manufacturing charges have been presumed to be variable costs in the absence of any other information. They could, however be presumed to be fixed charges also for the whole year. In such a case they will be taken as 50% of the annual charges for the first six months in each case.

6. Administrative Expenses Budget

Administrative expenses in an organisation will be incurred for the following activities:

(a) Formulation of policies,
(b) Directing the organisation, and
(c) Controlling the operations of an organisation etc.

The administrative expenses will not include those expenses which are incurred for manufacturing, selling and distribution, R&D functions. The administrative overheads are of a fixed nature and the change in the level of activity will not bring any change in the administrative expenses incurred. Cm study o behaviour of costs, if any administrative expenses are of variable or semi-variable nature, those expenses can be budgeted with the Level of activity.

7. Selling and Distribution Expense Budget

Selling expenses refers to expenses incurred relating to the activities:

(a) Creation and stimulation of demand of company's product, and
(b) Secure orders.

Selling expenses include salesmen's salaries, commissions, expenses and related administrative cost etc. Distribution expenses refers to expenses incurred relating to the following activities:

(a) Maintaining and creating demand of product, and
(b) Making the goods available in the hands of the customer.

Distribution expenses include transportation, freight charges, stock control, warehousing etc.

Preparation of selling and distribution expense budget is based on the sales budget. The selling and distribution expenditure can be estimated with the help of flexible budgeting technique.

8. Research and Development Budget

This will cover materials, equipment and suppliers, salaries, expenses and other costs relating to design, development and technical research projects.

9. Capital Expenditure Budget

The capital expenditure budget represents the expected expenditure on fixed assets during the budget period. It is an outlay on assets that are required and held for the purpose of generating income, e.g. plant and machinery, motor vehicles, premises etc. It is a plan for capital expenditure, in monetary terms. Capital expenditure may be incurred for expansion, diversification, modernisation plans. It relates to projects involving huge capital outlay and long-term commitments. A capital expenditure budget must reveal following information project wise:

Original appropriation
Cumulative expenditure up-to-date
Unutilized appropriation
Fresh appropriation, and
Limit carried to next period

Programme budgeting technique is more appropriate for capital expenditure budgeting.

Capital expenditure authorisation is the formal authority to incur capital expenditure which meets the criteria defined to achieve the results laid down under a system of capital appraisal. Levels of authority must be clearly defined and the reporting structure of actual expenditure through prior authorisation on a formal proposal basis and monitoring as expenditure is incurred.

10. Manpower Budget

Manpower budget will taken an overall view of the organisations needs for manpower for all areas of activity - sales, manufacturing, administrative, executive and so on for a period of years.

11. Marketing Expenditure Budget

Marketing budget include estimated expenditure to be inquired for advertising promotional activities, public relations, marketing research, customer services etc. during the budget period.

12. Capital Budget

Capital budget is concerned with the question of capacity and strategic direction. This must deal with the evaluation of alternate dispositions of capital funds as well as with the choice of the best capital structure.

PREPARATION OF MASTER BUDGET AND ITS IMPLEMENTATION

Master budget is a budget which is prepared from, and summarises the functional budgets. It is a summary budget that incorporates the key figures and totals of ail other budgets. The process in preparation of Master budget is shown in the figure Budgetary Process (given at the beginning of this chapter).

The Master budget may closely reflect two dimension of the organisations:

1.Organisational Structure: All revenues and expenditures must be attributed to the budget centre and managers responsible for them. At the control stage, later, a system of responsibility accounting reports must be built up to inform responsible managers for the progress of that result against budgets.

2.Products or Programmes: In this dimension, the budget information is organised to show the revenues, costs, contributions, profits and levels of production/ sales activity for each product or programme produced by, the organisation.

Negotiation of Budgets :

Budgets may be prepared in a top-down or bottom-up manner. In either process, the budget will need to be negotiated by superiors, subordinates and by different departments competing for the scarce resources. This process of negotiation allows the exercise of both formal and informal power. Participation in budgeting appears to lead to more positive attitude towards the budget and greater acceptance of it.

Coordination and Review of Budget:

Incompatibility and inconsistency may arise because the budgeting process, usually involves a number of different departments - e.g. sales,-production, marketing and numerous senior and lower level managers. It should be ensured that consistency is arrived at in finalisation of master budget.

Acceptance of Communication of Budgets :

After the master budget is accepted and agreed upon by all the levels of organisational hierarchy, it will be passed on for implementation. It is essential that each manager responsible for implementing the budget policy be informed as to his responsibility.

Budget Monitoring:

It is important that the actual performance of each manager should be regularly and frequently compared against budget targets in order to prevent it from getting 'out of control' and in case of change in internal and external business environment a revision of the budget may be necessitated.

CASH BUDGET

Cash flow budget is a detailed budget of income and cash expenditure incorporating both revenue and capital items. The cash flow budget should be prepared in the same format in which the actual position is to be presented. The year's budget is usually phased into shorter periods for control, e.g. monthly or quarterly. Cash budget is concerned with liquidity must reflect changes between opening and closing debtor balances and between opening and closing creditor balances as well as focusing attention on other inflows and outflows of cash. The cash budget shows the cash flows arising from the operational budgets and the profit and assets structure. A cash budget can be prepared in the following ways:

1. Receipts and Payments Method :

In this method all the expected receipts and payments for budget period are considered. All the ash inflow and outflow of all functional budgets including capital expenditure budgets are considered. Accruals and adjustments in accounts will not affect the cash flow budget. All anticipated cash inflow is added to the opening balance of cash and all ash payments are deducted from this to arrive at the closing balance of cash. This method is commonly used in business organisations.

2. Adjusted Income Method :

In this method the annual cash flows are calculated by adjusting the sales revenues and costing figures for delays in receipts and payments (changes in debtors and creditors) and eliminating non-cash items such as Depreciation.

3. Adjusted Balance Sheet Method :

In this method, the budgeted balance sheet is predicted by expressing each type of assets and short-term liabilities as percentage of the expected sales. The profit is also calculated as a percentage of sales, so that the increase in owners equity can be forecast. Known adjustments, may be made to long-term liabilities and the balance sheet will then show if additional finance is needed.

It is important to note that the capital budget will also be considered while preparation of cash flow budget because the annual budget may disclose a need for new capital investments and also, the costs and revenues of any new projects coming on stream will need to be incorporated in the short-term budgets. A number of additional financial statements, such as sources and application of funds statement or schedules or loan service payments or capital raising schedules may be produced.

Illustration 3:

Prepare a cash budget for the three months ending 30th June, 2001 from the information given below:

a. (Rs.)

Month	Sales	Materials	Wages	Overheads
February	14,000	9,600	3,000	1,700
March	15,000	9,000	3,000	1,900
April	16,000	9,200	3,200	2,000
May	17,000	10,000	3,600	2,200
June	18,000	10,400	4,000	2,300

b. Credit Terms:

Sales/ Debtor - 10% sales are on cash, 50% of the credit sales are collected next month and the balance in the following month.

Creditors	Materials	2 months
	Wages	¼ month
	Overheads	½ month

c. Cash and bank balance on l" April, 2001 is expected to be Rs.6,000.

d. Other relevant information is:

(i) Plant and Machinery will be installed in February 2001 at a cost of Rs.96,000. The monthly installments of Rs.2,000 is payable from April onwards.

(ii) Dividend @ 5% on Preference Share Capital of Rs.2,00,000 will be paid on 1st June.

(iii) Advance to be received for sale of vehicles Rs.9,000 in June.

(iv) Dividends from investments amounting to Rs. 1,000 are expected to be received in June.

(v) Income-tax (advance) to be paid in June, is Rs.2,000.

Working Notes:

Collection from Sales/ Debtors

Month	Calculation	April	May	June
February	(14,000-10% of 14,000) x 50%	6,300	-	-
March	(15,000-10% of 15,000) x 50%	6,750	6,750	-
April	10% of 16,000	1,600	-	-
	(16,000-10% of 16,000) x 50%	-	7,200	7,200
May	10% of 17,000	-	1,700	-
	(17,000-10% of 17,000) x 50%	-	-	7,650
June	10% of 18,000	-	-	1,800
		14,650	**15,650**	**16,650**

Cash budget for the quarter April - June 2001

Particulars	April	May	June	Total
1. Balance b/f	6,000	3,950	3,000	6,000
2. Receipts				
Sales (Note 1)	14,650	15,650	16,650	46,950

Dividend	-	-	1,000	1,000
Advanced against	-	-	9,000	9,000
vehicle				
Total	20,650	19,600	29,650	62,950
3. Payment				
Creditors*	9,600	9,000	9,200	27,800
Wages*	3,150	3,500	3,900	10,550
Overhead*	1,950	2,100	2,250	6,300
Capital Expenditure	2,000	2,000	2,000	6,000
Income tax advance	-	-	2,000	2,000
Total	16,700	16,600	29,350	62,650
4. Balance c/f	3,950	3,000	300	300

* Payments for creditors, wages and overhead have been computed on the same pattern.

FLEXIBLE BUDGETING

Flexible budget is a budget which, by recognising the difference in behaviour between fixed and variable costs in relation to fluctuations in output, turnover, or other variable factors etc. It is designed to change in relation to the level of activity actually attained.

A flexible budget is one that takes account of a range of possible volumes It is sometimes referred to as a multi-volume budget. The range of possible outputs may be known as the relevant range. 'Flexing' a budget takes place when the original budget is deliberately amended to take account of change activity levels.

The flexible budget is based on the fundamental difference in behaviour of fixed costs, variable costs and semi-variable costs. Since fixed costs do not vary with short-run fluctuations in activity it can be seen that the flexible budget will really consist of two parts: The first is a fixed budget begin made up of fixed costs and the fixed component of semi-variable costs. The second part is a truly flexible budget that consists solely of variable costs.

Steps in Preparation

The steps involved in preparation of flexible budget are as follows:

Specify the time period that is used.

Classify all costs into fixed, variable and semi-variable categories.

Determine the types of standards that are to be used.

Analyse cost behaviour patterns in response to past levels of activity.

Build up the appropriate flexible budget for specified levels of activity.

Importance

Flexible budgets are important aids to decision making which help the management in the following ways:

Flexible budget enable an organisation to predict its performance and income levels at a given range of sales levels and activity levels. It can be seen the impact of changes in sales and production levels on revenue, expenses and ultimately income.

Flexible budgets enables more accurate assessment of managerial and organisational performance.

Disadvantages

The procedure for drawing up a flexible budget is quite straight forward. The flexed budget is only accurate, if costs behave in a predicted manner. All too often assumptions are made about cost behaviour which are too simplistic and hence do not reflect what actually happens.

Flexible budgets assume linearity of costs and therefore take no account of, for example discounts for bulk purchases of materials Labour costs are unlikely to behave in a linear fashion unless a piecework scheme is in operation.

Such budgets also rely on the assumption of continuity when costs may actually behave in a stepped or discontinue matter.

The method of determining the fixed and variable elements of costs is often arbitrary and hence the flexed cost bear little relation to the correct budgeted cost for the flexed level of activity.

Although flexed budgets tend to maintain fixed costs at the same level whatever the level of output/ sales, very often fixed costs are actually fixed only over a relevant output range.

Illustration 4:

ABC Ltd. Manufactures a single product for which market demand exists for additional quantity. Present sale of Rs.60,000 per month utilised only 70% capacity of the plant. Sales Manager assures that with a reduction of 10% in the price he would be in a position to increase the sale by about 25% to 30%

The following data are available:

a) Selling price	Rs. 10 per unit
b) Variable cost	Rs.3 per unit
c) Semi-variable cost	Rs.6,000 fixed plus Re.0.50 per unit
d) Fixed cost	Rs.20,000 at present level estimated to be Rs.24,000 as 80% output.

You are required to submit the following statements to the Board showing:

1. The operating profits at 60%, 70% and 80% levels at current selling price and at proposed selling price.
2. The percentage increase in the present output which will be required to maintain the present profit margin at the proposed selling price.

Statement of Operating Profit at different capacity levels at Current Selling Price (Rs.)

Capacity Levels Product and Sales (units)	**60% 6,000**	**70% 7,000**	**80% 8,000**
Sales (@Rs. 10) (A)	60,000	70,000	80,000
Costs:			
Variable cost (@ Rs.3)	18,000	21,000	24,000
Semi-variable cost			
Fixed component	6,000	6,000	6,000
Variable component (@ Re.0.50 per unit)	3,000	3,500	4,000
Fixed cost	20,000	20,000	24,000
Total cost (B)	47,000	50,500	58,000
Profit (A) - (B)	13,000	19,500	22,000

Statement of Operating Profit at different capacity levels at proposed Selling Price

(Rs.)

Capacity Levels	**60 %**	**70 %**	**80 %**
Sales (@ Rs.9)	54,000	63,000	72,000
Less: Total cost	47,000	50,500	58,000
Profit	7,000	12,500	14,000

Calculation of Percentage Increase in present output for desired profit

(Rs. per unit)

Proposed selling price	9.00
Less: Variable cost (Rs.3.00 + Re.0.50)	3.50
Contribution per unit	5.50

(Rs.)

Present Profit	13,000
Add: Fixed cost (Rs.20,000 + Rs.6,000)	26,000
Desired Contribution	39,000

.

Required Output

$$= \frac{\text{Desired Contribution}}{\text{Contribution per unit}}$$

$$= \frac{\text{Rs.39,000}}{\text{Rs.5.50}} = 7{,}091 \text{ units}$$

Increase in Production required

= 7,091 units - 6,000 units = 1,091 units

Percentage increase over present Output

$$= \frac{1{,}091}{6{,}000} \times 100 = 18.18\%$$

Transfer Pricing

In the post economic liberalization, multinational companies started expanding their business transactions across the border. The rapid growth of economic activities of multinational groups led to various complex issues regarding taxation. The multinational groups have more inter business activities like transfer of goods or services. One group transfers the goods and services to another group. Such transfers cause the problem of pricing the goods or services.

Thus it may not comply with necessary rules and regulations while transferring goods or services. This noncompliance with statutory provisions may tend to create revenue loss to the exchequer. Hence, there is a need to provide statutory framework which will lead to compute the profits and tax in a fair manner.

Provisions Regulating Transfer Pricing in India

The Finance Act, 2001 introduced law of transfer pricing in India through sections 92A to 92F of the Indian Income Tax Act, 1961 which guides computation of the transfer price and suggests detailed documentation procedures.

Scope & Applicability

Transfer Pricing Regulations ("TPR") are applicable to the all enterprises that enter into an 'International Transaction' with an 'Associated Enterprise'. Therefore, generally it applies to all cross border transactions entered into between associated enterprises. It even applies to transactions involving a mere book entry having no apparent financial impact. The aim is to arrive at the comparable price as available to any unrelated party in open market conditions and is known as the Arm's Length Price ('ALP').

Transfer Pricing

"Transfer price" is a price at which the value of goods or services being transferred between independently operating units of an organization. But, the expression "transfer pricing" generally refers to prices of transactions between associated enterprises may be different from the prices at which an independent enterprise transfers to another the same goods or services.

Arm's Length Price

The term arm's length price refers to a price which is applied or proposed to be applied in a transaction between persons other than associated enterprises, in uncontrolled conditions.

Objectives of Transfer Pricing

There are three objectives that should be considered for settingout a transfer price.

Autonomy of the Division. The prices should seek to maintain the maximum divisional autonomy so that the benefits, of decentralization (motivation, better decision making, initiative etc.) are maintained. The profits of one division should not be dependent on the actions of other divisions,

Goal congruence: The prices should be set so that the divisional management's desire to maximize divisional earrings is consistent with the objectives of the company as a whole. The transfer prices should not encourage suboptimal decision-making.

Performance appraisal: The prices should enable reliable assessments to be made of divisional performance.

Determination of Arm's Length Price

The arm's length price in relation to an international transaction can be determined by any of the following methods, The most appropriate

method, may be chosen having regard to the nature of transaction or class of transaction or class of associated persons or functions performed by such persons or such other relevant factors as the Board may prescribed namely

(*a*) Comparable uncontrolled price method;

(*b*) Resale price method;

(*c*) Cost plus method;

(*d*) Profit split method;

(*e*) Transactional net margin method;

Suppose more than one price is determined by the most appropriate method, the arm's length price shall be taken to be the arithmetical mean of such prices:

In case, the variation between the arm's length price so determined and price at which the international transaction has actually been undertaken does not exceed five per cent of the latter, the price at which the international transaction has actually been undertaken shall be deemed to be the arm's length price.

Computation of Arm's Length Price

The Institute of Chartered Accountant of India (ICAI) has laid down certain guidelines which are to be followed when comparable uncontrollable price is determined. The guidelines are given below.

(a) Comparable Uncontrollable Price Method

i) Find out the price charged or paid for property transferred or services provided in a comparable uncontrolled transaction, or a number of such transactions, is identified,

ii) Adjust such price to account for differences, if any, between the international transaction and the comparable uncontrolled transaction, or between the enterprises entering into such transactions, which could materially affect the price in the open market;

iii) the adjusted price arrived at is taken to be an arm's length price in respect of the property transferred or services provided in the international transaction;

iv) If there is any variation between price charged (price paid) on the international transaction and arm's length price, then an adjustment has to be made in order to remove the variance.

(b) Resale Price Method

(i) Find out the international transaction through which property purchased or services obtained

(ii) Identify the price at which the property or services are resold or provided to a third party

(iii) Deduct the normal gross profit earned by the enterprise from the resale price of such property or services. The normal gross profit can be taken of a profit on a similar transaction made with unrelated party.

iv) The price so arrived at is further reduced by the expenses incurred by the enterprise in connection with the purchase of property or obtaining of service; The price so arrived at is adjusted to take into account the functional and other differences, including differences in accounting practices, if any, between the international transaction and the comparable uncontrolled transactions, or between the enterprises entering into such transactions, which could materially affect the amount of gross profit margin in the open market;

v) the adjusted price arrived at is taken to be an arm's length price in respect of the purchase of the property or obtaining of the services by the enterprise from the associated enterprise;

(c) Cost Plus Method

i) Find the direct and indirect costs of production incurred by the enterprise in respect of property transferred or services provided to an associated enterprise

ii) Find a comparable uncontrollable transaction or a series of transaction with a third party for same property or service

iii) The amount of a normal gross profit mark-up to such costs (computed according to the same accounting norms) arising from the transfer or provision of the same or similar property or services by the enterprise, or by an unrelated enterprise, in a comparable uncontrolled transaction, or a number of such transactions, is determined;

iv) The normal gross profit mark-up to account the functional and other differences, if any, between the international transaction and the comparable uncontrolled transactions,

v) The sum so arrived at, is taken to be an arm's length price in relation to the supply of the property or provision of services by the enterprise;

d) **Profit Split Method**

Which may be applicable mainly in international transactions involving transfer of unique intangibles or in multiple international transactions which are so interrelated determining the arm's length price of any one transaction, by which,

i) The combined net profit of the associated enterprises arising from the international transaction, in which they are engaged, is determined;

ii) The relative contribution made by each of the associated enterprises to the earning of such combined net profit, is then evaluated on the basis of the functions performed, assets employed or to be employed and risks assumed by each enterprise and on the basis of reliable external market data which indicates how such contribution would be evaluated by unrelated enterprise and on the basis of reliable external market data which indicates how such contribution would be evaluated by unrelated enterprises performing comparable functions in similar circumstances;

iii) The combined net profit is then split amongst the enterprises in proportion to their relative contributions,

iv) The profit thus apportioned to the assessee is taken into account to arrive at an arm's length price in relation to the international transaction;

e) Transactional Net Margin Method

i) The net profit margin realized by the enterprise from an international transaction entered into with an associated enterprise is computed in relation to costs incurred or sales effected or

assets employed or to be employed by the enterprise or having regard to any other relevant base;

ii) The net profit margin realised by the enterprise or by an unrelated enterprise from a comparable uncontrolled transaction or a number of such transactions is computed having regard to the same base;

iii) The net profit margin arising in comparable uncontrolled transactions is adjusted to take into account of the differences, if any, between the international transaction and the comparable uncontrolled transactions, or between the enterprises entering into such transactions, which could materially affect the amount of net profit margin in the open market;

iv) The net profit margin thus established is then taken into account

to arrive at an arm's length price in relation to be international transaction.

Illustration I

X Ltd., an Indian company, sells computer CPU to its 100 per cent subsidiary Y Ltd. in United States @ $ 50 per piece. X Ltd. also sells its computer CPU to another company Z Ltd. in United States @ $ 90 per piece. Total income of X Ltd. for the assessment year 2012-13 is 12,

00,000 which includes sales made for 100 computer CPU @ $ 50 to Y Ltd. Compute the arm's length price and taxable income of X Ltd. The rate of one dollar may be assumed to be equivalent to 47.

Solution

Computation of Arm's Length Price and Taxable Income of X Ltd.

Arm's length price:

100 x 90 x 47 = 4, 23,000

Total Income	12, 00, 000
Add: Arm's length price	4, 23,000
	16, 23,000
Less: Price charged 100 x 50 x 47	2, 35, 000
Taxable Income	13, 88, 000

Relevant Points

(1) Transfer pricing is the pricing of internal transfers between profit centres.

(2) Ideally the transfer prices should, promote goal congruence, enable effective performance appraisal and maintain divisional autonomy.

(3) Economy theory suggests that the optimum transfer price would be the marginal cost equal for buying division's marginal revenue product. Transfer prices should always be based on the marginal costs of the supplying division plus the opportunity costs to the organization as a whole.

(4) Because of information deficiencies, transfers pricing in practice does not always follow theoretical guidelines. Typically prices are market based, cost based or negotiated.

(5) Where an appropriate market price exists then this is an ideal transfer price. However, there may be no market for the intermediate product, the market may be imperfect, or the price may be considered unrepresentative.

(6) Where cost based systems are used then it is preferable to use standard costs to avoid transferring inefficiencies.

(7) Full cost transfer pricing for full cost plus a markup suffers from a number of limitations,; it may cause suboptimal decision-making.

The price is only valid at one output level, it makes genuine performance appraisal difficult.

(8) Provided that variable cost equates with economic marginal cost then transfers at variable cost will avoid gross sub optimality but performance appraisal becomes meaningless.

(9) Negotiated transfer prices will only be appropriate if there is equal bargaining power and if negotiations are not protracted.

Transfer price policies represent the selection of suitable methods relating to the computation of transfer prices under various circumstances. More precisely, transfer pricing should be closely related to management performance assessment and decision optimization. But the problem of choosing an appropriate transfer pricing for the two functions of management-performance measurement and decision optimization - does not hold any simple solution. There is no single measure of transfer price that can be adopted under all circumstances.

POSSIBLE QUESTIONS
UNIT III
PART B

1. Define the term budget
2. Define budgetary control
3. The sales of a concern for the next year is estimated at 50,000 units. Each unit of the product requires 2 units of Material „A and 3 units of Material "B. The estimated opening balances at the commencement of the next year are:

Finished Product	:	10,000
Raw Material „A	:	12,000
Raw Material „B	:	15,000

The desirable closing balances at the end of the next year are:

Finished Product	:	14,000
Raw Material „A	:	13,000
Raw Material „B	:	16,000

4. Write any two objectives of budgetary control
5. Material A: 60 tonnes @ Rs. 5 per tonne Material B: 40 tonnes @ Rs.10 per tonne Actual mixture being:

   Material A: 80 tonnes @ Rs.4 per tonne Material B: 70 tonnes @ Rs. 8 per tonne. Calculate
   Material Price Variance
   Material sub-usage Variance, and
   Material Mix Variance

6. Draw a chart showing the classification of budgets?
7. Write a note on zero base budgeting
8. With the help of the following information calculate
   (a) Labour cost variance
   (b) Labour Rate Variance
   (c) Labour Efficiency Variance

   Standard hours: 40@ Rs. 3 per hour Actual hours: 50@ Rs. 4 per hour
9. Define standard costing
10. What is meant by variance analysis?

11. Following is the data of a manufacturing concern. Calculate:-Material Cost Variance, Material Price Variance and Material usage variance.

    The standard quantity of materials required for producing one ton of output is 40 units. The standard price per unit of materials is Rs. 3. During a particular period 90 tons of output was undertaken. The materials required for actual production were 4,000 units. An amount of Rs. 14,000 units. An amount of Rs.14, 000 was spent on purchasing the materials

12. List out the different types of variance?

13. From the following particulars calculate the followings:

    A) Total Materials Cost Variance

    B) Materials Price Variance and

    C) Materials Usage Variance

Materials	Standard Units	Standard Price (Rs)	Actual Units	Actual Price (Rs)
A	1010	1.0	1080	1.2
B	410	1.5	380	1.8
C	350	2.0	380	1.9

14. The standard materials required for producing 100 units is 120 kgs. A standard price of 0.50 paise per kg is fixed 2,40,000 units were produced during the period. Actual materials purchased were 3,00,000 kgs. at a cost of Rs. 1,65,000. Calculate Materials Variance. (MCV - 21,000)

15. Write a note on sales budget

16. Give the meaning for market based transfer pricing

17. Define transfer price

***CIA- 3 X 2 = 6 (ANSWER ALL THE QUESTIONS)**
****ESE – 5 X 2 = 10 (ANSWER ALL THE QUESTIONS)**

PART C

1. Explain the different kinds of functional budget in detail?
2. Define budgetary control and also discuss the advantages and disadvantages of budgetary control?
3. Discuss the steps for establishing system of standard costing?
4. A manufacturing company submits the following figures relating to Product X for the first quarter of 2010:

   Sales Targets : January 60,000 units
   February 48,000 units
   March 72,000 units

   Stock position : 1st January 2010 (% of January 2010 sales) - 50%

   Stock position : 31st March 2010 - 40,000 units

   Stock position : end January & February (% of subsequent Month's Sales) - 50%

   You are required to prepare production budget for the first quarter of 2010.
5. The Royal Industries has prepared its annual sales forecast, expecting to achieve sales of Rs.30,00,000 next year. The Controller is uncertain about the pattern of sales to be expected by month and asks you to prepare a monthly budget of sales. The following sales data pertained to the year, which is considered to be representative of a normal year:

Month	Sales (Rs.)	Month	Sales (Rs.)
January	1,10,000	July	2,60,000
February	1,15,000	August	3,30,000
March	1,00,000	September	3,40,000
April	1,40,000	October	3,50,000
May	1,80,000	November	2,00,000
June	2,25,000	December	1,50,000

   Prepare a monthly sales budget for the coming year on the basis of the above data.
6. From the following budgeted figures prepare a Cash Budget in respect of three months to June 30, 2006.

Month	Sales Rs.	Materials Rs.	Wages Rs.	Overheads Rs.
January	60,000	40,000	11,000	6,200
February	56,000	48,000	11,600	6,600
March	64,000	50,000	12,000	6,800
April	80,000	56,000	12,400	7,200
May	84,000	62,000	13,000	8,600
June	76,000	50,000	14,000	8,000

Additional information:

1. Expected Cash balance on 1st April, 2006 – Rs. 20,000
2. Materials and overheads are to be paid during the month following the month of supply.
3. Wages are to be paid during the month in which they are incurred.
4. All sales are on credit basis.
5. The terms of credits are payment by the end of the month following the month of sales: Half of credit sales are paid when due the other half to be paid within the month following actual sales.
6. 5% sales commission is to be paid within in the month following sales
7. Preference Dividends for Rs. 30,000 is to be paid on 1st May.
8. Share call money of Rs. 25,000 is due on 1st April and 1st June.
9. Plant and machinery worth Rs. 10,000 is to be installed in the month of January and the payment is to be made in the month of June.

7. The following information at 50% capacity is given. Prepare a flexible budget and forecast the profit or loss at 60%, 70% and 90% capacity.

Fixed expenses:	Expenses at 50% capacity (Rs.)
Salaries	5,000
Rent and taxes	4,000
Depreciation	6,000
Administrative expenses	7,000
Variable expenses:	

Materials	20,000
Labour	25,000
Others	4,000
Semi-variable expenses:	
Repairs	10,000
Indirect Labour	15,000
Others	9,000

It is estimated that fixed expenses will remain constant at all capacities. Semi-variable expenses will not change between 45% and 60% capacity, will rise by 10% between 60% and 75% capacity, a further increase of 5% when capacity crosses 75%.

Estimated sales at various levels of capacity are:

Capacity	Sales
60%	1,10,000
70%	1,30,000
90%	1,50,000

8. From the following forecasts of income and expenditure, prepare a cash Budget for the month January to April, 2006.

Months	Sales (Credit) Rs.	Purchases (Credit) Rs.	Wages Rs.	Manufacturing expenses Rs.	Administrative expenses Rs.	Selling expenses Rs.
2005 Nov.	30,000	15,000	3,000	1,150	1,060	500
Dec.	35,000	20,000	3,200	1,225	1,040	550
2006 Jan.	25,000	15,000	2,500	990	1,100	600
Feb.	30,000	20,000	3,000	1,050	1,150	620
Mar.	35,000	22,500	2,400	1,100	1,220	570
Apr.	40,000	25,000	2,600	1,200	1,180	710

Additional information is as follows:

1. The customers are allowed a credit period of 2 months.
2. A dividend of Rs. 10,000 is payable in April.
3. Capital expenditure to be incurred: Plant purchased on 15th of January for Rs.5,000;

4. A building has been purchased on 1st March and the payments are to be made in monthly installments of Rs. 2,000 each.
5. The creditors are allowing a credit of 2 months.
6. Wages are paid on the 1st of the next month.
7. Lag in payment of other expenses is one month.
8. Balance of cash in hand on 1st January, 2006 is Rs. 15,000
9. The expenses of budgeted production of 20,000 units in a factory are furnished below:

Particulars	Per unit (Rs.)
Materials	140
Labour	50
Variable overheads	40
Fixed overheads	20
Variable expenses (direct)	10
Selling expenses (10% fixed)	26
Distribution expenses (20% fixed)	14
Administrative expenses	10

Prepare a Flexible Budget for the production of 16,000 units and 12,000 units. Indicate cost per unit at both the levels.

10. From the following information, calculate material mix variance:

	Standard		Actual	
Materials	Quantity (units)	Price per unit Rs.	Quantity (units)	Price per unit Rs.
A	40	10	50	12
B	60	5	50	8

	Standard		Actual	
Materials	Quantity (units)	Price per unit Rs.	Quantity (units)	Price per unit Rs.
A	50	2.00	60	2.25

B	100	1.20	90	1.75

Due to the shortage of material A, the use of material „A was reduced by 10% and that of „B increased by 5%

11. Transfer Pricing is one of the most important issue in international tax"
Do you agree with this statement? Explain

***CIA - 3 X 8 = 24 (EITHER OR TYPE)**
****ESE – 5 X6 = 30 (EITHER OR TYPE)**

UNIT IV

Standard Costing and Variance Analysis - Meaning of Standard Cost - Standard Costing, Advantages - Limitations and Applications - Material - Labour - Overhead and Sales variances. Introduction to Target Costing - Life Cycle Costing - Quality Costing - Activity Based Costing.

STANDARD COSTING

Standard costing is a specialized technique of costing under which standard costs are pre-determined, actual costs are compared with such pre-determined costs, the variations between the two are noted and analysed as to their causes so that corrective measures may be taken to control the factors leading to unfavorable variations.

The system of standard costing, thus, involves various steps- from the setting up of standards to finally exercising control over cost. It aims at assessing or prefixing the costs of a product, process or operation under standard operating conditions. It serves as an effective tool in the hands of the operating conditions. It serves as an effective tool in the hands of the management for planning, coordination and control of various activities of the business.

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DEFINITION

According to the Chartered Institute of Management Accountants, London, Standard Costing is " the preparation and use of standard costs, their comparison with actual costs, and tahe analysis of variances to their causes and points of incidence."

According to W.W. Bigg, " Standard Costing discloses the cost of deviations from standard and classifies these as to their causes, so that management is immediately informed of the sphere of operations in which remedial action is necessary."

Thus standard costing is a method of ascertaining costs whereby statistics are prepared to show :

The standard costs,

The actual costs: and

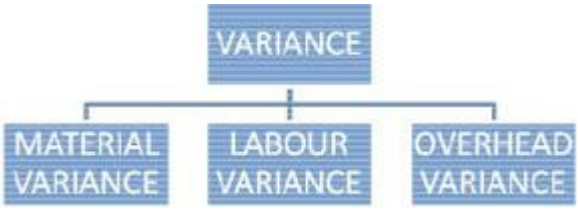
The difference between these costs which is termed as variance.

Standard costs are determined for each element of cost – direct materials, direct labour, overheads (Fixed and Variable)

VARIANCE ANALYLSIS:

If the deviation of the actual cost or profit or sales from the standard cost or profit or sales is known as variance. If the actual cost is less than the standard cost, it is favourable. If the actual cost is more than the standard cost, it is unfavourable or adverse.

TYPES OF VARIANCE ANALYSIS



MATERIAL VARIANCES:

Material Cost Variance = Standard cost of materials for actual output – Actual cost of material used

Material Price Variance = Actual usage (Standard unit price – Actual unit price)

Material Usage Variance Or Quantity Variance = Standard price per unit (Standard quantity + Actual quantity)

Material Mix Variance:

A) Actual weight of mix and standard weight of mix do not differ:
MMV = Standard unit cost (Standard quantity - Actual quantity) or

Standard cost of revised standard mix - Standard cost of revised actual mix

B) Actual weight of mix differs from standard weight of mix:

MMV = Total weight of actual mix /Total weight of revised standard mix – standard cost of actual mix.

Material Yield Variance :

A) When standard and actual mix do not differ:
MYV = Standard rate (Actual yield – Standard Yield)

Standard rate = Standard cost of standard mix / Net standard output

B) When actual mix differs from standard mix :
MYV = Actual Yield - revised standard yield

Labour Variances:

a) Labour Cost Variance = Standard cost of labour - Actual cost of labour

b) Labour rate Variance = Actual time taken (Standard rate – Actual rate)

c) Total Labour Efficiency Variance = Standard rate (standard time for actual output – Actual time paid for)

d) Labour Efficiency Variance : Standard rate (Standard time for actual output - Actual time worked)

Standard Costing and Variance Analysis Problems & Solution:

Problem 1:

Materials Variance Analysis:

The Schlosser Lawn Furniture Company uses 12 meters of aluminum pipe at $0.80 per meter as standard for the production of its Type A lawn chair. During one month's operations, 100,000 meters of the pipe were purchased at $0.78 a meter, and 7,200 chairs were produced using 87,300 meters of pipe. The materials price variance is recognized when materials are purchased.

Required: Materials price and quantity variances.

Solution:

	Meters of pipe	Unit Cost	Amount
Actual quantity purchased	100,000	$0.78 actual	$78,000
actual quantity purchased	100,000	$0.80 standard	$80,000
Materials purchase price variance	100,000	$(0.02)	$(2,000) fav.
Actual quantity used	87,300	0.80 standard	$69,840
Standard quantity allowed	86,400	0.80 standard	$69120
Materials quantity variance	900	0.80	$720 Unfav

Problem 2:

Materials Variance Analysis:

The standard price for material 3-291 is $3.65 per liter. During November, 2,000 liters were purchased at $3.60 per liter. The quantity of material 3-291 issued during the month was 1775 liters and the quantity allowed for November production was 1,825 liters. Calculate materials price variance, assuming that:

Required: Materials price variance, assuming that:

1. It is recorded at the time of purchase (Materials purchase price variance).
2. It is recorded at the time of issue (Materials price usage variance).

Solution:

	Liters	Unit cost	Amount
Actual quantity purchased	2,000	3.60 actual	$7,200
Actual quantity purchased	2,000	3.65 standard	7,300
Materials purchase price variance	2,000	$ (0.05)	$(100) fav.
Actual quantity used	1775	3.60 actual	$6390.00
Actual quantity used	1775	3.65 standard	$6478.75
Materials price usage variance	1775	$(0.05)	(88.75)

Problem 3:

Labor Variance Analysis:

The processing of a product requires a standard of 0.8 direct labor hours per unit for Operation 4-802 at a standard wage rate of $6.75 per hour. The 2,000 units actually required 1,580 direct labor hours at a cost of $6.90 per hour.

Required: Calculate:

1. labor rate variance or Labor price variance.
2. Labor efficiency or usage or quantity variance.

Solution:

	Time	Rate	Amount
Actual hours worked	1,580	$6.90 actual	$10,902
Actual hours worked	1.580	$6.75 standard	10,665

	--------	--------	--------
Labor rate variance	1,580	$0.15	$237 unfav.
	=====	=====	=====
Actual hours worked	1,580	$6.75 standard	$10,665
Standard hours allowed	1,600	$6.75 standard	$10,800
	----------	----------	----------
Labor efficiency variance	(20)	6.75 standard	$(135) fav.
	======	======	======

Problem 4:

Factory Overhead Variance Analysis:

The Osage Company uses a standard cost system. The factory overhead standard rate per direct labor hour is:

Fixed:	$4,500 / 5,000 hours	=	$0.90
Variable:	$7,500 / 5,000 hours	=	$1.50

			$2.40

For October, actual factory overhead was $11,000 actual labor hours worked were 4,400 and the standard hours allowed for actual production were 4,500.
Required: Factory overhead variances using two, three and four variance methods.

Solution:
Two Variance Method:

Actual factory overhead

Budgeted allowance based on standard hours allowed:

Fixed expenses budgeted

Variable expenses (4,500 standard hours allowed × $1.50 variable overhead rate)

Favorable controllable variance

Budgeted allowance based on standard hours allowed

Overhead charged to production (4,500 standard hours allowed × $2.40 standard rate)

Unfavorable volume variance

Three Variance Method:

Actual factory overhead

Budgeted allowance based on actual hours worked:

Fixed expenses budgeted

Variable expenses (4,400 actual hours worked × $1.50 variable overhead rate)

Favorable spending variance

	$11,000
$4,500	
$6,750	
----------	$11,250

	$ (250)
	fav.
	======
	$11,250
	$10,800

	$450
	unfav.
	======
	$11,000
$4,500	
$6,600	
----------	$11,100

	$ (100)
	fav.
	======

Budgeted allowance based on actual hours worked
Actual hours worked × Standard overhead rate (4,400 hours × $2.40)

Unfavorable spending variance

Actual hours worked × Standard overhead rate (4,400 hours × $2.40)
Overhead charged to production (4,500 standard hours allowed × $2.40 standard rate)

Favorable efficiency variance

Four Variance Method:

Actual factory overhead
Budgeted allowance based on actual hours worked:
Fixed expense budgeted
Variable expenses (4,400 actual hours worked × $1.50 variable overhead rate)

Favorable spending variance

Budgeted allowance based on actual hours worked
Budgeted allowance based on standard hours allowed

Favorable variable overhead efficiency variance

Actual hours × fixed overhead rate (4,400 actual hours × $0.90 fixed overhead rate)
Standard hours allowed × fixed overhead rate (4,500 actual hours × $0.90)

Favorable fixed overhead efficiency variance

Normal capacity hours (5000) × Fixed overhead rate ($0.90)
Actual hours worked (4,400) × Fixed overhead rate ($0.90)

Unfavorable Idle capacity variance (600 hours × $0.90)

$11,100 unfav.

$10,560

$540
unfav.
======

$10,560

$10,800

$ (240)
fav.
=====

$11,000

$4,500

$6,600

--- $11,100

$ (100)
fav.
======

$11,100

$11,250

$ (150)
fav.
======

$3,960

4,050

$ (90)
fav.
======

$4,500

$3,960

$540

Problem 5:

Variance Analysis:

On May 1, Bovar Company began the manufacture of a new mechanical device known a "Dandy." The company installed a standard cost system in accounting for manufacturing costs. Thestandard costs for a unit of Dandy are:

Materials: 6 lbs. at $1 per lb.	$ 6.00
Direct labor: 1 hour at $4 per hour	$ 4.00
Factory overhead: 75% of direct labor cost	$ 3.00
Total	$13.00

The following data were obtained from Bovar's record for may:

Actual production of Dandy	4,000 units
Units sold of Dandy	2,500
Sales	$50,000
Purchases (26,000 pounds)	27,300
Materials price variance (applicable to May purchase)	$1,300 unfavorable
Materials quantity variance	1,000 unfavorable
Direct labor rate variance	760 unfavorable.
Direct labor efficiency variance	800 favorable
Factory overhead total variance	500 unfavorable

Required:

1. Standard quantity of materials allowed (in pounds).
2. Actual quantity of materials used (in pounds).
3. Standards hours allowed.
4. Actual hours allowed.
5. Actual direct labor rate.
6. Actual total factory overhead.

Solution:

Actual production	4,000 units
Standard materials per unit	6 pounds
	24,000 pounds

Standard quantity of materials allowed	
Unfavorable materials quantity variance ($1,000 variance / $1 standard price per pound)	1,000 pounds
Actual quantity of materials used	25,000 pounds
Actual production	4,000 units
Standard hours per unit	1 hour
Standard hours allowed	4,000 hours
Standard hours allowed	4,000 hours
Favorable direct labor efficiency variance ($800 variance / $4 standard rate per direct labor hour)	(200) hours
Actual hours worked	3,800 hours
Standard direct labor rate	$4.00
Unfavorable direct labor rate variance ($760 variance / 3,800 hours actually worked)	0.20
Actual direct labor rate	$4.20
Standard factory overhead (4,000 units produced × $3 standard overhead rate per unit)	$12,000
Unfavorable factory overhead variance	500
Actual total factory overhead	$12,500

ACTIVITY BASED COSTING

Activity-Based Costing (ABC) is a costing model that identifies activities in an organization and allocates the indirect resources to each activity for completion of the production of goods and services. It relates indirect cost to the activities that drive them to be incurred.

In traditional costing system, the indirect costs are allocated on the basis of volume of output. Over a period of time, the technology has been improved and it requires adopting a change in method of cost structures for the allocation of overhead on the basis of cost drivers.

Definition

Activity Based costing is "A method of measuring the cost and performance of activities and cost objects. Assigns cost to activities based on their use of resources and assigns cost to cost objects based on their use of activities. ABC recognizes the causal relationship of cost drivers to activities."

-- Peter B. B. Turney

Some examples of indirect costs and their drivers are:

1. **Maintenance costs** are indirect costs and the possible driver of this cost may be the number of machine hours,
2. **Handling raw-material cost** is another indirect cost that may be driven by the number of orders received,
3. **Inspection costs** that are driven by the number of inspections or the hours of inspection or production runs.

Generally, the cost driver for short term indirect variable costs may be the volume of output/ activity; but for long term indirect variable costs, the cost drivers cannot be related to volume of output/ activity.

Example

The activity is delivering goods. The costs of this activity include the truck drivers' wages, fuel, depreciation of the truck, insurance, etc. The quantities of the resources that will be consumed by this activity are influenced by the number of deliveries made per year. Hence the cost driver could be the number of deliveries. A cost driver is designed to allocate the delivery activity cost pool to the cost objects.

The activity driver measures how much of the activity is used by the cost object. **Example:** Product A is delivered once a month, whereas product B is delivered once a week. Products A and B require a different number of deliveries, hence the cost of the delivery activity should be assigned to each product on the basis of the number of deliveries each uses.

We can classify the cost drivers into two categories such as structural and execution. **Structural cost drivers** that are derived from the business strategic choices about its underlying economic structure such as scale and scope of operations, complexity of products, use of technology, etc and **Execution cost drivers** that are derived from the execution of the business activities such as capacity utilization, plant layout, work-force involvement, etc.

The establishment of cost drivers are essential for the different cost pool stream to carry out Activity based costing. It is developed to provide more-accurate ways of assigning the costs of indirect and support resources to activities, business processes, products, services, and customers.

ABC systems recognize that many organizational resources are required to provide a wide arrangement of support activities that enable a variety of products and services to be produced for a varied group of customers. The ABC goal is to measure and then price out all the resources used for activities that support the production and delivery of products and services to customers.

The basis of Activity Based Costing is

1. Identify the activities required to produce the cost of the product or service.
2. Allocate the resources on each activity
3. Establish the cost drivers on each activity and count its numbers,
4. Determine the cost per cost drivers,
5. Determine the amount of activity required for each product and service
6. Determine the real cost for a single product or services.

ACTIVITY	COST DRIVER
Production set-up	Number of production runs
Production control changes	Number of production process
Engineering orders	Number of engineering change
Maintenance	Number of machine hours
Power	Number of kilowatt hours

Difference between Traditional Cost System and Activity Based costing system

1 Uses Unit Based Costing Recognizes activities are the causes of costs

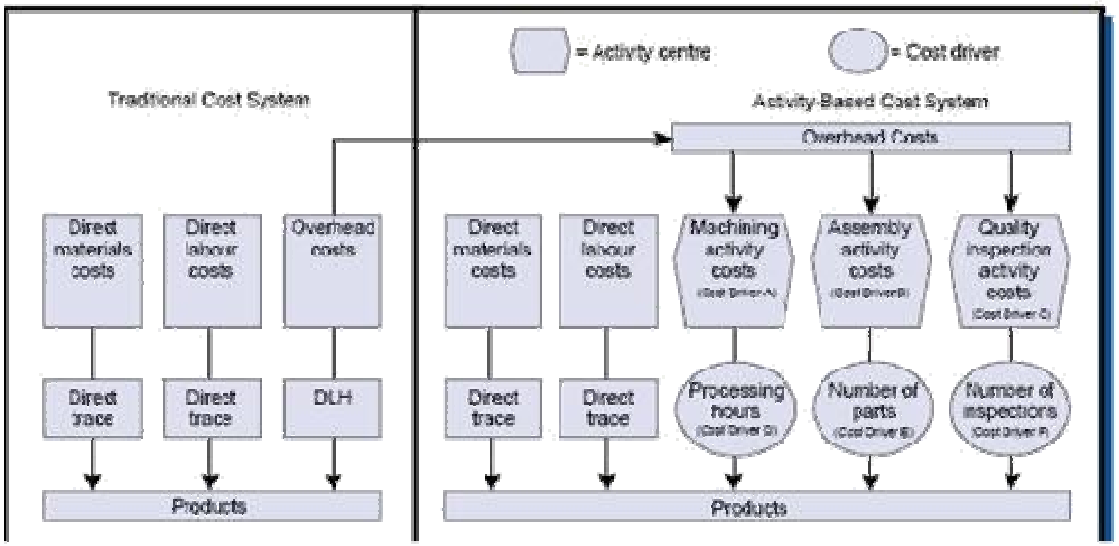
2 Geared to manufacturing Concepts can be implemented environments outside manufacturing

3 Useful in a one product Valuable in a multi-product environment environment

4 External reporting focus Internal management decision making focus

5 Potential for poor decisions due Potential to cut costs by to product cross-subsidization identifying the “true” costs of the product and increase profitability

System of traditional and ABC



In Traditional cost models the resources are applied to products in two ways. That is known as direct costs and indirect cost. The direct cost is the cost which is attributed directly to the product e.g., material and direct labor whereas the indirect cost like sales, marketing and administrative costs are not included in product costs.

Activity Based Costing (ABC) does not change the way material and direct labor are attributed to manufactured products. The primary task of activity based costing is to break out indirect activities into meaningful pools which can then be assigned to processes in a manner which better reflects the way costs are actually incurred. The system must recognize that resources are consumed by processes or products in different proportions for each activity.

All costs are existed in resources like material, labor, space, equipment and services. Resources are consumed by activities which have no inherent cost. The cost associated with activities represents the amount of resource they consume per unit of activity. Resources and activities are then applied to cost objects, that is, the purpose for which the resource is consumed and the activity is performed.

The resource and activity is measured in terms of units which defines the amount of the resource consumed or activity required by a unit of demand for it. Resources can be consumed by resources (e.g. office space resource is consumed by an employee resource), by activities (e.g. telephone resource is consumed by a customer service call activity) or by cost objects (e.g. material resource is consumed by a product cost object).

Activities can be performed in support of another activity (e.g. invoice printing activity supports the billing activity) or in response to a cost object (e.g. purchase orders are issued to support the material acquisition process). A cost object can be a process or product and either an interim cost object or an end user (customer) cost object. For example, hiring personnel may be a cost object of Human Resources Department utilizing space, utility, telephone, supply and labor resources and performing advertising, calling, interviewing and orientation activities. That cost object may be a resource used by other departments to secure labor resource for their department.

A network of resources, activities and cost objects are to be constructed in the operational flow of the process. Each resource and activity has a unit of measure which converts them at a unit of demand rate. First, we need to understand the business process and it is to be identified and develop a cost model. The cost model is essential and it must be useful

and effective in determining the process. The costs are attached to determine the cost of the defined process.

Activity-Based-Costing is necessary for the following reasons.

To Understand True profitability of the customers, products, or services

To Quantify the cost of non-value added activities such as errors and reworks,

To Identify opportunities to reduce costs and/or increase efficiency,

To Obtain actionable information to negotiate price increases for unprofitable clients,

To Understand why profitability may be mediocre despite good Strategic fundamentals,

To Stratify overhead costs so they can be managed more effectively

ABC Model

The objective of an ABC implementation is to relate all of the costs of doing business to products, services, or customers. Developing the initial model consists of the following five steps:

1. Identification of the Resources (expenditures) of an organization
2. Determination of Activities (work performed) that are supported by Resources
3. Description of the Cost Objects (products, services, customers)
4. Development of Resource Drivers to link Resources to Activities
5. To Develop the Cost Drivers to link Activities to Cost Objects

1: Identification of Resources

Resources represent the expenditures of an organization.

Example: production labour, sales and marketing labor, occupancy and utilities, equipment, and supplies. These are the same costs that are represented in a traditional accounting view; unlike traditional accounting, ABC links these costs to products, customers, or services.

2: Determination of Activities

Activities represent the work performed in an organization.

Example: ABC Activities for the sales department in a typical organization might include: Making sales calls to existing customers, Making sales calls to potential customers, Making customer service calls, Training product representatives, Evaluating products and improving product knowledge, Distributing samples, Attending trade shows and other events.

In traditional accounting, the cost of the sales department is breaking into salaries, benefits, allocated rent, supplies, and so on. Unlike traditional accounting, which reports what the costs are (i.e. salaries, benefits, rent); ABC accounts for these costs based on what activities caused them to occur. By determining the actual activities that occur in

various departments, such as accounting, customer service, and sales, it is then possible to more accurately relate these costs to customers, products, and services.

3: Description of the Cost Objects

ABC provides profitability by one or more cost object, usually represented by products, customers, and/or services. Cost Object profitability is utilized to identify money losing customers, to validate separate divisions or business units, or to measure the performance of individual projects, jobs, or contracts. Defining the outputs to be viewed is an important step in a successful ABC implementation.

4: Determination of Resource Drivers

Resource Drivers provide the link between the expenditures of an organization and the Activities performed within the organization.

For example, the total salary of a customer service representative would likely be allocated to the Activities performed based on the amount of time spent performing the Activity. If 50% of her time is spent performing the activity, taking orders for existing customers, 50% of her salary (including all costs such as benefits, taxes, and insurance) would be allocated to this Activity.

5: Determination of Cost Drivers

Determination of Cost Drivers completes the last stage of the model. Cost Drivers trace, or link, the cost of performing certain Activities to Cost Objects.

For example, taking orders for existing customers may be linked to specific customers based on the number of orders taken, if each order takes approximately the same amount of time. If order taking time varies based on the customer, this cost may be linked based on another driver or multiple drivers.

Today, companies are using ABC to make better-informed decisions about pricing, what type of customers to pursue, and what products or services to offer. Activity-Based Costing determines the TRUE COST & PROFITABILITY of customers, products, and/or services. While traditional accounting may provide the business with an accurate sense of the direct costs of the products or services, indirect costs are often less accurately applied. Overhead, such as customer support or marketing costs tend to be allocated based on arbitrary factors.

Activity-Based Costing measures the costs and profits of an organization based on the activities performed within that organization. By focusing on processes that contribute to revenues and business operations, ABC can accurately determine how each process relates back to specific products, customers, or services. This can make a big difference after considering warehouse, sales, customer service, administration and other costs that are often applied at a standard rate, if at all. With ABC, he organization can drill into profitability and performance and any other factor.

TARGET COST

Target cost is the maximum amount of cost that can be incurred on a product, however, the firm can still earn the required profit margin from that product at a particular selling price. Target costing decomposes the target cost from product level to component level. Broadly speaking, a target costing system has three objectives:

a. To lower the costs of new products so that the required profit level can be ensured.

b. The new products meet the levels of quality, delivery timing and price required by the market.

c. To motivate all company employees to achieve the target profit during new product development by making target costing a companywide profit management activity.

For any system to be effective in supporting decision making in an organization, the staff from the relevant departments must come together in order to tap their creativity so as to achieve goals. In other words, the company requires a non-conflicting and rational system for consensus building and decision-making.

5. Target Costing Process:

Just as there is no single definition of target costing, there is no single target costing process.

Nevertheless, all companies share a series of general steps:

a. Establishing the target price in the context of market needs and competition;

b. Establishing the target profit margin;

c. Determining the allowable cost that must be achieved; this cost should motivate all personnel to achieve;

d. Calculating the probable cost of current products and processes; and finally,

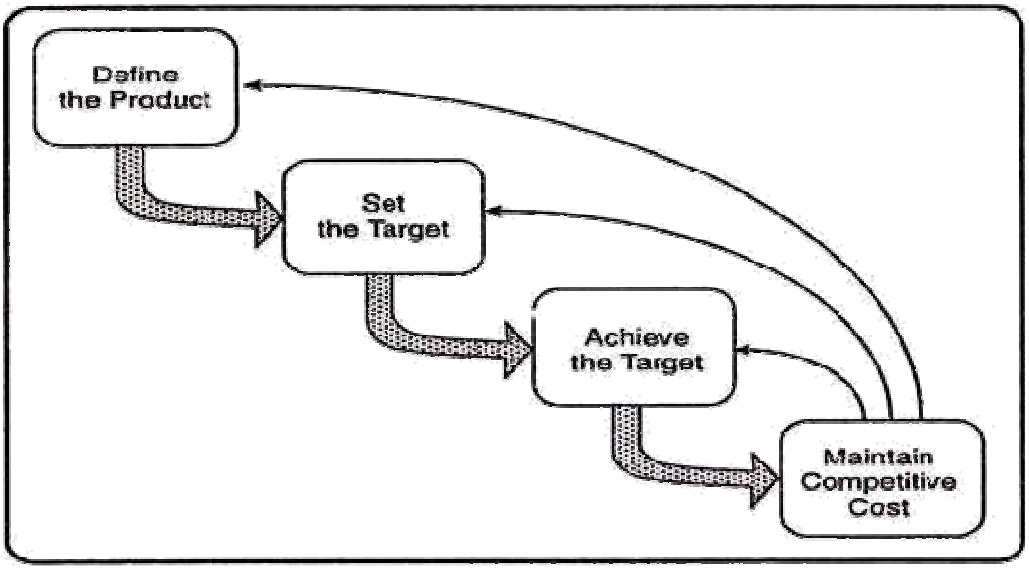
e. Establishing the target amount by which current costs must be reduced.

Once the target cost has been calculated, companies take the following steps to achieve it:

a. Establishing a cross functional team, which is involved in the implementation process from the earliest design stages,

b. Using tools such as value engineering in the design process; and

c. Pursuing cost reductions using **"kaizen costing"** once production has started.



A number of techniques and tools facilitate an effective and efficient costing process. Three externally oriented analyses market assessment tools, industry and competitive analysis and reverse engineering provide a firm with a foundation for defining the proposed new product and establishing its price.

The determination of the target profit margin relies heavily on the comprehensive and detailed financial planning and statement analysis. Every firm has relationship between prices, volumes and revenues; costs and investments, in the aggregate and for specific product lines and individual products. The management team should explore other tools like value engineering and quality function deployment.

6. Advantages of Target Costing: Main advantages of target costing are:

a. It reinforces top to bottom commitment to process and product innovation to achieve some competitive advantages.

b. It helps to create a company's market-driven management for designing and manufacturing products that meet the price required for the market success.

c. It uses management control system to support and reinforce manufacturing strategies, and to identify market opportunities that can be converted into real saving to achieve the best value for money rather than simply achieving the lowest cost.

d. Assures that products are better matched to their customers' needs.

e. Aligns the costs of features with customers' willingness to pay for them.

f. Reduces the development cycle of a product.

g. Reduces the costs of products significantly.

h. Increases the teamwork among all internal organizations associated with conceiving, marketing, planning, developing, manufacturing, selling, distributing and installing a product.

i. Engages customers and suppliers to design the right product and to more effectively integrate the entire supply chain.

7. Reasons for the Late Development of Target Costing:

Although target costing emerged more than 30 years ago, yet only in 1990's this system came into notice. Main reasons for late popularity of target costing could possibly be that target costing focuses heavily on new product development and Japanese companies which practice the system most are very secretive about their new products/activities.

Also, popularity of Japanese Just-in-time inventory system had dominated the attention of industry in 1980's and, therefore, target costing got the second seat.

8. Problems with Target Costing:

Talk with customers about a new product concept, find out which features they like and don't like, and find out how much they would pay. Subtract an acceptable profit margin, and you're left with the target cost of the product. Now all you have to do is get everyone inside and outside the company to adhere to this number. It sounds simple enough.

It is easier said than done. Yet, target costing-a cost-management process imported from Japan—is helping a few dozen companies in the United States gain an edge by having them listen harder to customers to gauge the right product or service price.

Boeing, Eastman Kodak, and Honda of America, for example, as well as pioneers Daimler Chrysler and Caterpillar, have implemented the strategy, reversing the way they traditionally design, price, and sell new products.

Companies that have implemented the cost-management strategy insist they have boosted profitability. But, although virtually the entire Japanese manufacturing sector has gone the target-costing route since its inception in the 1970s, it hasn't exactly taken root here in India.

Target Costing has a few problems that one should be aware of and guard against. These

problems are as follows:

a. The development of the process can be lengthened to a considerable extent since the design team may require a number of design iterations before it can devise low cost product that meets the

target cost and margin criteria. This occurrence is most common when the project manager is unwilling to discontinue a design project that cannot meet its costing goals within a reasonable time frame.

Usually, If there is no evidence, it is better to either drop a project or at least shelve it for a short time and then try again, on the belief that new cost reduction methods or less expensive materials will be available in the near future that will make the target cost an achievable one.

b. A large amount of mandatory cost cutting can result in finger pointing in various parts of the company; especially if employees in one area feel they are being called on to provide a disproportionately large part of the saving.

For example the industrial staff will not be happy if it is required to completely alter the production layout in order to generate cost saving, while the purchase staff is not required to make any cost reductions through supplier negotiations. Avoiding this problem requires strong interpersonal and negotiation skills on the part of the project manager.

c. A design team having representatives from the number of departments can sometimes make it more difficult to reach a consensus on the proper design because there are too many opinions regarding design issues.

Life-Cycle Costing

Life-Cycle Costs are all the costs associated with the product for its entire life cycle. Product life cycle costing traces costs and revenues of each product over several calendar periods throughout their entire life cycle.

The costs are included in different stages of the product life cycle.

Development phase -R&D cost/Design cost.

Introduction phase – Promotional cost/Capacity costs.

Growth phase/Maturity – Manufacturing cost/Distribution costs/Product support cost.

Decline/Replacement phase – Plants reused/sold/scrapped/related costs.

Manufacturers would base life cycle costing expense allocations on an expected number of units to be sold over the product's life. Each period's internal income statement using life cycle costing would show revenues on a life-to-date basis along-with total cost of goods sold, total R and D project costs and total distribution and other marketing costs.

Benefits:

The following are the benefits of product life cycle costing:

(i) It results in earlier actions to generate revenue or to lower costs than otherwise might be considered.

(ii) It ensures better decision from a more accurate and realistic assessment of revenues and costs, at-least within a particular life cycle stage.

(iii) It promotes long-term rewarding.

(iv) It provides an overall framework for considering total incremental costs over the life span of the product.

Effects of Life-Cycle Costing:

Life cycle costing helps companies to be aware of where their products are in their life cycles, because in addition to the sales effects, the life-cycle stage may have a tremendous impact on costs and profits. The life-cycle impact on each of these items is shown in the following table

Stage	Costs	Approach to Costing	Sales	Profits
Development	No production costs, but R&D costs very high	Target costing	None	None; large loss on product due to expensing of R&D costs
Introduction	Production cost per unit; probably engineering change costs; high advertising cost	Kaizen costing	Very low unit sales; selling price may be high (for early profits) or low (for gaining market share)	Typically losses are incurred partially due to expensing of advertising
Growth	Production cost per unit decreases (due to learning curve and spreading fixed overhead over many units)	Kaizen costing	Rising unit sales; selling price is adjusted to meet competition	High
Maturity	Production cost per unit stable; costs of increasing product mix begin to rise	Standard costing	Peak unit sales; reduced selling price	Falling
Decline	Production cost per unit increases (due to fixed overhead being spread over a lower volume)	Standard costing	Falling unit sales; selling price may be increased in an attempt to raise profits or lowered in an attempt to raise volume	May return to losses

POSSIBLE QUESTIONS

UNIT IV

PART B

1. Define target costing
2. What is meant by life cycle cost?
3. Define total cost

4. Material A: 60 tonnes @ Rs. 5 per tonne Material B: 40 tonnes @ Rs.10 per tonne Actual mixture being:

Material A: 80 tonnes @ Rs.4 per tonne Material B: 70 tonnes @ Rs. 8 per tonne. Calculate
Material Price Variance
Material sub-usage Variance, and
Material Mix Variance

5. With the help of the following information calculate

(a) Labour cost variance

(b) Labour Rate Variance

(c) Labour Efficiency Variance

Standard hours: 40@ Rs. 3 per hour Actual hours: 50@ Rs. 4 per hour

6. Define standard costing

7. Following is the data of a manufacturing concern. Calculate:-Material Cost Variance, Material Price Variance and Material usage variance.

   The standard quantity of materials required for producing one ton of output is 40 units. The standard price per unit of materials is Rs. 3. During a particular period 90 tons of output was undertaken. The materials required for actual production were 4,000 units. An amount of Rs. 14,000 units. An amount of Rs.14, 000 was spent on purchasing the materials

8. List out the different types of variance?
9. From the following particulars calculate the followings:
   A) Total Materials Cost Variance
   B) Materials Price Variance and
   C) Materials Usage Variance

Materials	Standard Units	Standard Price (Rs)	Actual Units	Actual Price (Rs)
A	1010	1.0	1080	1.2
B	410	1.5	380	1.8
C	350	2.0	380	1.9

10.The standard materials required for producing 100 units is 120 kgs. A standard price of 0.50 paise per kg is fixed 2,40,000 units were produced during the period. Actual materials purchased were 3,00,000 kgs. at a cost of Rs. 1,65,000. Calculate Materials Variance. (MCV - 21,000)

***CIA - 3 X 2 = 6 (ANSWER ALL THE QUESTIONS)**
****ESE - 5 X 2 = 10 (ANSWER ALL THE QUESTIONS)**

PART C

1. "Target cost is an approach to determine a product life cycle cost which is sufficient to develop specified functionality and quality" Discuss

2. Structural cost should be managed and planned according to quantitative and qualitative required for internal activities not related to product standard of performance" Elaborate

3. Describe the benefits of Target Costing.

4. Describe the major characteristics of life cycle cost concept?

5. From the following information, calculate material mix variance:

	Standard		Actual	
Materials	Quantity (units)	Price per unit Rs.	Quantity (units)	Price per unit Rs.
A	40	10	50	12
B	60	5	50	8

	Standard		Actual	
Materials	Quantity (units)	Price per unit Rs.	Quantity (units)	Price per unit Rs.
A	50	2.00	60	2.25
B	100	1.20	90	1.75

Due to the shortage of material A, the use of material „A was reduced by 10% and that of „B increased by 5%

6. "ABC system recognizes the relationship between costs, activities and products and it assigns indirect costs to products" Describe this statement with suitable illustration?

7. "Activity Based Costing is an accounting method that identifies the activities that a firm performs" Comment

8. "Activity Based Costing is a best tool for controlling and reducing the cost" Comment

9. "Activity Based Costing identifies the activities that a firm performs" Comment

10. Explain the advantages and limitations of standard costing?

***CIA- 3 X 8 = 24 (EITHER OR TYPE)**
****ESE – 5 X6 = 30 (EITHER OR TYPE)**

UNIT V

Funds Flow Statement - Schedule of Changes in Working Capital - Calculation of Funds from Operation - Sources and Applications of Funds. Cash Flow Statement - Cash from Operation -Inflow and Outflow of Funds.

FUNDS FLOW ANALYSIS

Every business establishment usually prepares the balance sheet at the end of the fiscal year which highlights the financial position of the yester years It is subject to change in the volume of the business not only illustrates the financial structure but also expresses the value of the applications in the liabilities side and assets side respectively. Normally, Balance sheet reveals the status of the firm only at the end of the year, not at the beginning of the year. It never discloses the changes in between the value position of the firm at two different time periods/dates.

MEANING OF FUND FLOW STATEMENT ANALYSIS

A report on the movement of funds or working capital. In a narrow sense the term fund means cash and the fund flow statement depicts the cash receipts and cash disbursements/ payments. It highlights the changes in the cash receipts and payments as a cash flow statement in addition to the cash balances i.e., opening cash balance and closing cash balance. Contrary to the earlier, the fund means working capital i.e., the differences between the current assets and current liabilities.

The term flow denotes the change. Flow of funds means the change in funds or in working capital. The change on the working capital leads to the net changes taken place on the working capital i.e., especially due to either increase or decrease in the working capital. The change in the volume of the working capital due to numerous transactions. Some of the transactions may lead to increase or decrease the volume of working capital. Some other transactions neither registers an increase nor decrease in the volume of working capital.

Meaning of Funds

The term funds have been defined in number of ways in a narrow sense it means cash only. In a broader sense funds means all financial resources used in business whether in the form of men, materials, money, machinery and others. In Popular sense It means the working capita, it may be increased or decreased. Funds Flow Statement :

The Funds Flow Statement is a Statement which shows the movement of funds is a report of the financial operations of the business undertaking. It indicates various means by which funds were obtained during a particular period and the ways in which these funds were employed. In simple words it is a statement of sources and applications of funds.

According Foulke "A statement of source and application of funds is a technical device designed to analyse the changes to the financial condition of a business enterprise in between two dates"

Various Facets of Fund flow statement are as follows

Statement of sources and application of funds
Statement changes in financial position

Analysis of working capital changes and
Movement of funds statement

OBJECTIVES OF FUND FLOW STATEMENT ANALYSIS

It pinpoints the mobilization of resources and the further utilization of resources

It highlights the financing of the general expansion of the business firms It exemplifies the utilization of debt finance in the structure of financing

It portrays the relationship between the financing, investment, liquidity and dividend decision of the firm during the given point of time.

METHODS OF PREPARING FUND FLOW STATEMENT Steps in the preparation of Fund Flow Statement:

First and fore most method is to prepare the statement of changes in working capital i.e., to identify the flow of fund / movement of fund through the detection of changes in the volume of working capital.

Second step is the preparation of Non- Current A/c items-Changes in the volume of Non current a/cs have to be prepared only in order to quantify the flow fund i-e either sources or application of fund.

Third step is the preparation Adjusted Profit& Loss A/c, which already elaborately discussed in the early part of the chapter.

Last step is the preparation of fund flow statement.

ADVANTAGES OF PREPARING FUND FLOW STATEMENT

Illustrative Statement of Financing

It is a statement which highlights the role of various kinds of financing not only in the dimension of project development and expansion but also growth rate of the organization.

To fulfil the Primary Objective of the Financial Management

It not only elucidates the mode of financing but also the application of resources after raising. It answers to the following queries viz:

How the outsider's liabilities are redeemed?

What is the role of the fund from operation generated?
How the raised funds applied into business?

How the decrease in working capital was applied?

What is the mode of raising of financial resources for an increase in the working capital?

Facilitation through Financial Planning

The projected fund flow statement from the past performance facilitates the firm to anticipate the future requirement of financial resources. It guides the management to prioritize the application in the future to the tune of scarce resources.

Guide to Working Capital Management

It acts as a guide to the management to maintain the working capital at optimum level through either purchase or sale of marketable securities during the periods of adequate and inadequate working capital respectively.

Indicator of Yester Track Path of the Firm

The insight on the financial performance of the firm can be had by the lending institutions through fund flow statement at the time of extending financial assistance to the firm.

LIMITATIONS

It is an extension of financial statements but it cannot be leveled with the emphasis of them

It is not a resultant of the transaction instead it is an arrangement of among the available information

Projected fund flow statement ever only to the tune of financial statements which are historic in feature

PREPARATION OF FUNDS FLOW STATEMENT

Two statements are involved in Funds Flow Analysis.

Statement or Schedule of Changes in Working Capital
Statement of Funds Flow

Statement of Changes in Working Capital

This statement when prepared shows whether the working capital has increased or decreased during two Balance Sheet dates. But this does not give the reasons for increase or decrease in working capital. This statement is prepared by comparing the current assets and the current liabilities of two periods. It may be shown in the following form:

Schedule of Changes in Working Capital (Proforma)

Items	As on	As on	Change	
			Increase	Decrease
Current Assets				
Cash Balances				
Bank Balances				
Marketable Securities				
Stock in Trade				
Pre-paid Expenses				
Current Liabilities				
Bank Overdraft				
Outstanding Expenses				
Accounts Payable				
Provision for Tax				
Dividend				
Increase / Decrease in Working Capital				

Any increase in current assets will result in increase in Working Capital and any decrease in Current Assets will result in decrease in Working Capital. Any increase in current liability will result in decrease in working capital and any decrease in current liability will result in increase in working capital.

Funds Flow Statement

Funds Flow Statement is also called as Statement of Changes in Financial Position or Statement of Sources and Applications of Funds or where got, where gone statement. The purpose of the funds flow statement is to provide information about the enterprise's investing and financing activities. The activities that the funds flow statement describes can be classified into two categories:

activities that generate funds, called Sources, and
activities that involve spending of funds, called Uses

When the funds generated are more than funds used, we get an increase in working capital and when funds generated are lesser than the funds used, we get decrease in working capital. The increase or decrease in working capital disclosed

by the schedule of changes in working capital should tally with the increase or decrease disclosed by the Funds Flow Statement.

The Funds Flow Statement may be prepared either in the form of a statement or in `T' shape form. When prepared in the form of the statement it would appear as follows:

Funds Flow Statement

Sources of Funds			
Issues of Shares	x	x	x
Issue of Debentures	x	x	x
Long term borrowings	x	x	x
Sale of Fixed Assets	x	x	x
*Operating Profit			
(Funds from Operations)	x	x	x
Total Sources	x	x	x
Application of Funds			
Redemption of Redeemable			
Preference shares	x	x	x
Redemption of Debentures	x	x	x
Payments for other long-term loans	x	x	x
Purchase of fixed assets	x	x	x
* Operation loss (Funds lost from	x	x	x
Operations)			
Total uses	x	x	x

Net increase / decrease in working capital (Total Sources – Total uses)

When prepared in `T' shape form, the Funds Flow Statement would appear as follows:

Funds Flow Statement

Sources of Funds		Application of Funds	
* Funds from operation	x x x	*Funds lost in operations	x x x
Issue of shares	x x x	Redemption of Preference Shares	x x x
Issue of Debentures	x x x	Redemption of Debentures	x x x
Long-term borrowings	x x x	Payment of other long-term Loans	x x x
Sale of fixed assets	x x x	Purchase of fixed assets	x x x
* Decrease in working capital	x x x	Payment of dividend, tax, etc.	x x x
		Increase in working capital	x x x

*Only one figure will be there.

It may be seen from the proforma that in the Funds Flow Statement preparation, current assets and current liabilities are ignored. Attention is given only to change in fixed assets and fixed liabilities.

In this connection an important point about provision for taxation and proposed dividend is worth mentioning. These two may either be treated as current liability or long-term liability. When treated as current liabilities they will be taken to `schedule of changes in working capital' and thereafter no adjustment is required anywhere. If they are treated as long-term liabilities there is no place for them in the schedule of changes in working capital. The amount of tax provided and dividend proposed during the current year will be added to net profits to find the funds from operations. The amount of actual tax and dividend paid will be shown as application of funds in the Funds Flow Statement. In this lesson, we have taken them as Current Liabilities.

Illustration 1: The mechanism of preparation of Funds Flo Statement is proposed to be explained with the help of Annual Reports for the years 2003-04 and 2004-05 pertaining to Arasu Limited.

ARASU LIMITED
Balance Sheet as at 31st March 2005

	2004-05	2003-04

I. Source of Funds				
1. Share Capital		1,40,00		1,40,00
2. Reserves and Surplus		2,77,84		2,30,62
		4,17,84		3,70,62
II. Application of Funds				
1. Fixed Assets	4,83,15		4,61,23	
Less: Dep. Provision	2,57,85	2,25,30	2,27,36	2,33,87
2. Investments		20,25		20,30
3. **Current Assets, Loans and Advances**				
Inventories	1,52,83		1,92,54	
Debtors	51,41		64,29	
Cash and Bank	1,40,80		18,46	
Loans & Advances	17,82		14,73	
	3,62,86		2,90,02	
Less: **Current Liabilities & Provisions**				
Liabilities	89,81		76,70	
Provisions		100,76	96,87	
		1,90,57	1,73,57	
Net Current Assets		1,72,29		1,16,45
(Working Capital)		4,17,84		3,70,62

Profit and Loss Account for the year ended 31st March 2005

	2004-05	2003-04
Income		
Sales	4,94,19	5,36,63
Other income	2,35,73	2,57,64
	7,29,92	**7,94,27**
Expenditure		
Opening Stock	20,45	25,59
Raw materials consumed	87,35	95,67
Packing materials consumed	2,87,78	3,29,04
Excise Duty	23,90	27,26
Expenses	1,65,38	1,29,94
Directors' Fees	11	10
Interest	94	5,69
Depreciation	30,49	39,98
	6,16,40	**6,53,27**
Less: Closing Stock	19,06	20,45

	5,97,34	**6,32,82**
Profit before Taxation	1,32,58	1,61,45
Provision for Income-tax	(64,36)	(82,40)
	68,22	**79,05**
Profit brought forward from Previous year	12	1
Balance	**68,34**	**79,06**
Provision for Taxation Relating to Earlier Year		(46,27)
Miscellaneous Expenditure Written off		(15,67)
Balance available for Appropriation	**68,34**	**17,12**
Appropriations		
General Reserve	47,25	3,00
Proposed Reserve for Appropriation	21,00	14,00
	68,25	**17,00**
Balance carried over to next year	9	12

For the above financial statements, Funds Flow Statement is prepared as follows with necessary workings:

I. Calculation of Funds from Operations for the year 2004-05

		(Rs.`000)
Balance of Profit carried over to next year		9
Add:	Provision for Depreciation	30,49
	Transfer to General Reserves	47,25
		77,83
Less:	Balance of Profit brought forward from previous year	12
Funds from operations		77,71

Note: Provision for income-tax and proposed dividend are taken as current liabilities. Hence they are not added here. They will be taken to Schedule of Changes in Working Capital.

II. Fixed Assets: From a perusal of schedule relating to `Fixed Assets' in the annual report, it is ascertained that there was a sale of fixed assets amounting to Rs.16,62,000 and purchase of fixed assets to the tune of Rs.38,54,000. These will be shown as source and application of funds respectively. (In examination problems information about, sale and purchase of assets can be ascertained by preparing respective Asset Accounts).

III. Investments: A similar perusal of schedule relating to `investments' gives information that there was a redemption of investment amounting to Rs.5,000 which is a source of fund.

Now the Schedule of Changes in Working Capital and Funds Flow Statement are prepared.

ARASU LIMITED
Schedule of Changes in Working Capital 2004-05
(Rs. '000)

	2003-04	2004-05	Increase	Decrease
Current Assets				
Inventories	1,92,54	1,52,83	-	39,71
Debtors	64,29	51,41	-	12,88
Cash and Bank	18,46	1,40,80	1,22,34	-
Loans and Advances	14,73	17,82	3,09	-
(A) Total of Current Assets	2,90,02	3,62,86		
Current Liabilities				
Creditors	75,43	88,81	-	13,38
Unpaid Dividend	1,27	1,00	27	-
Provision for Tax	82,87	79,76	3,11	-
Proposed Dividend	14,00	21,00	-	7,00
(B) Total of Current Liabilities	1,73,57	1,90,57		
Working Capital (A)-(B)	1,16,45	1,72,29	-	-
Increase in Working Capital	55,84			55,84
	1,72,29	1,72,29	1,28,81	1,28,81

ARASU LIMITED Funds Flow Statement 2004-04

Sources	Rs.	Applications	Rs.
Funds from Operations	7771	Purchase of Fixed Assets	3854

Sale of Fixed Assets	1662	Increase in Working Capital	5584
Redemption of Investment	5		
	9438		**9438**

It may be seen from the above statement that Sources amount to Rs.94,38,000 and Applications amount to Rs.38,54,000, thereby resulting in an increase in Working Capital amounting to Rs.55,84,000. This figure tallies with the increase in working capital as shown by the Schedule of Changes in Working Capital.

Illustration 2: The Balance Sheet of Mathi Limited for two years were as follows:

Liabilities	2004	2005	Assets	2004	2005
Share Capital	40,000	60,000	Land & Buildings	27,700	56,600
Share Premium	4,000	6,000	Plant & Machinery	17,800	25,650
General Reserve	3,000	4,500	Furniture	1,200	750
Profit & Loss A/c	9,750	10,400	Stock	11,050	13,000
5% Debentures		13,000	Debtors	18,250	19,550
Creditors	16,750	18,200	Bank	2,400	2,000
Provision for Taxation	4,900	5,450			
	78,400	**1,17,550**		**78,400**	**1,17,550**

Additional Information

Depreciation written off during the year was:

Plant and Machinery Rs.6,400

Furniture Rs.200

Prepare: A Schedule of Changes in Working Capital and A Statement of Sources and Application of Funds.

Schedule of Changes in Working Capital

			Working Capital	
	2004	**2005**	**Increase**	**Decrease**

	Rs.	Rs.	Rs.	Rs.
Current Assets				
Stock	11,050	13,000	1,950	-
Debtors	18,250	19,550	1,300	-
Bank	2,400	2,000		400
(A)	31,700	34,550		
Current Liabilities				
Creditors	16,750	18,200	-	1,450
Provision for Taxation	4,900	5,450	-	550
(B)	21,650	23,650		
Working Capital (A) – (B)	10,050	10,900		
Increase in Working Capital	850			850
	10,900	10,900	3,250	3,250

Calculation of Funds from Operations

Profit and Loss a/c as on 31-12-2005			10,400
Add:	Transfer to Reserve		1,500
	Depreciation –	Plant & Machinery	6,400
		Furniture	200
			18,500
Less:	P&L a/c as on 1-1-2005		9,750
	Funds from Operations		8,750

Land & Building A/c

To Balance b/d	27,700	By Balance c/d	56,600
To Bank Purchase (Balancing figure)	28,900		
	56,600		56,600

Plant & Machinery A/c

To Balance b/d	17,800	By Depreciation	6,400
To Bank Purchase (Balancing figure)	14,250	By Balance c/d	25,650
	32,050		32,050

Furniture A/c

To Balance b/d	1,200	By Depreciation	200
		By Bank – Sale (Balancing figure)	250
		By Balance c/d	750
	1,200		**1,200**

Statement of Sources and Application of Funds

Sources	Rs.	Applications	Rs.
Funds from Operations	8,750	Purchase of Land &	
Share Capital	20,000	Buildings	28,900
Share Premium	2,000	Purchase of Plant &	14,250
Debentures	13,000	Increase in working	850
Sale of Furniture	250	capital	
	44,000		**44,000**

Illustration 3: Following are Balance Sheet of a Limited Co. as on 31st Dec.2003 and 2004.

Liabilities	2003	2004	Assets	2003	2004
Share Capital	61,000	74,000	Plant	45,000	43,000
Reserves	13,000	15,500	Building	50,950	48,000
Creditors	28,000	24,000	Stock	20,500	18,800
Bank Overdraft	18,000	-	Debtors	20,000	16,200
Provision for Taxation	8,000	8,500	Cash	150	180
Profit & Loss A/c.	8,600	8,800	Cash at Bank		2,100
			Goodwill		2,520
	136600	**130800**		**1,36,600**	**1,30,800**

Taking into account the following information, calculate funds from operations:

1) Interim Dividend was paid Rs.2,000.
2) Dividend proposed for Rs. 4,000.
3) Provision of Rs.9,000 was made for Income Tax.
4) Rs. 2000 was written off as depreciation on Plant and Rs.2,950 on Building.
5) Profit on Sale of Fixed Investment Rs. 1,500.

Solution

Calculation of net profit for 2003

	Rs.	Rs.

Credit balance of P & L A/c on 31Dec. 2003		8,800
Less: Credit Balance of P& LA/c on 31Dec.2002		8,600
		200
Add:		
Interim Dividend	2,000	
Proposed Dividend	4,000	
Provision made for Income Tax	9,000	
Provision Made for Reserve	2,500	17,500
Net Profit During the Year		17,700

Particulars	Rs.	Rs.
Net Profit During the Year		17,700
Add:		
Depreciation on Building	2,950	
Depreciation on Plant	2,000	4,950
		22,650
Less:		
Profit on sale of Fixed Investment		1,500
Profit from Business Operations		21,150

The alternative method for calculation of Funds from operations is as follows:

Particulars	Rs.	Particulars	Rs.
To Interim Dividend	2,000	By Opening Balance	8,600
To Dividend Proposed	4,000	By Profit on Sale of Investment	1,500
To Provision for Income Tax	9,000	By Profit from Business Operations (B/f)	21,150
To Provision for Reserve	2,500		
To Plant A/c(Depreciation)	2,000		
To Building A/c	2,950		
(Depreciation) To Closing Balance	8,800		
	31,250		**31,250**

MEANING OF CONCEPTS OF CASH, CASH FLOW AND CASH FLOW ANALYSIS

While explaining the concept of `fund' it was mentioned that in a narrower sense the term `fund' is also used to denote cash. The term `cash' in the context of cash flow analysis stands for cash and bank balances. Cash flow refers to the actual movement of cash in and out of an organisation. When cash flows into the

organisation it is called cash inflow or positive cash flow. In the same way when cash flows out of the organisation, it is called cash outflow or negative cash flows. Cash flow analysis is an analysis based on the movement of cash and bank balances. Under cash flow analysis, all movements of cash would be considered.

CASH FLOW STATEMENT

A cash flow statement is a statement depicting changes in cash position from one period to another i.e. the result of cash flow analysis is given in the cash flow statement. For example if the cash balance of a concern as per its Balance Sheet as on 31st March 2004 is Rs.90,000 and the cash balance as per its Balance Sheet as on 31st March 2005 is Rs.1,20,000, there has been an inflow of cash of Rs.30,000 in the year 2004-05 as compared to the year 2003-04. The cash flow statement explain the reasons for such inflows or outflows of cash as the case may be.

Normally the following are principal sources of inflows of cash:

a) Issue of shares and debentures for cash
b) Sale of fixed assets and investments for cash
c) Borrowings from banks and other financial institution
d) Cash from operations

Outflows of cash generally include:

a) Redemption of shares and debentures by cash
b) Purchase of fixed assets and investments by cash
c) Repayment of loans
d) Cash lost in operations

The following is the format of a cash flow statement:

Cash Flow Statement for the year ending say 31st March 2005

Balance as on 1-4-2004		**Balance as on 1-4-2004**	
Cash in hand	x x x	Bank overdraft (if any)	x x x
Cash at Bank	x x x		
Add: Cash Inflows:		**Cash Outflows**:	
Here the items mentioned as sources of cash inflows above will be recorded		Here the items mentioned as outflows of cash above will be recorded	
Balance as on 31-3-2005		**Balance as on 31-3-2005**	
Bank overdraft (if any)	x x x	Cash in hand	x x x

	Cash at Bank	x x x
---		---
x x x		x x x
---		---

The Accounting Standard 3 issued by the Institute of Chartered Accountants of India requires the companies to prepare Cash Flow Statement and present them as part of their Annual Reports.

CALCULATION OF CASH FROM OPERATIONS

The important step in the preparation of cash flow statement is the calculation of cash from operations. It is calculated as follows:

The first step in the calculation of cash from operations is the calculation of funds from operations (which is already explained in the lesson on Funds Flow Analysis). To the funds from operations the decrease in current assets and increase in current liabilities will be added (except cash, Bank and Bank O.D.). From the added total increase in current assets and decrease in current liabilities will be deducted (except cash, Bank and Bank O.D.). The resultant figure is cash from operations (Refer Illustration 3).

Performa of Cash from Operations Statement

Funds from Operations or Funds lost from operations		x x x x
Add:	Decrease in current assets	x x x x
	Increase in current liabilities	x x x x
		---
		x x x x

Less:	Inecrease in current assets	x x x	
	Decrease in current liabilities	x x x	
		---------	x x x x

Cash from operations or cash lost from operations			x x x x

As in the case of Fund Flow Analysis here also we assume **Provision for Taxation** and **Proposed Dividend** as current liabilities.

UTILITY OF CASH FLOW ANALYSIS

Cash flow analysis yields the following advantages:

a) It is very helpful in understanding the cash position of the firm. This would enable the management to plan and coordinate the financial operations properly.

b) Since it provides information about cash which would be available from operations the management would be in a position to plan repayment of loans, replacement of assets, etc.

c) It throws light on the factors contributing to the reduction of cash balance in spite of increase in income and vice versa.

d) A comparison of the cash flow statement with the cash budget for the same period helps in comparing and controlling cash inflows and cash outflows.

However cash flow analysis is not without limitations. The cash balance as disclosed by the cash flow statement may not represent the real liquid position of the business since it can be easily influenced by postponing purchases and other payments. Further cash flow statement cannot replace the income statement or funds flow statement. Each of them has a separate function to perform.

CASH FLOW ANALYSIS Vs FUNDS FLOW ANALYSIS

a) A cash flow statement is concerned only with the changes in cash position while funds flow analysis is concerned with changes in working capital position between two balance sheet dates.

b) Cash flow analysis is a tool of short-term financial analysis while the funds flow analysis is comparatively a long-term one.

c) Cash position results in improvement in the funds position but not vice versa. In other words "inflows of cash" results in "inflow of funds" but inflow of funds may not necessarily result in "inflow of cash".

d) In funds flow analysis, the changes in various current assets and current liabilities are shown in a separate statement called schedule of changes in working capital in order to ascertain the net increase or decrease in working capital. But in cash flow analysis, such changes are adjusted to funds from operations in order to ascertain cash from operations.

Illustration 3:

From the following balances calculate cash from operations:

Particulars	December 31	
	2004	2005
Profit and Loss A/c Balance	75,000	1,55,000
Debtors	45,000	42,000
Creditors	20,000	26,000
Bills Receivable	12,000	15,000
Cash in hand	2,500	3,000
Prepaid expenses	1,600	1,400
Bills Payable	18,000	16,000
Cash at Bank	8,000	10,000
Outstanding expenses	1,200	1,600
Income received in advance	250	300
Outstanding Income	800	900

Additional Information

a) Depreciation written off during the year Rs.10,000
b) Transfer to General Reserve Rs.10,000

Calculation of Funds from Operations

		Rs.
Profit & Loss A/c as on 31st December 2005		1,55,000
Add:	Depreciation	10,000
	Transfer to General Reserve	10,000
		1,75,000
Less:	P & L a/c as on 1st January 2005	75,000
	Funds from Operations	1,00,000

Calculation of Cash from Operations

Funds from Operations	1,00,000

***Add*:Decrease in Current Assets**		
Decrease in Debtors		3,000
Decrease in Prepaid Expenses		200
Increase in Current Liabilities		
Increase in Creditors		6,000
Increase in Outstanding Expenses		400
Increase in Income Received in Advance		50
		1,09,650
***Less*:Increase in Current Assets**		
Increase in Bills Receivables	3,000	
Increase in Outstanding Income	100	
Decrease in Current Liabilities		
Decrease in Bills Payable	2,000	
		5,100
Cash from Operations		1.04,550

Note: Decrease in current assets means current assets are converted into cash and increase in current liabilities results in further generation of cash. Hence they are added. Increase in current assets and decrease in current liabilities result in outflow of cash. Hence they are deducted.

Illustration 4: Balance Sheets of Somy Thomas as on 1-1-2005 and 31-12-2005 were as follows:

Liabilities	2004 Rs.	2005 Rs.	Assets	2004 Rs.	2005 Rs.
Credits	40,000	44,000	Cash	10,000	7,000
Bills payable	25,000	----	Debtors	30,000	50,000
Loans from Bank	40,000	50,000	Stock	35,000	25,000
Capital	1,25,000	1,53,000	Machinery	80,000	55,000
			Land	40,000	50,000
			Building	35,000	60,000
	2,30,000	**2,47,000**		**2,30,000**	**2,47,000**

During the year, a machine costing Rs.10,000 (accumulated depreciation Rs.3,000) was sold for Rs.5,000. The provision for depreciation against machinery as on 1-1-2005 was Rs.25,000 and 31-12-2005 it was Rs.40,000. Net profit for the year 2005 amounted to Rs.45,000. Prepare Cash Flow Statement.

Calculation of Cash from Operations

			Rs.
Net Profit for the year 2005			45,000
Add:	Addition to Provision for Depreciation		18,000
	Loss of Sale of Machinery		2,000
	Funds from Operations		65,000
Add:	Decrease in Stock		10,000
	Increase in Creditors		4,000
			79,000
Less:	Increase in Debtors	20,000	
	Decrease in Bills Payable	25,000	
			45,000
	Cash from Operations		34,000

Capital A/c

To Drawings (b/f)	17,000	By Balance b/d	1,25,000
To Balance c/d	1,53,000	By Net Profit for the year	45,000
	1,70,000		1,70,000

Machinery A/c

To Balance b/d (80000 + 25000)	1,05,000	By Bank Sale	5,000
		By Provision for Dep.	3,000
		By P&L a/c – Loss	2,000
		By Balance c/d (55000 + 40000)	95,000
	1,05,000		1,05,000

Provision for Depreciation A/c

To Machinery a/c (Dep. on machinery sold)	3,000	By Balance b/d	25,000
		By P&L a/c	
To Balance c/d	40,000	Dep. for the current year	18,000
	43,000		43,000

Cash Flow Statement

Cash as on 1-1-2005	10,000		
Add:	Inflows	Cash Outflows:	
Cash from Operations	34,000	Drawings	17,000

Loan from Bank	10,000	Purchase of Land	10,000
Sale of Machinery	5,000	Purchase of Building	25,000
		Cash as on 31-12-2005	7,000
	59,000		59,000

Illustration : 5

From the following information calculate cash from operations:

Particulars	Rs.
Net Profit for the year	30,000
Total Sales	60,000
Debtors Outstanding in the beginning of the year	20,000
Debtors outstanding at the end of the year	15,000

Solution:

Calculation of Cash from Operations

Particulars	Rs.
Net profit for the year	30,000
Less: Debtors outstanding at the end of the year	15,000
Add: Debtors outstanding in the beginning of the year	20,000
Cash from operations	35,000

Illustration 6 : Calculate Cash from operations from the following information's :

Particulars	Rs.
Sales	70,000
Purchases	40,000
Expenses	8,000
Creditors at the end of the year	15,000
Creditors in the beginning of the year	12,000

Solution

Particulars	Rs.	Rs.
Sales		70,000
Less: Purchases	40,000	
Expenses	8,000	48,000
Profit for the Year		22,000
Add: Creditors at the end of the Year		15,000
		37,000
Less: Creditors at the beginning of the Year		12,000
Cash from Operations		25000

APPLICATIONS OF CASH OR CASH OUTFLOWS

1. Cash Lost in Operations

Sometimes the net result of trading in a particular period is a loss and some cash may be lost during that period in trading operations. Such loss of cash in trading in called cash lost in operations and is shown as an outflow of cash in Cash Flow Statement.

2. Decrease in or Discharge of Liabilities

Decrease in or discharge of any liability, fixed or current results in outflow of cash either actual or notional. For example, when redeemable preference shares are redeemed and loans are repaid, it will amount to an outflow of actual cash. But when a liability is converted into another such as issue of shares for debentures, there will be a notional flow of cash into the business.

3. Increase in or Purchase of Assets

Just like decrease in .or sale of assets is a source or inflow of cash, increase or purchase of any assets is a out flow or application of cash.

4. Non Trading Payments

Payment of any non-trading expenses also constitute outflow of cash. For example, payment of dividends, payment of income-tax, etc.

Illustration 7:

The following details are available from a company.

Liabilities	31-12-98 Rs.	31-12-99 Rs.	Assets	31-12-98 Rs.	31-12-99 Rs.
Share Capital	70,000	74,000	Cash	9,000	7,800
Debentures	12,000	6,000	Debtors	14,900	17,700
Reserve for doubtful debts	700	800	Stock	49,200	42,700
Trade Creditors	10,360	11,840	Land	20,000	30,000
P & L A/c	10,040	10,560	Goodwill	10,000	5,000
	1,03,100	**1,03,200**		**1,03,100**	**1,03,200**

Additional Information

(i) Dividend paid total Rs. 3,500 (ii) Land was purchased far Rs. 10,000. Amount provided far amortisation of goodwill Rs. 5,000 and (iii) Debentures paid off Rs. 6,000. Prepare Cash Flow Statement.

Solution

Cash Flow Statement
(for the year ended 31.12.1999)

Particulars	Rs.	Particulars	Rs.
Opening balance of Cash on	9,000	**Cash Outflows**	
Add: Cash Inflows :		Purchase of Land	10,000
Issue of Share Capital	4,000	Increase in Debtors	2,800
Increase in trade creditors	1,480	Redemption of Debentures	6,000
Cash inflow from operations	9,120	Dividends Paid	3,500
Decrease in stock	6,500	Closing balance of cash on	7,800
	30,100		**30,100**

Workings

Particulars	Rs.	Particulars	Rs.
To Dividend (non-operating)	3,500	By Balance b/d	10,040
To Goodwill (non-fund/cash)	5,000	By Cash inflow from operation	9,120
To Reserve for doubtful debts	100		
To Balance c/d	10,560		
	19,160		**19,160**

Alternatively

Balance of P & L A/c on 31.12.1999		10,560
Add: non-fund/cash and non-operating items which have already been debited to P & L A/c :		
Dividend paid		3,500
Goodwill written off		5,000
Reserve for doubtful debts		100
Less: Opening balance of P & L A/c and non-operating incomes :		
Opening Balance of P/L A/c. on 31.12.98	10,040	10,040
Cash Inflow from Operations		9,120

Illustration: 8

Prepare a funds flow statement

Balance Sheet of M/s ___

Liabilities	As on 31st December		Assets	As on 31st December	
	2004	2005		2004	2005
Share Capital	10,000	15,000	Cash	5,000	8,000
Profit and Loss			Debtors	10,000	15,000
Appropriation	5,000	8,000	Stock	10,000	12,000
account	4,000	6,000	Machiner	3,000	5,000
Long Term Loan	8,000	12,000	y	4,000	4,000
Sundry Creditors	5,000	3,000	Land		

Bills Payable					
	32,000	44,000		32,000	44,000

From the information relating to the non-current area from the balance sheet figures on 31st Dec 2004 and 31st Dec 2005, we would be able to prepare a funds flow statement for the period between 31st December 2004 and 31st December 2005 i.e. for the year 2005.

Balance Sheet of M/s ___

Schedule/Statement of Changes in Working Capital for the period from __ to __

Particulars/Account	Balance as on 31st December		Working Capital Change	
	2004	2005	Increase	Decrease
a) CURRENT ASSETS				
1) Cash	5,000	8,000		3,000
2) Sundry Debtors	10,000	15,000		5,000
3) Stock	10,000	12,000		2,000
TOTAL	25,000	35,000		10,000
b) CURRENT LIABILITIES				
1) Sundry Creditors	8,000	12,000	4,000	
2) Bills Payable	5,000	3,000		2,000

TOTAL	13,000	15,000	4,000	2,000
Working Capital [(a) - (b)]	12,000	20,000		
TOTAL			4,000	12,000
Net Change in Working Capital				8,000

Funds Flow Statement for the period from __ to __

Particulars	**Amount**	**Amount**
a) **Sources (Inflow) of Funds**		
1) Share Capital	5,000	
2) Funds from Operations [P/L appropriation account]	3,000	8,000
b) **Applications (Outflow) of Funds**		
1) General Reserve	2,000	
2) Machinery	2,000	4,000
Change in Working Capital [a - b]		+ 4,000

Illustration: 9

From the following information prepare

i) A Schedule of Changes in Working Capital

ii A Funds Flow Statement

Balance Sheet of M/s _____

Liabilities	as on 31st March		Assets	as on 31st March	
	2006	2007		2006	2007
Capital	18,50,000	21,00,000	Goodwill (at Cost)	6,00,000	6,00,000
Profit/Loss	14,78,000	17,64,000	Land and Buildings	18,50,000	22,00,000
Appropriation	12,00,000	9,00,0000	Plant and	4,74,000	
Bank Loan	4,00,000	6,80,000	Machinery	1,94,000	5,24,000
Bills Payable	14,00,000	12,20,000	Furniture and	8,26,000	1,94,000
Sundry Creditors	2,00,000	1,80,000	Fittings	12,00,000	7,24,000
Reserve for Taxation			Stock/Inventories	8,00,000	12,80,000
			Sundry Debtors	5,00,000	
			Bills Receivable	84,000	7,21,000
			Bank		4,83,000
			Cash		1,18,000
TOTAL	65,28,000	68,44,000	TOTAL	65,28,000	68,44,000

SOLUTION

Schedule/Statement of Changes in Working Capital for the period from 31/03/06 to 31/03/07

Particulars/Account	Balance as on 31st March		Working Capital Change	
	2006	2007	Increase	Decrease
a) CURRENT ASSETS				
1) Stock/Inventories	8,26,000	7,24,000		1,02,000
2) Sundry Debtors	12,00,000	12,80,000	80,000	
3) Bills Receivable	8,00,000	7,21,000		79,000
4) Bank	5,00,000	4,83,000		17,000
5) Cash	84,000	1,18,000	34,000	
TOTAL	34,10,000	33,26,000	1,14,000	1,98,000
b) CURRENT LIABILITIES				
1) Bills Payable	4,00,000	6,80,000		2,80,000
2) Sundry Creditors	14,00,000	12,20,000	1,80,000	
3) Provision for Taxation	2,00,000	1,80,000	20,000	
TOTAL	20,00,000	20,80,000	2,00,000	2,80,000
Working Capital [(a) - (b)]	14,10,000	12,46,000		

TOTAL	3,14,00	4,78,000
	0	
Net Change in Working Capital		1,64,000

Working Notes

Make up the ledgers for all the non-current accounts.

Dr Capital a/c Cr

Date	Particulars	Amount	Date	Particulars	Amount
31/03/07	To Balance c/d	21,00,000	01/04/06	By Balance b/d	18,50,000
				By Bank a/c (?)	2,50,000
		21,00,000			21,00,000
			01/04/07	By Balance b/d	21,00,000

Assumption :
Capital has been raised during the period for cash.

Dr Bank Loan a/c Cr

Date	Particulars	Amount	Date	Particulars	Amount
—	To Bank a/c (?)	3,00,000	01/04/06	By Balance b/d	12,00,000
31/03/07	To Balance c/d	9,00,000			
		12,00,000			12,00,000
			01/04/07	By Balance b/d	9,00,000

Assumption :

Bank loan has been repaid during the period through a cheque.

Dr Land and Buildings a/c Cr

Date	Particulars	Amount	Date	Particulars	Amount
01/04/06	To Balance b/d	18,50,000	31/03/07	By Balance c/d	22,00,000
—	To Bank a/c (?)	3,50,000			
		22,00,000			22,00,000
01/04/07	To Balance b/d	22,00,000			

Assumption :

Additional assets have been purchased during the period for cash.

Dr Plant and Machinery a/c Cr

Date	Particulars	Amount	Date	Particulars	Amount
01/04/06 —	To Balance b/d To Bank a/c (?)	4,74,000 50,000	31/03/07	By Balance c/d	5,24,000
		5,24,000			5,24,000
01/04/07	To Balance b/d	5,24,000			

Assumption :

Additional assets have been purchased during the period for cash.

Posting by name Bank on the credit side indicates an inflow and on the debit side indicates an outflow

Dr Profit and Loss Appropriation Cr

Date	Particulars	Amount	Date	Particulars	Amount
31/03/07	To Balance c/d	17,64,000	01/04/06 31/03/07	By Balance b/d By Funds From Operations (?)	14,78,000 2,86,000

		17,64,000			17,64,000
			01/04/07	By Balance b/d	17,64,000

Assumption :

Funds have been generated through operations during the period.

Treat the Funds from operations posting as if it is a posting by name bank.

Funds Flow Statement

Funds Flow Statement for the period from 31/03/06 to 31/03/07

Particulars	Amount	Amount
a) Sources (Inflow) of Funds		
1) Share Capital	2,50,000	
2) Funds from Operations [P/L appropriation account]	2,86,000	5,36,000
b) Applications (Outflow) of Funds		
1) Land and Buildings	3,50,000	
2) Plant and Machinery	50,000	
3) Bank Loan	3,00,000	7,00,000

Illustration: 10

Following are the Balance Sheets of BROYHILL Industries Ltd, as on 31.12.2005 and 31.12.2006

Balance Sheet of M/s BROYHILL Industries Ltd,

Liabilities	As on 31st December		Assets	As on 31st December	
	2005	2006		2005	2006
Share capital	12,00,000	16,00,000	Goodwill (at Cost)	6,00,000	5,50,000
Debentures	4,00,000	6,00,000	Plantand Machinery	8,00,000	14,90,000
Reserve	3,00,000	3,50,000	(Cost)	2,00,000	2,00,000
Profit & Loss a/c	2,50,000	5,00,000	Furniture	6,00,000	10,00,000
Creditors	4,50,000	3,80,000	Buildings	2,20,000	-
Bank Loan	8,00,000	13,00,000	Investments	3,50,000	4,70,000
Fixed Deposits	2,00,000	-	Land	3,38,000	3,72,000
Provision for			Debtors	6,00,000	8,00,000
Depreciation	12,000	6,000	Stock	40,000	80,000
on Buildings	40,000	48,000	Bank	14,000	12,000
on Plant & Machinery	60,000	70,000	Preliminary expenses		
Provision for:	50,000	1,20,000			
Bad & Doubtful Debts					
Taxation					
	37,62,000	49,74,000		37,62,000	49,74,000

You are required to analyze the Funds Flow and the Changes in working Capital in as much detail as possible, using the following additional details available.

M/S BROYHILL Industries Ltd
Schedule/Statement of Changes in Working Capital for the period from 31/12/05 to 31/12/06

Particulars/Account	Balance as on 31st March		Working Capital Change	
	2005	2006	Increase	Decrease
a) CURRENT ASSETS				
	3,38,000	3,72,000	34,000	-
1) Debtors	6,00,000	8,00,000	2,00,000	-
2) Stock	40,000	80,000	40,000	-
3) Bank				
TOTAL	9,78,000	12,52,000	2,74,000	-
b) CURRENT LIABILITIES				
	4,50,000	3,80,000	70,000	
1) Creditors	60,000	70,000		10,000
2) Provision for Bad Debts	50,000	1,20,000		70,000
2) Provision for Taxation				
TOTAL	5,60,000	5,70,000	70,000	80,000
Working Capital [(a) - (b)]	4,18,000	6,82,000		
		TOTAL	3,14,000	4,78,000
		Net Change in Working Capital	2,64,000	

Dr **Profit and Loss Appropriation a/c** **Cr**

Particulars	Amount	Particulars	Amount
To Reserve a/c	30,000	By Building Sale a/c	20,000
To Profit and Loss a/c	2,50,000	By Investments a/c	24,000
To Goodwill a/c	50,000	**By Funds From Operations (?)**	3,64,000
To Reserve for Depreciation on Plant and Machinery	20,000		
To Machine Sale a/c	8,000		
To Depreciation on Furniture	44,000		
To Reserve for Depreciation on Building	4,000		
To Preliminary Expenses	2,000		
	4,08,000		4,08,000

Statement for Calculation of Funds from Operations

Particulars	Amount	Amount
Current Period Profit Capitalised		2,50,000
Add: Losses/Appropriations debited to Profit/Loss a/c		
1) Reserve created	30,000	
2) Goodwill written off	50,000	
3) Reserve for Depreciation on Plant and Machinery	20,000	
4) Loss on Sale of Machine	8,000	
5) Depreciation on Furniture	44,000	
6) Reserve for Depreciation on Building	4,000	
7) Preliminary Expenses Written off	2,000	1,58,000
Less: Gains and Adjustments credited to Profit/Loss a/c		4,08,000
1) Profit on Sale of Building	20,000	
1) Profit on Sale of Investments	24,000	44,000

Statement of Sources and Applications of Funds for the period from __ to __

Sources/Inflows of Funds	Amount	Applications/Outflows of Funds	Amount
Share Capital (Stock)	50,000	Purchase of Plant and Machinery	8,30,000
Share Capital	3,00,000	Purchase of Furniture	44,000
(Cash/Bank)	2,00,000	Purchase of Buildings	4,50,000
Debentures	5,00,000	Fixed Deposits Cleared	2,00,000
Bank Loan	1,20,000	Purchase of Land	2,70,000
Plant Sale	1,10,000		
Building Sale	2,44,000		
Investments Sale	1,70,000		
Land Sale	3,88,000		
Funds from Operations			
	20,58,000		17,94,000
		Change in Fund (Working Capital)	2,64,000

Illustration: 11

From the following data you are to calculate the cash from operations. Funds from operation for the year 2007 Rs.84, 000. Current assets and liabilities as on 1.1.2007 and 31.12.2007 were as follows:

Particulars	1.1.2007	31.12.2007
Trade Creditors	1,82,000	1,94,000
Trade Debtors	2,75,000	3,15,000
Bills Receivable	40,000	35,000
Bills payable	27,000	31,000
Inventories	1,85,000	1,70,000
Trade Investments	40,000	70,000
Outstanding Expenses	20,000	25,000
Prepaid expenses	5,000	8,000

Solution

Particulars	Rs.	Rs.
Funds from operations		84,000
Add: Increase in current liabilities		
Trade creditors	12,000	
Bills payable	4,000	
Outstanding expenses	5,000	
Decrease in current assets		
Bills receivable	5,000	
Inventories	15,000	41,000
Less: Decrease in Current liabilities		1,25,000
Increase in Current assets		
Trade debtors	40,000	
Trade investments	30,000	
Prepaid expenses	3,000	73,000
Cash from operations		**52,000**

Illustration: 12

Malar ltd. Furnish you the following Balance sheets for the years ending 31st Dec 1985-86.
You are required to prepare a cash flow statement for the year ended 31.12.1986.

Liabilities	1985	1986	Assets	1985	1986
Equity share Capital	20,000	20,000	Goodwill	2,400	2,400
General reserve	2,800	3,600	Land	8,000	7,200
Profit and loss A/c	3,200	2,600	Building	7,400	7,200
Sundry Crs	1,600	1,080	Investments	2,000	2,200
Outstanding Expenses	240	160	Inventories	6,000	4,680
Provision for tax	3,200	3,600	A/cs receivable	4,000	4,440
Provision for bad debts	80	120	Bank balance	1,320	3,040

	31,120	31,160		31,120	31,160

1. A piece of land has also been sold for Rs.800
2. Depreciation amounting to Rs.1,400 has been charged on building
3. Provision for taxation has been made for Rs.3,800 during the year

Solution

Malar ltd cash flow statement for the year ended 31.12. 1986

Particulars	**Rs.**	**Rs.**
Opening bank balance		1,320
Add: Sources of cash		
Cash from operations	5,720	
Sale of land	800	6,520
Total Sources		**7,840**
Less: Applications of Cash		
Building purchased	1,200	
Investments purchased	200	
Tax paid	3,400	4800
Closing bank balance		**3,040**

Adjusted Profit and loss Account

Particulars	Rs.	Particulars	Rs.
To Transfer to General reserve	800	By balance b/d	3,200
To Depreciation on building	1,400	By Funds from operations	5,400
To Provision for Tax	3,800		
To Balance c/d	2,600		
	8,600		8,600

Statement of Cash From operations

Particulars	Rs.	Rs.
Funds from operations		5,400
Add: Increase in provision for doubtful debts	40	
Decrease in inventories	1,320	1,360
		6,760
Less: Decrease in Creditors	520	
Decrease in outstanding expenses	80	
Increase in accounts receivable	440	1,040
Cash from operations		**5,720**

Illustration: 13

Calculate funds from operations from the following Profit and Loss A/c

Profit and loss Account

Particulars	Rs.	Particulars	Rs.
To Expenses paid	3,00,000	By Gross Profit	4,50,000
To Depreciation	70,000	By Gain on sale of land	60,000
To Loss on sale of machine	4,000		
To Discount	200		
To Goodwill	20,000		
To Net profit	1,15,800		
	5,10,000		**5,10,000**

Solution

Particulars	Rs.	Rs.
Net profit as per Profit & Loss A/c		1,15,800
Add: Depreciation	70,000	
Loss on sale of Machine	4,000	
Goodwill written off	20,000	94,000
		2,09,800
Less: Gain on sale of land		60,000
Funds from operations		**1,49,800**

POSSIBLE QUESTIONS
UNIT V
PART B

1. Define fund flow statement

2. Write any two objectives of fund flow statement?

3. List out the steps for preparing fund flow statement?

4. From the following particulars you are required to prepare the Statement showing schedules of changes in working capital

Liabilities	2008	2009	Assets	2008	2009
Share capital	8,000	8,500	Land	5,000	5,000
Profit & Loss A/C	1,450	2,450	Plant	2,400	3,400
Creditors	900	500	Debtors	1,650	1,950
Mortgage Loan	-	500	Stock	900	700
			Cash at Bank	400	900
	10,350	11,950		10,350	11,950

5 Write any two features of fund flow statement?

6 List out the importance of fund flow analysis?

7 Write any two features of cash flow statement?

8 List out the importance of cash flow analysis?

9 List out the statements which are helpful for observing the movement of fund?

10. What is meant by current account?

11. Give the meaning of non current account?

***CIA- 3 X 2 = 6 (ANSWER ALL THE QUESTIONS)**
****ESE – 5 X 2 = 10 (ANSWER ALL THE QUESTIONS)**

PART C

1 Distinguish between cash flow analysis and funds flow analysis.

2 From the following particulars you are required to prepare the Funds Flow Statement

Liabilities	2007	2008	Particulars	2007	2008
Share capital	8,000	8,500	Land	5,000	5,000
Profit & Loss A/C	1,450	2,450	Plant	2,400	3,400
Creditors	900	500	Debtors	1,650	1,950
Mortgage Loan		500	Stock	900	700
			Cash at Bank	400	900
	10,350	**11,950**		**10,350**	**11,950**

3. From the following balance sheets of Damodar Ltd as on 31 December 2004 and 2005 you are required to prepare:
   a) A schedule of changes in working capital
   b) A funds flow statement

Assets	**2004**	**2005**
Goodwill	12,000	12,000
Building	40,000	36,000
Plant	37,000	36,000
Investments	10,000	11,000
Stock	30,000	23,400
Bills Receivable	2,000	3,200
Debtors	18,000	19,000
Cash at Bank	6,600	15,200
	1,55,600	1,55,800

Liabilities	**2004**	**2005**
Share capital	1,00,000	1,00,000
General Reserve	14,000	18,000
Creditors	8,000	5,400
Bills Payable	1,200	800
Provision for Taxation	16,000	18,000
Provision for doubtful debts	400	600
Profit & Loss A/c	16,000	13,000
	1,55,600	1,55,800

Additional Information:

a) Depreciation charged on plant was Rs.4,000 and on building Rs.4,000.

b) Provision for taxation Rs.19,000

c) Interim dividend of Rs.8,000 was paid during the year 2005.

4. Balance Sheets of XYZ Ltd. as on 1-1-2000 and 31-12-2001 was as follows:

Liabilities	***1-1-2001***	***31-12-2001***
Capital	1,25,000	1,53,000
Creditors	1,40,000	1,44,000
Bank loan	65,000	50,000
Bills Payable	20,000	30,000
	3,50,000	**3,77,000**
Assets:		
Cash	20,000	17,000
Debtors	30,000	80,000
Stock	45,000	35,000
Machinery	80,000	65,000
Land	90,000	80,000
Buildings	65,000	70,000
Goodwill	20,000	30,000
	3,50,000	**3,77,000**

During the year, a machine costing Rs. 12,000 (accumulated depreciation Rs.4,000) was sold for Rs.7,000. Balance of provisions for depreciation against machinery as on 1-1-2001 was Rs.35,000 and on 31-12-2001 Rs. 50000

Prepares cash Flow statement.

5. The following details are available from a company.

	31-12-09 Rs.	**31-12-10 Rs.**		**31-12-09 Rs.**	**31-12-10 Rs.**
Share capital	70,000	74,000	Cash	9,000	7,800
Debentures	12,000	6,000	Debtors	14,900	17,700
Reserve for doubtful debts	700	800	Stock	49,200	42,700
Trade Creditors	10,360	11,840	Land	20,000	30,000
P/L A/c	10,040	10,560	Goodwill	10,000	5,000
	1,03,100	1,03,200		1,03,100	1,03,200

In addition, you are given:

1. Dividend paid total Rs. 3,500.
2. Land was purchased for Rs.10,000.

3. Amount provided for amortization of goodwill Rs.5,000.
4. Debentures paid off Rs.6,000.

Prepare Fund Flow Statement and Cash Flow Statement.

6. Discuss the importance of cash flow analysis?

7. Explain the current account and non current account?

***CIA - 3 X 8 = 24 (EITHER OR TYPE)**
****ESE - 5 X6 = 30 (EITHER OR TYPE)**

KARPAGAM ACADEMY OF HIGHER EDUCATION

COIMBATORE 641 021

DEPARTMENT OF MANAGEMENT

II BBA

MANAGEMENT ACCOUNTING

ASSIGNMENT - I

S. No	Register No.	Name of the Student	Assignment Title
1	16BAU001	AJITH ABRAHAM. A	Management Accounting – Meaning, Nature and Scope
2	16BAU002	ARUN KUMAR.S	Management Accounting – Features, Advantages and Limitations
3	16BAU003	ASHIK.B	Branches of Accounting
4	16BAU004	ASUTHULLAH.A	Cost Accounting – Meaning, Scope, Importance
5	16BAU005	CHIDHAMBARAM.K	Cost Accounting – Objectives, Advantage and Limitations
6	16BAU006	DINESH KUMAR.P	Methods of Costing
7	16BAU007	HARITHA.A	Elements of cost
8	16BAU008	INDHIRANI.S	Types of costing
9	16BAU009	INDUJA.S	Financial Accounting Vs Management Accounting
10	16BAU010	JAVIDULLA.S	Cost Accounting Vs Management Accounting
11	16BAU011	KABILAN.N	Marginal Costing – Assumptions and Feature
12	16BAU012	KALPANA.A	Marginal Costing – Advantages and Limitations
13	16BAU014	KARTHICK.R	Marginal Cost – Fixed cost, Variable cost, Contribution, Angle of Incidence, Profit Volume Ratio

14	16BAU016	KARUPPUSAMY.P	Breakeven Analysis
15	16BAU017	KIRTHI.S	Marginal Cost – Cost Volume Profit Analysis and Margin of Safety
16	16BAU018	MANOJ KUMAR.E	Key Managerial Decision Making
17	16BAU019	MARAPPAN.E	Marginal cost – Managerial Decision Makin
18	16BAU020	NAMITHA KRISHNA.R	Budgetary Control – Features, Importance
19	16BAU021	RAGUL.V	Steps in Budgetary control
20	16BAU022	RAJESH KUMAR.R	Types of Budget
21	16BAU023	SABARIGIRINATHAN.R	Fixed and Flexible budget
22	16BAU024	SAKTHI.P	Cash budget, Sales budget, Production budget and Purchase budget
23	16BAU025	SANTHIYA PRIYA.M	Zero based budgeting, Master budget
24	16BAU026	SATHISH.S	Responsibility Accounting
25	16BAU027	SELVAKUMAR.K	Transfer Price
26	16BAU028	SHAHID SALEEM.B	Standard cost – Features
27	16BAU029	SHEIK FAYAZ.H	Standard cost – Advantages and Limitations
28	16BAU030	SHESHADRI SAIPRASAD RAMMOHAN	Material Variance
29	16BAU031	SIVAPRAKASH.A	Labour Variance
30	16BAU032	SUSMITHA.R	Overhead variance
31	16BAU033	SYED ABUTHAHIR.K.S	Target costing
32	16BAU034	TAMILSELVAN.K	Activity Based Costing

33	16BAU035	THAMARAI SELVAN. S	Financial Statement Analysis
34	16BAU036	THOUFEEK.M.A	Fund flow Analysis – Features
35	16BAU037	VIGNESH.S	Fund flow Analysis – Current and non current account
36	16BAU038	VIJAY.K	Schedule of changes in working capital
37	16BAU039	VIJAY.S	Sources of fund
38	16BAU040	VINITHKUMAR.S	Application of fund
39	16BAU041	VINOTH.S	Cash Flow statement – Importance
40	16BAU042	VINOTHINI.V	Inflow of cash
41	16BAU043	VISHAL SAMIAIAH	Outflow of cash
42	16BAU044	VISHNU. S	Budgetary Control – Functions
43	16BAU045	YUVARAJ.V	Sales Variance
44	16BAU046	NAJMUL.S	Financial accounting, Cost accounting and Management accounting - Functions

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DEPARTMENT OF MANAGEMENT

II BBA

MANAGEMENT ACCOUNTING

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Register No.: .....

[16BAU302]

KARPAGAM UNIVERSITY
KARPAGAM ACADEMY OF HIGHER EDUCATION
(Deemed to be University Established Under Section 3 of UGC Act, 1956)
COIMBATORE – 641021
(For the candidates admitted from 2016 onwards)
I INTERNAL EXAMINATION – JULY 2017
THIRD SEMESTER

II BBA

MANAGEMENT ACCOUNTING

Date: 19.07.2017 **Maximum: 50 Marks**
Time: 2 Hours

PART – A (20 X1 = 20 Marks)
ANSWER ALL THE QUESTIONS

1. _____ method refers to costing of distinct process involved, while converting raw materials into finished product
   a) Job costing b) Process costing c) Operating costing d) Batch costing
2. Management accounting is consent with accounting information that is useful to_____
   a) Consumer b) Customer c) Management d) Auditor
3. Costing is a technique of _____
   a) Ascertaining of cost b) Analyzing of cost c) Utilization of cost d) Distribution of cost
4. Cost accounting provide data for managerial_____
   a) Planning b) Organizing c) Decision making d) Controlling
5. Cost accounting is a separate _____of accounting.
   a) Job b) Branch c) Batch d) Set
6. Contribution =
   a) Sales – Variable cost b) Sales + Variable cost c) Total cost + Fixed cost d) Sales – Fixed cost
7. _____costing is used in transport undertakings.
   a) Standard b) Process c) Service d) Job
8. _____costing is applied where the job is big and of longer duration
   a) Batch b) Multiple c) Contract d) Specific
9. Historical costing is also known as _____
   a) Uniform costing b) Standard costing c) Traditional costing d) Specific costing
10. _____is pre-determined cost
    a) Standard cost b) Uniform cost c) Marginal cost d) Specific cost
11. _____of any product comprises of all direct cost
    a) Work cost b) Prime cost c) Cost of sales d) Cost of goods sold
12. _____ represents the factory cost plus administrative expenses
    a) Prime cost b) Work cost c) Cost of production d) Cost of goods sold
13. _____means that the cost tends to be unaffected with the volume of output
    a) Fixed cost b) Variable cost c) Semi-variable cost d) Specific cost
14. Fixed cost per unit will _____ with increase in output
    a) Increase b) Decrease c) Fixed d) No change
15. Indirect Material + Indirect Labour + _____ = Overheads
    a) Indirect Expenses b) Direct Labour c) Direct Expenses d) Variable Expenses
16. _____ indicates the relationship of contribution to sales
    a) P/v ratio b) Contribution c) Profit d) Sales
17. Marginal cost = _____
    a) Prime cost – Total variable cost b) Total variable cost – Prime cost
    c) Prime cost + Total variable cost d) Prime cost + Total fixed cost
18. Variable cost is also known as _____
    a) Marginal cost b) Total cost c) Fixed cost d) Semi variable cost
19. ____ is also known as Management oriented accounting.
    a) Management Accounting b) Cost Accounting c) Financial Accounting d) Corporate Accounting
20. Accounting are classified into _____ branches
    a) 3 b) 5 c) 2 d) 4

PART – B (3 X 2 = 6 Marks)
ANSWER ALL THE QUESTIONS

21. Define Management accounting
22. Prepare Marginal cost statement and determine the amount of profit from the following particulars

    Variable Cost :
    Direct Material Rs.4,500
    Direct wages Rs.2,500
    Factory Overheads Rs.1,500
    Fixed Expenses Rs.1,250
    Sales Rs.15,000
23. From the following information, calculate the break-even point in units and in sales value:

Output	-	3,000 units
Selling price per unit	-	Rs.30
Variable cost per unit	-	Rs.20
Total fixed cost	-	Rs.20,000

PART – C (3 X 8 = 24 Marks)

ANSWER ALL THE QUESTIONS

24. a. Distinguish between cost accounting and management accounting?

Or

b. From the following particulars of a manufacturing firm, prepare a statement of cost:

Particulars	Amount Rs.
Stock of materials as on January 1, 2014	20,000
Purchase of raw material during January 2014	5,50,000
Stock of finished goods on January 1, 2014	25,000
Productive wages	2,50,000
Works overhead charges	75,000
Office and general expenses	50,000
Stock of material as on 31st January, 2014	70,000
Stock of finished goods on 31st January, 2014	30,000
Selling and distribution expenses	3,00,000
Sales	12,00,000

25.a. Explain the features, merits and demerits of management accounting?

Or

b. Calculate Prime cost, Factory cost, Cost of production, Cost of sales and Profit from the following particulars

	Rs.		Rs.
Direct Materials	1,00,000	**Depreciation :**	
Direct Wages	25,000	Factory Plant	500
Direct Expenses	5,000	Office Premises	1,250
Wages of foreman	500	Consumables stores	2,500
Electric Power	500	Managers Salary	5,000
Lighting:			
Factory	1,500	Directors Fees	1,250
Office	500	Office stationery	500
Storekeeper Wages	1,000	Telephone charges	125
Oil and water	500	Postage & Telegram	250
Rent:		Sales man Salary	1,250
Factory	5,000	Traveling Expenses	500
Office	2,500	Advertising	1,250
Repairs & Renewals:		Warehouse Charges	500
Factory Plant	3,500	Sales	1,89,500
Office Premises	500	Income Tax	10,000
Carriage Outwards	375	Dividend	2,000
Transfer to reserves	1,000		
Discount on shares Written off	500		

26. a. From the following particulars, calculate:

(i) Break-even point in terms of sales value and in units.

(ii) Number of units that must be sold to earn a profit of Rs.90,000.

		Rs.
Fixed factory overheads cost	-	60,000
Fixed selling overheads cost	-	12,000
Variable manufacturing cost per unit	-	12
Variable selling cost per unit	-	3
Selling price per unit	-	24

Or

b. . From the following data calculate

a. Number of units to be sold to earn a profit of Rs. 1,20,000.

b. Sales to earn a profit of Rs. 1,20,000

Selling price per unit Rs. 40

Variable selling cost per unit Rs. 3

Variable manufacturing cost per unit Rs. 22

Fixed factory overhead Rs. 1,60,000

Fixed selling cost Rs. 20,000

Register No.: .....
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COIMBATORE – 641021
(For the candidates admitted from 2016 onwards)
II INTERNAL EXAMINATION – AUGUST 2017
THIRD SEMESTER

II BBA

MANAGEMENT ACCOUNTING

Date: 09.08.2017 **Maximum: 50 Marks**
Time: 2 Hours

PART – A (20 X1 = 20 Marks)
ANSWER ALL THE QUESTIONS

1. _____ factor influence the effect of all types of budgets.
   a) Sales b) Key c) Production d) Finance
2. _____ is a plan of estimated receipts and payment of cash for the budget period.
   a) Cash Budget b) Production Budget c) Sales Budget d) Zero Based Budget
3. _____ budget is one which incorporates all functional budgets.
   a) Master b) Production c) Sales d) Cash
4. _____ is an example for current asset
   a) Cash b) Plant c) Furniture d) Building
5. Current liabilities Rs 1,00,000, Current assets Rs.2,50,000, working capital = _____
   a) Rs. 40,000 b) Rs.1,50,000 c) Rs.2,50,000 d) Rs.2,00,000
6. _____ is an example for fixed asset
   a) Machinery b) Sundry Debtors c) Cash d) Stock
7. _____is concerned with future.
   a) Forecasting b) Data c) Increase in efficiency d) Information
8. The cash budget and material budget come under the classification of _____
   a) Short period budget b) Current budget c) Production budget d) Cash budget
9. An example of long term period budget is _____
   a) Master budget b) Research & Development budget c) Sales budget d) Personnel budget
10. The short period budgets are usually prepared for a period of _____
    a) Six months b) Three months c) One year d) Two years
11. Current budgets are usually prepared for a period of _____
    a) One to three months b) Six months to one year c) One to two years d) One year to five year
12. P/V ratio = _____
    a) Profit volume ratio b) Profit variable ratio c) Production volume ratio d) Profit
13. Companies have to follow _____
    a) Calendar year b) Financial year c) Academic year d) Assessment year
14. _____ budget is one among the functional budgets.
    a) Sales b) Capital c) Responsibility d) Fixed
15. ___ may be regarded as the life blood of a business
    a) Working capital b) Current asset c) Fixed asset d) Current liability
16. Budgetary control is a _____ of costing.
    a) Manual b) Technique c) Kind d) Computerization
17. The process of preparing a budget is known as _____
    a) Budget b) Budgetary control c) JIT d) Kanban
18. Units to be produced = _____ + Closing Stock – Opening Stock
    a) Purchase b) Estimated Sales c) Overheads d) Expenses
19. Profit = Sales - _____
    a) Fixed cost b) Total cost c) Overheads d) Variable cost
20. _____ is a selling and distribution expenses
    a) Advertisement b) Salary to office staff c) Wages d) Power

PART – B (3 X 2 = 6 Marks)
ANSWER ALL THE QUESTIONS

21. Define budgetary control
22. What is meant by Angle of Incidence?
23. Calculate Margin of Safety
    Fixed Expenses Rs.40,000
    Breakeven Sales Rs.1,30,000
    Sales Rs.2,10,000

PART – C (3 X 8 = 24 Marks)
ANSWER ALL THE QUESTIONS

24. a. Explain the advantages and limitations of budgetary control?

Or

b. The following information's are given below for two companies

	X Ltd	Y Ltd
Units produced & Sold	17,000	17,000
Revenues	Rs. 1,70,000	Rs. 1,70,000

Fixed costs	Rs.85,000	Rs.34,000
Operating income	Rs.51,000	Rs.51,000
Variable cost	Rs.34,000	Rs.85,000

Find out the Break-Even Point of each company both in units as well as volume

25.a. "Marginal costing is a valuable aid for managerial decision" Discuss?

Or

b. The following information relates to a flexible budget at 60% capacity. Find out the overhead costs at 50% and 70% capacity and also determine the overhead rates:

Particulars	Expenses at 60% capacity
Variable overheads:	Rs.
Indirect Labour	10,500
Indirect Materials	8,400
Semi-variable overheads:	
Repair and Maintenance (70% fixed; 30% variable)	7,000
Electricity (50% fixed; 50% variable)	25,200
Fixed overheads:	
Office expenses including salaries	70,000
Insurance	4,000
Depreciation	20,000
Estimated direct labour hours	**1,20,000 hours**

26. a. Find the profit from the following data

	Rs.
Sales	80,000
Marginal Cost	60,000
Breakeven sales	60,000

Or

b. Bajaj Co. wishes to arrange overdraft facilities with its bankers during the period from April to June 2016 when it will be manufacturing mostly for stock. Prepare a Cash Budget for the above period from the following data, indicating the extent of the band overdraft facilities the company will require at the end of each month.

Month	Sales Rs.	Purchases Rs.	Wages Rs.
February	90,000	62,400	6,000
March	96,000	72,000	7,000
April	54,000	1,21,000	5,500
May	87,000	1,23,000	5,000
June	63,000	1,34,000	7,500

Additional Information :

1. 50% of Credit sales are realized in the month following the sales and the remaining 50% in the second month following.
2. Creditors are paid in the month following the month of purchase.
3. Lag in payment of wages – one month.
4. Cash at bank on 1st April, 2016 estimated at Rs. 12,500.

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KARPAGAM UNIVERSITY
KARPAGAM ACADEMY OF HIGHER EDUCATION
(Deemed to be University Established Under Section 3 of UGC Act, 1956)
COIMBATORE – 641021
(For the candidates admitted from 2016 onwards)
III INTERNAL EXAMINATION – SEPTEMBER 2017
THIRD SEMESTER

II BBA

MANAGEMENT ACCOUNTING

Date: 13.09.2017 **Maximum: 50 Marks**
Time: 2 Hours

PART – A (20 X1 = 20 Marks)
ANSWER ALL THE QUESTIONS

1. _____ budget is one which incorporates all functional budgets.
   a) Master b) Production c) Sales d) Cash
2. _____ is an example for current asset
   a) Cash b) Plant c) Furniture d) Building
3. The sources side of fund flow statement shows the ___ sources of a firm
   a) Internal b) External c) Internal and external d) Outsiders Fund
4. Fund flow statement is complementary to _____
   a) Balance sheet b) Income statement c) Income statement and balance sheet d) Profit and loss account
5. Which of the following is the source of funds?
   a) Forfeit of shares b) Redemption of debentures c) Purchase of fixed assets d) Issue of shares
6. The cash flow statement is prepared for _____
   a) Four year b) One year c) Two year d) Five year
7. The term cash includes _____
   a) Sundry debtors b) Accounts receivable c) Bills receivables d) Bank balance
8. The cash flow statement analysis helps the management in planning _____
   a) Payment of variable cost b) Replacement of assets c) Credit arrangements d) Payment of Fixed cost
9. Is it possible to prepare projected cash flow statement?
   a) Possible b) Sometimes possible c) Impossible d) Possible for a limited period
10. There will be flow of fund, if there is a transaction between _____
   a) Current account and non-current account b) Current account only
   c) Operating account d) Non Current account only
11. The term current account refers to _____
   a) Current assets b) Current liabilities c) Current assets and current liabilities d) Fixed Asset
12. The statement which shows the periodical increase or decrease in working capital is called _____
   a) Fund flow statement b) Cash flow statement c) Schedule of changes in working capital d) Income statement
13. Variance arises due to the difference between standard usage and actual usage of material _____
   a) Material yield b) Material usage c) Material price d) Material mix
14. Which department is responsible for labour rate variance?
   a) Production department b) Sales department. c) Personnel department d) Purchase department
15. The deviation of the actual cost from the standard cost is known as_____
   a) Profit b) Loss c) Variance d) Net profit before tax
16. There are _____ concepts of working capital
   a) One b) Two c) Three d) Four
17. _____is an example for fixed asset
   a) Cash b) Furniture c) Sundry Debtors d) Bills Receivable
18. _____ is also known as uses of fund
   a) Cost b) Application c) Inflow d) Outflow
19. The word 'fund' means the difference between _____
   a) Current Assets and Fixed Asset b) Current Liabilities and Fixed Asset c) Current Assets and Current Liabilities d) Fixed Assets, Fixed Liabilities, Current Assets and Current Liabilities
20. Cash flows are _____of cash and Cash equivalents.
   a) Inflow b) Outflow c) Application d) Inflow and Outflow

PART – B (3 X 2 = 6 Marks)
ANSWER ALL THE QUESTIONS

21. What is meant by target costing?
22. From the following particulars you are required to prepare the Statement showing schedule of changes in working capital

Liabilities	2008	2009	Assets	2008	2009
Share capital	8,000	9,500	Land	5,000	7,000
Profit & Loss a/c	1,450	3,450	Plant	2,400	3,400
Creditors	900	2,500	Debtors	1,650	2,950
Mortgage Loan	-	1,000	Stock	900	1,700

			Cash at Bank	400	1,400
	10,350	16,450		10,350	16,450

23. Define standard cost

PART – C (3 X 8 = 24 Marks)

ANSWER ALL THE QUESTIONS

24. a."Activity Based Costing is an accounting method that identifies the activities that a firm performs" Comment

Or

b. Prepare schedule of changes in working capital and a statement showing sources and application of fund.

Liabilities	31st December 2014 Rs.	31st December 2015 Rs.	Assets	31st December 2014 Rs.	31st December 2015 Rs.
Share capital	3,00,000	4,00,000	Plant & Machinery	50,000	60,000
Sundry Creditors	1,00,000	70,000	Furniture and Fixtures	10,000	15,000
P & L a/c	15,000	30,000	Stock-in-trade	85,000	1,05,000
			Debtors	1, 60,000	1,50,000
			Cash	1,10,000	1,70,000
	4,15,000	5,00,000		4,15,000	5,00,000

25.a. "Target cost is an approach to determine a product life cycle cost which is sufficient to develop specified functionality and quality" Discuss

Or

b. The following are the balance sheets of P Corporation Ltd., as on 31st December 2014 and 2015

Balance Sheet of P Corporation Ltd.

Liabilities	2014 Rs.	2015 Rs.	Assets	2014 Rs.	2015 Rs.
Share capital [paid-up]					
11 % of cumulative preference shares	49,000	30,000	Land and building	60,000	50,000
Equity shares	1,10,000	1,20,000	Plant and machinery	30,000	50,000
General Reserve	4,000	4,000	Sundry debtors	40,000	48,000
Profit and Loss account	2,000	2,400	Stock	60,000	70,000
9 % Debentures	12,000	49,600	Bank	2,400	7,000
Provision for Taxation	6,000	8,400	Cash	600	1,000
Proposed Dividend	10,000	11, 600			
	1,93,000	2,26,000		1,93,000	2,26,000

You are required to prepare a Cash Flow Statement

26.a. From the summarized balance sheets of Kissan Industries Ltd, Prepare a cash flow statement for the year ended 31st March 2012.

BALANCE SHEETS

Liabilities	31st March 2011	31st March 2012	Assets	31st March 2011	31st March 2012
Share capital	10,000	10,000	Good will	1,200	1,200
General reserve	1,400	1,800	Land	4,000	3,600
Profit & Loss A/c	1,600	1,300	Building	3,700	3,600
Sundry creditors	800	600	Investment	1,000	1,100
Outstanding expenses	120	100	Inventories	3,000	2,400
Provision for taxation	1,600	1,800	Bills receivable	2,000	2,300
Provision for bad and doubtful debts	80	100	Bank	700	1,500
	15,600	15,700		15,600	15,700

Additional Information:

i. A piece of land has been sold for Rs, 400.

ii. Depreciation of Rs. 700 has been charged on building.

iii. Provision for taxation Rs. 2,000 has been made during the year.

Or

b. Explain the advantages and limitations of standard costing?