

## Unit 3

### Budget and Budgetary Control

#### Introduction:

A budget is an accounting plan. It is a formal plan of action expressed in monetary terms. It could be seen as a statement of expected income and expenses under certain anticipated operating conditions. It is a quantified plan for future activities – quantitative blue print for action.

Every organization achieves its purposes by coordinating different activities. For the execution of goals efficient planning of these activities is very important and that is why the management has a crucial role to play in drawing out the plans for its business. Various activities within a company should be synchronized by the preparation of plans of actions for future periods. These comprehensive plans are usually referred to as budgets. Budgeting is a management device used for short-term planning and control. It is not just accounting exercise.

#### Meaning and Definition:

##### Budget:

*According to CIMA (Chartered Institute of Management Accountants) UK, a budget 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, expenditure to be incurred during the period and the capital to be employed to attain a given objective.”*

In a view of Keller & Ferrara, “a budget is a plan of action to achieve stated objectives based on predetermined series of related assumptions.”

G.A.Welsh states, “A budget is a written plan covering projected activities of a firm for a definite time period.”

#### **Characteristics of budget**

The characteristics of budget after observing the above definitions. They are...

- It is mainly a forecasting and controlling device.
- It is prepared in advance before the actual operation of the company or project.
- It is in connection with definite future period.
- Before implementation, it is to be approved by the management.
- It also shows capital to be employed during the period.

## Budgetary Control:

Budgetary Control is a method of managing costs through preparation of budgets. Budgeting is thus only a part of the budgetary control. According to CIMA, “Budgetary control is the establishment of budgets relating to the responsibilities of executives of a policy and the continuous comparison of the actual with the budgeted results, either to secure by individual action, the objective of the policy or to provide a basis for its revision.”

### The main features of budgetary control are:

1. Establishment of budgets for each purpose of the business.
2. Revision of budget in view of changes in conditions.
3. Comparison of actual performances with the budget on a continuous basis.
4. Taking suitable remedial action, wherever necessary.
5. Analysis of variations of actual performance from that of the budgeted performance to know the reasons thereof.

## Objectives of Budgetary Control:

Budgeting is a forward planning. It serves basically as a tool for management control; it is rather a pivot of any effective scheme of control.

The objectives of budgeting may be summarized as follows:

1. **Planning:** Planning has been defined as the design of a desired future position for an entity and it rests on the belief that the future position can be attained by uninterrupted management action. Detailed plans relating to production, sales, raw-material requirements, labour needs, capital additions, etc. are drawn out. By planning many problems estimated long before they arise and solution can be thought of through careful study. In short, budgeting forces the management to think ahead, to foresee and prepare for the anticipated conditions. Planning is a constant process since it requires constant revision with changing conditions.
2. **Co-ordination:** Budgeting plays a significant role in establishing and maintaining coordination. Budgeting assists managers in coordinating their efforts so that problems of the business are solved in harmony with the objectives of its divisions. Efficient planning and business contribute a lot in achieving the targets. Lack of co-ordination in an organization is observed when a department head is permitted to enlarge the department on the specific needs of that department only, although such development may negatively affect other departments and alter their performances. Thus, co-ordination is required at all vertical as well as horizontal levels.
3. **Measurement of Success:** Budgets present a useful means of informing managers how well they are performing in meeting targets they have previously helped to set. In many companies, there is a practice of rewarding employees on the basis of their accomplished low budget targets or promotion of a manager is linked to his budget success record. Success is determined by comparing the past performance with previous period's performance.
4. **Motivation:** Budget is always considered a useful tool for encouraging managers to complete things in line with the business objectives. If individuals have intensely participated in the preparation of budgets, it acts as a strong motivating force to achieve the goals.

5. **Communication:** A budget serves as a means of communicating information within a firm. The standard budget copies are distributed to all management people provide not only sufficient understanding and knowledge of the programmes and guidelines to be followed but also give knowledge about the restrictions to be adhered to.
6. **Control:** Control is essential to make sure that plans and objectives laid down in the budget are being achieved. Control, when applied to budgeting, as a systematized effort is to keep the management informed of whether planned performance is being achieved or not.

### Advantages of Budgetary control:

In the light of above discussion one can see that, coordination and control help the planning. These are the advantages of budgetary control. But this tool offer many other advantages as follows:

1. This system provides basic policies for initiatives.
2. It enables the management to perform business in the most professional manner because budgets are prepared to get the optimum use of resources and the objectives framed.
3. It ensures team work and thus encourages the spirit of support and mutual understanding among the staff.
4. It increases production efficiency, eliminates waste and controls the costs.
5. It shows to the management where action is needed to remedy a position.
6. Budgeting also aids in obtaining bank credit.
7. It reviews the present situation and pinpoints the changes which are necessary.
8. With its help, tasks such as like planning, coordination and control happen effectively and efficiently.
9. It involves an advance planning which is looked upon with support by many credit agencies as a marker of sound management.

### Limitations of Budgetary control:

1. It tends to bring about rigidity in operation, which is harmful. As budget estimates are quantitative expression of all relevant data, there is a tendency to attach some sort of rigidity or finality to them.
2. It being expensive is beyond the capacity of small undertakings. The mechanism of budgeting system is a detailed process involving too much time and costs.
3. Budgeting cannot take the position of management but it is only an instrument of management. 'The budget should be considered not as a master, but as a servant.' It is totally misconception to think that the introduction of budgeting alone is enough to ensure success and to security of future profits.
4. It sometimes leads to produce conflicts among the managers as each of them tries to take credit to achieve the budget targets.
5. Simple preparation of budget will not ensure its proper implementation. If it is not implemented properly, it may lower morale.
6. The installation and function of a budgetary control system is a costly affair as it requires employing the specialized staff and involves other expenditure which small companies may find difficult to incur.

## Essentials of Effective Budgeting:

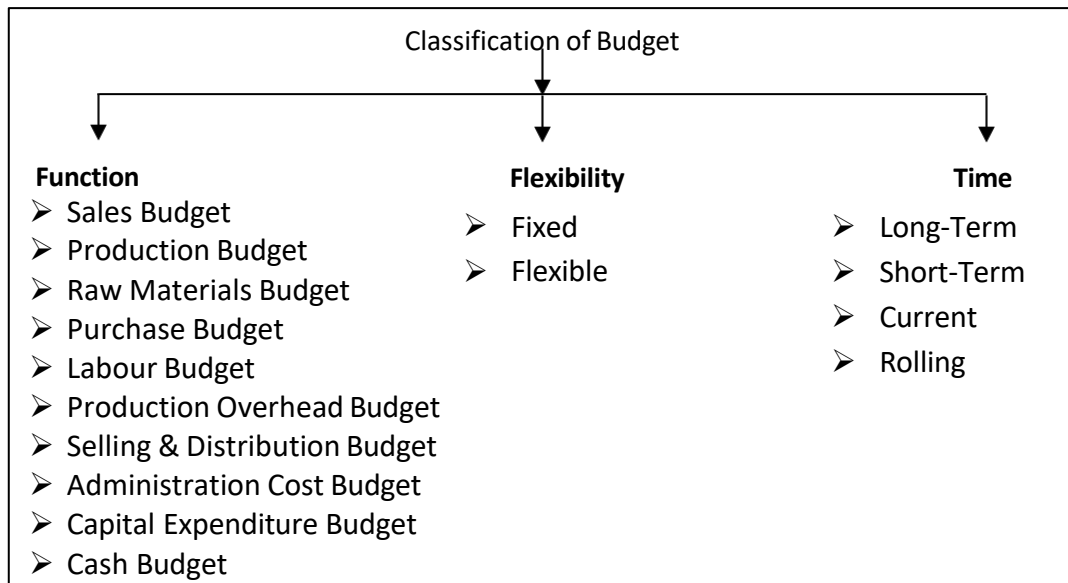
- 1) Support of top management:** If the budget structure is to be made successful, the consideration by every member of the management not only is fully supported but also the impulsion and direction should also come from the top management. No control system can be effective unless the organization is convinced that the management considers the system to be important.
- 2) Team Work:** This is an essential requirement, if the budgets are ready from “the bottom up” in a grass root manner. The top management must understand and give enthusiastic support to the system. In fact, it requires education and participation at all levels. The benefits of budgeting need to be sold to all.
- 3) Realistic Objectives:** The budget figures should be realistic and represent logically attainable goals. The responsible executives should agree that the budget goals are reasonable and attainable.
- 4) Excellent Reporting System:** Reports comparing budget and actual results should be promptly prepared and special attention focused on significant exceptions i.e. figures that are significantly different from expected. An effective budgeting system also requires the presence of a proper feed-back system.
- 5) Structure of Budget team:** This team receives the forecasts and targets of each department as well as periodic reports and confirms the final acceptable targets in form of Master Budget. The team also approves the departmental budgets.
- 6) Well defined Business Policies:** All budgets reveal that the business policies formulated by the higher level management. In other words, budgets should always be after taking into account the policies set for particular department or function. But for this purpose, policies should be precise and clearly defined as well as free from any ambiguity.
- 7) Integration with Standard Costing System:** Where standard costing system is also used, it should be completely integrated with the budget programme, in respect of both budget preparation and variance analysis.
- 8) Inspirational Approach:** All the employees or staff other than executives should be strongly and properly inspired towards budgeting system. Human beings by nature do not like any pressure and they dislike or even rebel against anything forced upon them.

## Classification of Budget:

The extent of budgeting activity varies from firm to firm. In a smaller firm there may be a sales forecast, a production budget, or a cash budget. Larger firms generally prepare a master budget. Budgets can be classified into different ways from different points of view. The following are the important basis for classification:

### Functional Classification:

#### SALES BUDGET:



The sales budget is an estimate of total sales which may be articulated in financial or quantitative terms. It is normally forms the fundamental basis on which all other budgets are constructed. In practice, quantitative budget is prepared first then it is translated into economic terms. While preparing the Sales Budget, the Quantitative Budget is generally the starting point in the operation of budgetary control because sales become, more often than not, the principal budget factor. The factor to be consider in forecasting sales are as follows:

- Study of past sales to determine trends in the market.
- Estimates made by salesman various markets of company products.
- Changes of business policy and method.
- Government policy, controls, rules and Guidelines etc.
- Potential market and availability of material and supply.

#### PRODUCTION BUDGET:

The production budget is prepared on the basis of estimated production for budget period. Usually, the production budget is based on the sales budget. At the time of preparing the budget, the production manager will consider the physical facilities like plant, power, factory space, materials and labour, available for the period. Production budget envisages the production program for achieving the sales target. The budget may be expressed in terms of quantities or money or both. Production may be computed as follows:  $\text{Units to be produced} = \text{Desired closing stock of finished goods} + \text{Budgeted sales} - \text{Beginning stock of finished goods}$ .

## **PRODUCTION COST BUDGET:**

This budget shows the estimated cost of production. The production budget demonstrates the capacity of production. These capacities of production are expressed in terms of cost in production cost budget. The cost of production is shown in detail in respect of material cost, labour cost and factory overhead. Thus production cost budget is based upon Production Budget, Material Cost Budget, Labour Cost Budget and Factory overhead.

## **RAW-MATERIAL BUDGET:**

Direct Materials budget is prepared with an intention to determine standard material cost per unit and consequently it involves quantities to be used and the rate per unit. This budget shows the estimated quantity of all the raw materials and components needed for production demanded by the production budget. Raw material serves the following purposes:

- It supports the purchasing department in scheduling the purchases.
- Requirement of raw-materials is decided on the basis of production budget.
- It provides data for raw material control.
- Helps in deciding terms and conditions of purchase like credit purchase, cash purchase, payment period etc.

It should be noted that raw material budget generally deals with only the direct materials whereas indirect materials and supplies are included in the overhead cost budget.

## **PURCHASE BUDGET:**

Strategic planning of purchases offers one of the most important areas of reduction cost in many concerns. This will consist of direct and indirect material and services. The purchasing budget may be expressed in terms of quantity or money. The main purposes of this budget are:

- It designates cash requirement in respect of purchase to be made during budget period; and
- It facilitates the purchasing department to plan its operations in time in respect of purchases so that long term forward contract may be organized.

## **LABOUR BUDGET:**

Human resources are highly expensive item in the operation of an enterprise. Hence, like other factors of production, the management should find out in advance personnel requirements for various jobs in the enterprise. This budget may be classified into labour requirement budget and labour recruitment budget. The labour necessities in the various job categories such as unskilled, semi-skilled and supervisory are determined with the help of all the head of the departments. The labour employment is made keeping in view the requirement of the job and its qualifications, the degree of skill and experience required and the rate of pay.

## **PRODUCTION OVERHEAD BUDGET:**

The manufacturing overhead budget includes direct material, direct labour and indirect expenses. The production overhead budget represents the estimate of all the production overhead i.e. fixed, variable, semi-variable to be incurred during the budget period. The reality that overheads include many different types of expenses creates considerable problems in:

- 1) Fixed overheads i.e., that which is to remain stable irrespective of vary in the volume of output,
- 2) Apportion of manufacturing overheads to products manufactured, semi variable cost i.e., those which are partly variable and partly fixed.
- 3) Control of production overheads.
- 4) Variable overheads i.e., that which is likely to vary with the output.

The production overhead budget engages the preparation of overheads budget for each division of the factory as it is desirable to have estimates of manufacturing overheads prepared by those overheads to have the responsibility for incurring them. Service departments cost are projected and allocated to the production departments in the proportion of the services received by each department.

## **SELLING AND DISTRIBUTION COST BUDGET:**

The Selling and Distribution Cost budget is estimating of the cost of selling, advertising, delivery of goods to customers etc. throughout the budget period. This budget is closely associated to sales budget in the logic that sales forecasts significantly influence the forecasts of these expenses. Nevertheless, all other linked information should also be taken into consideration in the preparation of selling and distribution budget. The sales manager is responsible for selling and distribution cost budget. Naturally, he prepares this budget with the help of managers of sub-divisions of the sales department. The preparation of this budget would be based on the analysis of the market condition by the management, advertising policies, research programs and many other factors. Some companies prepare a separate advertising budget, particularly when spending on advertisements are quite high.

## **ADMINISTRATION COST BUDGET:**

This budget includes the administrative costs for non-manufacturing business activities like director's fees, managing directors' salaries, office lightings, heating and air condition etc. Most of these expenses are fixed so they should not be too difficult to forecast. There are semi-variable expenses which get affected by the expected rise or fall in cost which should be taken into account. Generally, this budget is prepared in the form of fixed budget.

## **CAPITAL- EXPENDITURE BUDGET:**

This budget stands for the expenditure on all fixed assets for the duration of the budget period. This budget is normally prepared for a longer period than the other functional budgets. It includes such items as new buildings, land, machinery and intangible items like patents, etc. This budget is designed under the observation of the accountant which is supported by the plant engineer and other functional managers. At the time of preparation of the budget some important information should be observed:

- Overfilling on the production facilities of certain departments as revealed by the plant utilization budget.
- Long-term business policy with regard to technical developments.
- Potential demand for certain products.

## **CASH BUDGET:**

The cash budget is a sketch of the business estimated cash inflows and outflows over a specific period of time. Cash budget is one of the most important and one of the last to be prepared. It is a detailed projection of cash receipts from all sources and cash payments for all purposes and the resultant cash balance during the budget. It is a mechanism for controlling and coordinating the fiscal side of business to ensure solvency and provides the basis for forecasting and financing required to cover up any deficiency in cash. Cash budget thus plays a vital role in the financing management of a business undertaken.

Cash budget assists the management in determining the future liquidity requirements of the firm, forecasting for business of those needs, exercising control over cash. So, cash budget thus plays a vital role in the financial management of a business enterprise.

### **Function of Cash Budget:**

- It makes sure that enough cash is available when it is required.
- It designates cash excesses and shortages so that steps may be taken in time to invest any excess cash or to borrow funds to meet any shortages.
- It shows whether capital expenditure could be financed internally.
- It provides funds for standard growth.
- It provides a sound basis to manage cash position.

### **Advantages of Cash Budget:**

- 1. Usage of Cash:** Management can plan out the use of cash in accord with the changes of receipt and payment. Payments can be planned when sufficient cash is available and continue the business activity with the minimum amount of working capital.
- 2. Allocation for Capital Investment:** It is dual benefits such as capital expenditure projects can be financed internally and can get an idea for cash availability of capital investment.
- 3. Provision of Excess Funds:** It reveals the availability of excess cash. In this regard management can decide to invest excess funds for short term or long term according to the requirements in the business.
- 4. Pay-out Policy:** This budgetary system may help the management for future pay-out policy in the form of dividend. In case the cash budget liquid position is not favourable, the management may reduce the rate of dividend or maintain dividend amount or skip dividend for the year.
- 5. Provision for acquiring Funds:** It gives the top level management ideas for acquiring funds for particular time duration and sources to be explored.
- 6. Profitable Use of Cash:** Business person can take decision for the best use of liquidity to make more profitable transaction. It can be used at the time of bulk purchase payments and one get the benefit of discount.



### Limitation of Cash Budget:

- 1. Complex Assumption:** Business is full of uncertainties, so it is very difficult to have near perfect estimates of cash receipts and payments, especially for a longer duration. It can be predicted for short duration such as of three to four months.
- 2. Inflexibility:** If the finance manager fails to show flexibility in implementing the cash budget, it will incur adverse effects. If the manager follows strictly adheres to the estimates of cash inflow it may negatively result in losing customers. Likewise, loyalty in payments may lead to deterioration of liquid position.
- 3. Costly:** Application of this technique necessitates collecting of statistical information from various sources and expert personnel in operation research would be the costliest deal. It becomes expensive which may not be affordable to small business houses. In addition, finding out experts is not always possible. In this situation the long term predictions do not prove correct.

### Methods:

- 1. Receipt and payment:** It is most popular and is universally used for preparing cash budget. The assumption of statistical data is arrived at calculated on the basis of requirements like monthly, weekly or fortnightly. On account of elasticity, this method is used in forecasting cash at different time periods and thus it helps in controlling cash distributions.
  - (a) Cash receipts from customers are based on sales forecast. The term of sale, lag in payment etc., are generally taken into consideration.
  - (b) Cash receipts from other sources, such as dividends and interest on trade investment, rent received, issue of capital, sale of investment and fixed assets.
  - (c) Cash requirements for purchase of materials, labour and salary cost and overhead expenses based on purchasing, personnel and overhead budgets.
  - (d) Cash requirements for capital expenditure as per the capital expenditure budget.
  - (e) Cash requirements for other purposes such as payment of dividends, income-tax liability, fines and penalties.
  - (i) Estimating Cash Receipts: Generally main sources of cash receipts are sales, interest and dividend, sales of assets and investments, capital borrowings etc. The Company estimates time-lag on the basis of past experience of cash receipts on credit sales while cash sales can be easily determined.
  - (ii) Estimating Cash Payments: It can be decided on the basis of various operating budgets prepared for the payment of credit purchase, payment of labour cost, interest and dividend, overhead charges, capital investment etc.
- 2. Adjusted Profit and Loss Account:** This method is based on cash and non-cash transactions. This method estimates closing cash balance by converting profit into cash. The hypothesis of this method is that the earning of profit brings equal amount of cash into the business. The net profit shown by profit and loss account does not signify the actual cash flow into the business. This also leads to another assumption, that is the business will remain static, i.e. there will be no wearing out or increase of assets and changes of working capital so that the total cash on hand for the business would be equal to the profit earned.
- 3. Budgeted Balance Sheet Method:** This method looks like the Adjusted Profit and Loss Account method only, except that in this method a Balance Sheet is projected and in that method Profit and Loss Account is adjusted. In this method Balance Sheet is prepared with the projected amount of all assets and liabilities except cash at the end of budget period. The cash balance will find out balancing amount. If assets side is higher than liability side it would be the bank overdraft while liability side is higher than assets side it gives bank balance. This method is used by the stable business houses.

- 4. Working Capital Differential Method:** It is based on the estimate of working capital. It begins with the opening working capital and is added to or deducted from any changes made in the current assets except cash and current liabilities. At the end of the budget period balance shows the real cash balance. This method is quite similar to the Balance Sheet method.

**Model of Cash Budget**

Particular	January	February	March
Opening Balance	-	-	-
<b>Add: Receipts:</b>			
Cash Sales	-	-	-
Receipts from Debtors	-	-	-
Interest and Dividend	-	-	-
Sale of fixed assets	-	-	-
Sale of Investments	-	-	-
Bank Loan	-	-	-
Issue Shares & Debenture	-	-	-
Others	-	-	-
<b>Total Receipts (A)</b>	-	-	-
<b>Less: Payments</b>			
Cash Purchases	-	-	-
Payment to creditors	-	-	-
Salaries & wages	-	-	-
Administrative expenses	-	-	-
Selling expenses	-	-	-
Dividend payable	-	-	-
Purchase of Fixed Assets	-	-	-
Repayment of Loan	-	-	-
Payment of taxes	-	-	-
<b>Total Payments (B)</b>	-	-	-
<b>Closing Balance (A - B)</b>	-	-	-

## **FIXED AND FLEXIBLE BUDGET:**

### **1. FIXED BUDGET:**

A fixed budget is prepared for one level of output and one set of condition. This is a budget in which targets are tightly fixed. It is known as a static budget. It is firm and prepared with the assumption that there will be no change in the budgeted level of motion. Thus, it does not provide room for any modification in expenditure due to the change in the projected conditions and activity. Fixed budgets are prepared well in advance.

This budget is not useful because:

- The conditions go on the changing and cannot be expected to be firm.
- The management will not be in a position to assess, the performance of different heads on the basis of budgets prepared by them because to the budgeted level of activity.
- It is hardly of any use as a mechanism of budgetary control because it does not make any difference between fixed, semi-variable and variable costs
- It does not provide any space for alteration in the budgeted figures as a result of change in cost due to change in the level of activity.

### **2. FLEXIBLE BUDGET:**

This is a dynamic budget. In comparison with a fixed budget, a flexible budget is one “which is designed to change in relation to the level of activity attained.” An equally accurate use of the flexible budgets is for the purposes of control.

Flexible budgeting has been developed with the objective of changing the budget figures so that they may correspond with the actual output achieved. It is more sensible and practical, because changes expected at different levels of activity are given due consideration. Thus a budget might be prepared for various levels of activity in accord with capacity utilization.

Flexible budget may prove more useful in the following conditions:

- Where the level of activity varies from period to period.
- Where the business is new and as such it is difficult to forecast the demand.
- Where the organization is suffering from the shortage of any factor of production. For example, material, labour, etc. as the level of activity depends upon the availability of such a factor.
- Where the nature of business is such that sales go on changing.
- Where the changes in fashion or trend affects the production and sales.
- Where the organization introduces the new products or changes the patterns and designs of its products frequently.
- Where a large part of output is intended for the export.

#### **Uses of Flexible Budget:**

In flexible budgets numbers are adjustable to any given set of operating conditions. It is, therefore, more sensible than a fixed budget which is true only in one set of operating environment.

Flexible budgets are also useful from the view point of control. Actual performance of an executive should be compared with what he should have achieved in the actual circumstances and not with what he should have achieved under quite different circumstances. At last, flexible budgets are

more realistic, practical and useful. Fixed budgets, on the other hand, have a limited application and are suited only for items like fixed costs.

### Preparation of a Flexible Budget

The preparation of a flexible budget requires the analysis of total costs into fixed and variable components. This analysis of course is, not unusual to the flexible budgeting, is more important in flexible budgeting than in fixed budgeting. This is so because in flexible budgeting, varying levels of output are considered and each class of overhead will be different for each level. Thus the flexible budget has the following main distinguishing features:

- ✓ It is prepared for a range of activity instead of a single level.
- ✓ It provides a dynamic basis for comparison because it is automatically related to changes in volume.

The formulation of a flexible budget begins with analyzing the overhead into fixed and variable cost and determining the extent to which the variable cost will vary within the normal range of activity. In a simple equation form it could be put as:

$Y = a + bx$  and it is illustrated as below:

Cost	Flexible budget		$Y = a + b x$
Fixed	Rs.5000	+	Rs. 0(x)
Variable	Rs.0	+	Rs.2.5(x)
Semi-Variable	Rs.500	+	Rs.1.0(x)
	Rs.5500	+	Rs.3.5(x)

There are two methods of preparing such a budget:

**(i) Formula Method / Ratio Method:** This is also known as the Budget Cost Allowance Method. In this method the budget should be prepared as follows:

(a) Before the period begins:

- ✓ Budget for a normal level of activity,
- ✓ Segregate into fixed and variable costs,
- ✓ Compute the variable cost per unit of activity

(b) At the end of the period:

- ✓ Ascertain the actual activity
- ✓ Compute the variable cost allowed for this level, add the fixed cost to give the budget cost allowance.

The whole process is expressed in the formula:

Allowed cost = Fixed cost + (Actual units of activity for the period) (Variable cost per unit of activity)

**(ii) Multi-Activity Method:** This method involves computing a budget for every major level of activity. When the actual level of activity is known, the allowed cost is found “interpolating” between the budgets of activity levels on either side.

- ✓ Different levels of activity are expressed in terms of either production units or sales values. The levels of activity are generally expressed in production units or in terms of sales values.
- ✓ The fixation of the budget cost gives allowance for the budget centres. According to CIMA London, the budget cost allowance means, "the cost which a budget centre is expected to incur during a given period of time in relation to the level of activity attained by the budget centre."
- ✓ The determination of the different levels of activity for which the flexible budget is to be prepared.

**(3) Graphic Method:** In this method, estimates of budget are presented graphically. In this costs are divided into three classes, viz., fixed, variable and semi-variable cost. Values of costs are obtained for different levels of production. These values are signified in the form of a graph.

### Model of Flexible Budget

Particulars	Capacity Utilization		
	60%	80%	100%
1. Prime Cost:			
- Direct Material	-	-	-
- Direct Labour	-	-	-
- Direct expenses (if any)	-	-	-
<b>Total (A)</b>	-	-	-
2. Variable overheads:			
- Maintenance & repairs	-	-	-
- Indirect Labour	-	-	-
- Indirect Material	-	-	-
- Factory overheads	-	-	-
- Administrative Overheads	-	-	-
- Selling & distribution O/H	-	-	-
<b>Total (B)</b>	-	-	-
3. Marginal Cost (A + B)	-	-	-
4. Sales	-	-	-
5. Contribution ( Sales - MC)	-	-	-
6. Fixed cost			
- Factory overheads	-	-	-
- Administrative Overheads	-	-	-
- Selling & distribution O/H	-	-	-
<b>Total (C)</b>	-	-	-
<b>7. Profit or Loss (C- FC)</b>	-	-	-

## Zero Base Budgeting:

The 'Zero-Base' refers to a 'nil-budget' as the starting point. It starts with a presumption that the budget for the next period is 'zero' until the demand for a function, process, or project is not justified for single penny. The assumption is that without such justification, no expenditure will be allowed. In effect, each manager or functional head is required to carry out cost-benefit analysis of each of the activities, etc. under his control and for which he is responsible.

The method of ZBB suggests that the business should not only make decision about the proposed new programmes but it should also, regularly, review the suitability of the existing programmes. This approach of preparing a budget is called incremental budgeting since the budget process is concerned mainly with the increases or changes in operations that are likely to occur during the budget period.

This method for the first time was used by the Department of Agriculture, U.S.A. in the 19<sup>th</sup> century. Other State Governments of the U.S.A. found this method helpful and so almost all the states took deep interest in the ZBB method. A number of states of America use this technique even today. The ICAI has brought out a research in the form of a monograph showing the application of the ZBB method that worries in tandem with the concerns for national environment and its requirements. In India, however, the ZBB approach has not been fully accepted and actualized.

"ZBB is a management tool, which provides a systematic method for evaluating all operations and programmes, current or new, allows for budget reductions and expansions in a rational manner and allows re-allocation of sources from low to high priority programmes."

- David Lieninger

ZBB is a planning, resource allocation and control tool. It, however, presupposes that

- (a) There is an efficient budgeting system within the enterprise.
- (b) Managers can develop quantitative measures for use in performance evaluation.
- (c) Among the new suggestions and programmes, along with old ones are put to a strict scrutiny.
- (d) Funds are diverted from low-priority suggestions to high priority suggestions.

### Procedure of Zero-base Budgeting:

- (1) Determination of the objective:** This is an initial step for determining the objective to introduce ZBB. It may result into the decreased cost in personnel overheads or debunk the projects which do not fit in the business structure or which are not likely to help accomplish the business objectives.
- (2) Degree at the ZBB is to be introduced:** It is not possible every time to evaluate every activity of the whole business. After studying the business structure, the management can decide whether ZBB is to be introduced in all areas of business activities or only in a few selected areas on the trial basis.
- (3) Growth of Decision units:** Decision units submit their data as to which cost benefit analysis should be done in order to arrive at a decision that helps them decide to continue or abandon. It could be a functional department, a programme, a product-line or a sub-line. Here the decision unit exist independent of all the other units so that when the cost analysis turns unfavourable that particular unit could be closed down.
- (4) Growth of Decision packages:** Decision units are to be identified for preparing data relating to the proposals to be included in the budget, concerned manager analyzes the activities of his or her own decision units. His job is to consider possible different ways to fulfill objectives. The

size of the business unit and the volume of goods it deals with determine the number of decision units and packages. The decision package has to contain all the information which helps the management in deciding whether the information is necessary for the business, what would be the estimated costs and benefits expected from it.

- (5) Assessment and Grading of decision packages:** These packages invented and formulated are submitted to the next level of responsibility within the organization for ranking purposes. Ranking basically decides as to whether or not to include the proposals in the budget. The management ranks the different decision packages in the order from decreasing benefit or importance to the organization. Preliminary ranking is done by the unit manager himself and for the further review it is sent to the superior officers who consider overall objectives of the organization.
- (6) Allotment of money through Budgets:** It is the last step engaged in the ZBB process. According to the cost benefit analysis and availability of the funds management has ranks and thereby a cut-off point is established. Keeping in view reasonable standards, the approved designed packages are accepted and others are rejected. The funds are then allotted to different decision units and budgets relating to each unit are prepared.

#### **Advantages:**

- ✓ ZBB rejects the attitude of accepting the current position in support of an attitude of inquiring and testing each item of budget.
- ✓ It helps improve financial planning and management information system through various techniques.
- ✓ It is an educational process and can promote a management team of talented and skillful people who tend to promptly respond to changes in the business environment.
- ✓ It facilitates recognition of inefficient and unnecessary activities and avoid wasteful expenditure.
- ✓ Cost behavior patterns are more closely examined.
- ✓ Management has better elasticity in reallocating funds for optimum utilization of the funds.

#### **Disadvantages:**

- ✓ It is an expensive method as ZBB incurs a huge cost every in its preparation.
- ✓ It also requires high volume of paper work; hence sometimes it becomes a tedious job.
- ✓ In ZBB there is a danger of emphasizing short-term benefits at the expenses of long term ones.
- ✓ This is not a new method for evaluating various alternatives, and cost-benefit analysis.
- ✓ The psychological effects can also not be ignored. It holds out high hopes as a modern technique, claiming to raise the profitability and efficiency of the business.

**Budgets & Budgetary Control**  
**Practical Problems (with solutions)**

**Flexible Budget**

- (1)** Prepare a Flexible budget for overheads on the basis of the following data.  
Ascertain the overhead rates at 50% and 60% capacity.

<b>Variable overheads:</b>	At 60% capacity (Rs)
Indirect Material	6,000
Labour	18,000
<b>Semi-variable overheads:</b>	
Electricity: (40% Fixed & 60% variable)	30,000
<b>Repairs:</b> (80% fixed & 20% Variable)	3,000
<b>Fixed overheads:</b>	
Depreciation	16,500
Insurance	4,500
Salaries	15,000
Total overheads	93,000
Estimated direct labour hours	1,86,000
<b>Solution:</b>	
<b>Flexible Budget</b>	

Items	Capacity	
	50%	60%
<b>Variable overheads:</b>	<b>Rs</b>	<b>Rs</b>
	.	.



|

Material

|

5,000

|

6,000

|

Labour	15,000	18,000
<b>Semi-variable</b>		
Electricity	27,000	30,000
Repairs	2,900	3,000
<b>Fixed overheads:</b>		
Deprecation	16,500	16,500
Insurance	4500	4500
Salaries	15,000	15,000
Total Overheads	85,900	93,000
Estimated direct labour hours	1,55,000	1,86,000
Overhead Rate	0.55	0.50

### Working Notes:

#### Electricity

$$\begin{aligned} \text{At 50\% capacity} &= \frac{18,000}{60} * 50 \\ &= \text{Rs. 15,000} \end{aligned}$$

$$\text{Rs. 12,000} + \text{Rs. 15,000} = \text{Rs. 27,000}$$

$$60\% \text{ capacity} = \text{Rs 18,000} + \text{Rs. 12,000} = \text{Rs. 30,000}$$

#### Repairs

$$\text{For 60\% capacity} = \text{Rs.600}$$

$$= \text{Rs. 2400} + \text{Rs.600} = \text{Rs.3,000}$$

$$\text{At 50\% capacity :} = 600/60 * 50$$

$$= \text{Rs. 500}$$

$$= \text{Rs.2400} + 500$$

$$= \text{Rs.2,900}$$

- (2)** Prepare a flexible budget for overheads on the basis of the following data.  
Ascertain the overhead rates at 60% and 70% capacity.

<b>Variable overheads:</b>	At 60% capacity(Rs)
Material	6,000
Labour	18,000
<b>Semi-variable overheads:</b>	
Electricity:	30,000
40% Fixed	
60% variable	
<b>Repairs:</b>	
80% fixed	3,000
20% Variable	3,000
<b>Fixed overheads:</b>	
Depreciation	16,500
Insurance	4,500
Salaries	15,000
Total overheads	93,000
Estimated direct labour hours	1,86,000

**Solution:**

**Working:**

**Repairs**

For 60% capacity Fixed  $80/100 * 3,000 = \text{Rs.}2400$

Variable =  $20/100 * 3,000 = \text{Rs. } 600$

=Rs. 2400 + Rs.600 =Rs.3,000

**Electricity Exp.:**

At 60% capacity      Fixed =  $40/100 * 30,000 = 12,000$

Variable =  $60/100 * 30,000 =$   
 18,000 At 70% capacity:      Fixed =  $40/100 * 30,000$   
 = Rs. 12,000

Variable =  $18,000/60 * 70 = \text{Rs. } 21,000$   
 Total Rs. = 33,000

**Flexible Budget**

Items	Capacity	
	60%	70%
<b>Variable overheads:</b>	<b>Rs.</b>	<b>Rs</b>
Material	6,000	7,000
Labour	18,000	21,000
<b>Semi-variable</b>		
Electricity	30,000	33,000
Repairs	3,000	3,100
<b>Fixed overheads:</b>		
Deprecation	16,500	16,500
Insurance	4,500	4,500
Salaries	15,000	15,000
Total Overheads	93,000	1,00,100
Estimated direct labour hours	1,86,000	2,17,000
Overhead Rate	0.50	0.46

**(3)** The expenses budgeted for production of 1,000 units in a factory are furnished below:

<b>Particulars</b>	<b>Per Unit Rs.</b>
Material Cost	700
Labour Cost	250
Variable overheads	200
Selling expenses (20% fixed)	130
Administrative expenses (Rs. 2,00,000)	200
<b>Total Cost</b>	<b>1,480</b>

Prepare a budget for production of 600 units and 800 units assuming administrative expenses are rigid for all level of production.

**Solution:**

**Flexible Budget**

<b>Particulars</b>	<b>For 600 units</b>		<b>For 800 units</b>	
	<b>Per unit Rs.</b>	<b>Total Rs.</b>	<b>Per unit Rs.</b>	<b>Total Rs.</b>
<b>Variable Cost:</b>				
Materials	700	4,20,000	700	5,60,000
Labour	250	1,50,000	250	2,00,000
Variable overheads	200	1,20,000	200	1,60,000
<b>(A)</b>	<b>1,150</b>	<b>6,90,000</b>	<b>1,150</b>	<b>9,20,000</b>
<b>Semi variable cost:</b>				
Variable selling expenses	104	62,400	104	83,200
Fixed selling expenses	43.33	26,000	32.50	26,000
<b>(B)</b>	<b>147.33</b>	<b>88,400</b>	<b>136.50</b>	<b>1,09,200</b>
<b>Fixed cost:</b>				
Administrative expenses	333.33	2,00,000	250.00	2,00,000
<b>Total Cost(A+B+C)</b>	<b>1,630.66</b>	<b>9,78,400</b>	<b>1,536.50</b>	<b>12,29,200</b>

- (4) The budgeted output of a industry specializing in the production of a one product at the optimum capacity of 6,400 units per annum amounts to Rs. 1,76,048 as detailed below:

Particulars	Rs.	Rs.
Fixed costs		20,688
Variable costs:		
Power	1,440	
Repairs etc.	1,700	
Miscellaneous	540	
Direct material	49,280	
Direct Labour	1,02,400	1,55,360
Total cost		1,76,048

The company decides to have a flexible budget with a production target of 3,200 and 4,800 units (the actual quantity proposed to be produced being left to a later date before commencement of the budget period)

Prepare a flexible budget for production levels of 50% and 75%. Assuming, selling price per unit is maintained at Rs. 40 as at present, indicate the effect on net profit.

Administrative , selling and distribution expenses continue at Rs.3,600.

Solution:

The production at 100% capacity is 6400 units, so it will be 3,200 units at 50% and 4,800 units at 75% capacity. The variable expenses will change in that proportion.

#### Flexible Budget

Particulars	100 %	75%	50 %
(i) Sales (per unit Rs.40)	2,56,000	1,92,000	1,28,000
Cost of Sales:			

(a)variable costs:			
Direct material	49,280	36,960	24,640
Direct Labour	1,02,400	76,800	51,200
Power	1,440	1,080	720
Repairs	1,700	1,275	850
Miscellaneous	540	405	270
<b>Total variable costs</b>	<b>1,55,360</b>	<b>1,16,520</b>	<b>77,680</b>
(b)Fixed Costs:	20,688	20,688	20,688
<b>(ii) Total Costs</b>	<b>1,76,048</b>	<b>1,37,208</b>	<b>98,368</b>
<b>Gross Profit(i)- (ii)</b>	<b>79,952</b>	<b>54,792</b>	<b>29,632</b>
Less: Adm., selling and Dist. Costs	3,600	3,600	3,600
<b>Net Profit</b>	<b>76,352</b>	<b>51,192</b>	<b>26,032</b>

- (5)** A factory engaged in manufacturing plastic buckets is working at 40% capacity and produces 10,000 buckets per month.

The present cost break up for one bucket is as under:

Materials

Rs.10 Labour

Rs.3

Overheads Rs.5 (60% fixed)

The selling price is Rs.20 per bucket. If it is desired to work the factory at 50% capacity the selling price falls by 3%. At 90% capacity the selling price falls by 5% accompanied by a similar fall in the price of material.

You are required to prepare a statement the profit at 50% and 90% capacities and also calculate the break- even points at this capacity production.

**Solution****Flexible Budget**

<b>Particulars</b>	<b>Capacity</b>		
	<b>40%</b>	<b>50%</b>	<b>90%</b>
Production and sales Units	10,000	12,500	22,500
Sales price per unit	20	19.40	19.00
Sales Amount	2,00,000	2,42,500	4,27,500
<b>Marginal Cost:</b>			
Material: Rs.10 per unit(at 90% - Rs.9.50 per unit)	1,00,000	1,25,000	2,13,750
Labour	30,000	37,500	67,500
Variable overhead	20,000	25,000	45,000
<b>Total</b>	<b>1,50,000</b>	<b>1,87,500</b>	<b>3,26,250</b>
Contribution	50,000	55,000	1,01,250
Less: Fixed Cost	30,000	30,000	30,000
Profit	20,000	25,000	71,250
Contribution per unit	5	4.40	4.50
<b>BEP (units) (F /C)</b>	<b>6,000</b>	<b>6,818</b>	<b>6,667</b>



### CASH BUDGET

- (1) Saurashtra Co. Ltd. wishes to arrange overdraft facilities with its bankers from the period August to October 2019 when it will be manufacturing mostly for stock. Prepare a cash budget for the above period from the following data given below:

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)	Mfg. Exp. (Rs.)	Office Exp. (Rs.)	Selling Exp. (Rs.)
June	1,80,000	1,24,800	12,000	3,000	2,000	2,000
July	1,92,000	1,44,000	14,000	4,000	1,000	4,000
August	1,08,000	2,43,000	11,000	3,000	1,500	2,000
September	1,74,000	2,46,000	12,000	4,500	2,000	5,000
October	1,26,000	2,68,000	15,000	5,000	2,500	4,000
November	1,40,000	2,80,000	17,000	5,500	3,000	4,500
December	1,60,000	3,00,000	18,000	6,000	3,000	5,000

#### Additional Information:

- (a) Cash on hand 1-08-2010 Rs.25,000.
- (b) 50% of credit sales are realized in the month following the sale and the remaining 50% in the second month following. Creditors are paid in the month following the month of purchase.
- (c) Lag in payment of manufacturing expenses half month.
- (d) Lag in payment of other expenses one month.

**Solution:**

***CASH BUDGET***

***For 3 months from August to October 2019***

<b>Particulars</b>	<b>August (Rs.)</b>	<b>September (Rs.)</b>	<b>October (Rs.)</b>
<b>Receipts:</b>			
Opening balance	25,000	44,500	(66,750)
Sales	1,86,000	1,50,000	1,41,000
<b>Total Receipts(A)</b>	<b>2,11,000</b>	<b>1,94,500</b>	<b>74,250</b>
<b>Payments:</b>			
Purchases	1,44,000	2,43,000	2,46,000
Wages	14,000	11,000	12,000
Mfg. Exp.	3,500	3,750	4,750
Office Exp.	1,000	1,500	2,000
Selling Exp.	4,000	2,000	5,000
<b>Total payments(B)</b>	<b>1,66,500</b>	<b>2,61,250</b>	<b>2,69,750</b>
<b>Closing Balance(A-B)</b>	<b>44,500</b>	<b>(66,750)</b>	<b>(1,95,500)</b>

Working Note:

1. Manufacturing Expense:

Particular	August	September	October
July (4000/2)	2000	---	---
August (3000/2)	1500	1500	---
September (4500/2)	---	2250	2250
October (5000/2)	---	----	2500
Total	3500	3750	4750

## 2. Sales

Particular	August	September	October
June (180000/2)	90000	---	---
July (192000/2)	96000	96000	---
August (108000/2)	---	54000	54000
September (174000/2)	---	---	87000
Total	186000	150000	141000

- (2) S. K. Brothers wish to approach the bankers for temporary overdraft facility for the period from October 2019 to December 2019. During the period of this period of these three months, the firm will be manufacturing mostly for stock. You are required to prepare a cash budget for the above period.

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)
August	3,60,000	2,49,600	24,000
September	3,84,000	2,88,000	28,000
October	2,16,000	4,86,000	22,000
November	3,48,000	4,92,000	20,000
December	2,52,000	5,36,000	30,000

- (a) 50% of credit sales are realized in the month following the sales and remaining 50% in the second following.
- (b) Creditors are paid in the month following the month of purchase
- (c) Estimated cash as on 1-10-2019 is Rs.50,000.

## CASH BUDGET

*For 3 months from October to December 2019*

Particulars	October (Rs.)	November(Rs.)	December(Rs.)
<b>Receipts:</b>			
Opening balance	50,000	1,12,000	(94,000)
Collection from Debtors	3,72,000	3,00,000	2,82,000
<b>Total Receipts(A)</b>	4,22,000	4,12,000	1,88,000
<b>Payments:</b>			
Payments to Creditors	2,88,000	4,86,000	4,92,000
Wages	22,000	20,000	30,000
<b>Total payments(B)</b>	3,10,000	5,06,000	5,22,000
<b>Closing Balance(A-B)</b>	<b>1,12,000</b>	<b>(94,000)</b>	<b>-3,34,000</b>

**Working Note: Collection from debtors**

Particulars	October (Rs.)	November(Rs.)	December(Rs.)
<b>Sales</b>			
August	1,80,000		-
September	1,92,000	1,92,000	-
October	-	1,08,000	1,08,000
November	-		1,74,000
	3,72,000	3,00,000	2,82,000

- (3) TATA Co. Ltd. is to start production on 1<sup>st</sup> January 2019. The prime cost of a unit is expected to be Rs. 40 (Rs. 16 per materials and Rs. 24 for labour). In addition, variable expenses per unit are expected to be Rs. 8 and fixed expenses per month Rs. 30,000. Payment for materials is to be made in the month following the purchase. One-third of sales will be for cash and the rest on credit for settlement in the following month. Expenses are payable in the month in which they are incurred. The selling price is fixed at Rs. 80 per unit. The number of units to be produced and sold is expected to be: January 900; February 1200; March 1800; April 2000; May 2,100; June 2400  
Draw a Cash Budget indicating cash requirements from month to month.

**CASH BUDGET of TATA LTD.**

*For 6 months from January to June 2011*

Month	Jan.	Feb.	March	April	May	June
<b>Receipts</b>						
Opening Balance		(34,800)	(37,600)	(32,400)	(5,867)	(27,600)
Cash sales	24,000	32,000	48,000	53,333	56,000	64,000
Collection from Debtors		48,000	64,000	96,000	1,06,667	1,12,000
<b>Total receipts(A)</b>	24,000	45,200	74,400	1,16,933	1,56,800	1,48,400
<b>Payments</b>						
Creditors		14,400	19,200	288,00	32,000	33,600
Wages	21,600	28,800	43,200	48,000	50,400	57,600
Variable Exp.	7,200	9,600	14,400	16,000	16,800	19,200
Fixed Exp.	30,000	30,000	30,000	30,000	30,000	30,000
<b>Total Payment(B)</b>	58,800	82,800	1,06,800	1,22,800	1,29,200	1,40,400
<b>Closing Balance</b>	<b>-34,800</b>	<b>-37600</b>	<b>-32400</b>	<b>-5867</b>	<b>-27,600</b>	<b>8,000</b>

**(4)** Prepare a Cash Budget from the data given below for a period of six months (July to December)

(1) Month	Sale s	Raw Materials
May	75,000	37,500
June	75,000	37,500
July	1,50,000	52,500
August	2,25,000	3,67,500
September	3,00,000	1,27,500
October	1,50,000	97,500
November	1,50,000	67,500
December	1,37,500	—

(2) Collection estimates:

- ❖ Within the month of sale: 5%
- ❖ During the month following the sale: 80%
- ❖ During the second month following the sale: 15%

(3) Payment for raw materials is made in the next month.

(4) Salary Rs. 11,250, Lease payment Rs. 3750, Misc. Exp. Rs. 1150, are paid each month

(5) Monthly Depreciation Rs. 15,000

(6) Income tax Rs. 26,250 each in September and December.

(7) Payment for research in October Rs.75,000

(8) Opening Balance on 1<sup>st</sup> July Rs.55,000.

## **CASH BUDGET**

*For the six months from July to December*

<b>Particulars</b>	<b>July</b>	<b>Aug.</b>	<b>Sep.</b>	<b>October</b>	<b>Nov.</b>	<b>December</b>
<b>Receipts</b>						
Opening Balance	55,000	80,100	1,53,950	-38450	24150	83000
Collection from Debtors	78,750	1,42,500	2,17,500	2,81,250	1,725,00	1,49,375
<b>Total receipts(A)</b>	<b>1,33,750</b>	<b>2,22,600</b>	<b>3,71,450</b>	<b>2,42,800</b>	<b>1,96,650</b>	<b>2,32,375</b>
<b>Payments</b>						
Payment to suppliers	37,500	52,500	3,67,500	1,27,500	97,500	67,500
Salary	11,250	11,250	11,250	11,250	11,250	11,250
Lease payment	3750	3750	3750	3750	3750	3750
Misc. expense	1,150	1,150	1,150	1,150	1,150	1,150
Income tax			26,250			26,250
Payment for Research				75,000		
<b>Total Payment(B)</b>	<b>53,650</b>	<b>68,650</b>	<b>4,09,900</b>	<b>2,18,650</b>	<b>1,13,650</b>	<b>1,09,900</b>
<b>Closing Balance</b>	<b>80,100</b>	<b>1,53,950</b>	<b>-38,450</b>	<b>24,150</b>	<b>83,000</b>	<b>1,22,475</b>

**Note:** Depreciation is a non-cash item. It does not involve cash flow. Hence, depreciation will not be considered as payment through cash.

**(5)** Prepare a cash Budget of R.M.C. LTD. for April, May and June 2019:

Months	Sales(Rs.)	Purchases(Rs.)	Wages(Rs.)	Expenses(Rs.)
Jan.(Actual)	80,000	45,000	20,000	5,000
Feb.(Actual)	80,000	40,000	18,000	6,000
March (Actual)	75,000	42,000	22,000	6,000
April (Budget)	90,000	50,000	24,000	7,000
May(Budget)	85,000	45,000	20,000	6,000
June(Budget)	80,000	35,000	18,000	5,000

**Additional Information:**

- (i) 10% of the purchases and 20% of sales are for cash.
- (ii) The average collection period of the company is  $\frac{1}{2}$  month and the credit purchases are paid regularly after one month.
- (iii) Wages are paid half monthly and the rent of Rs. 500 included in expenses is paid monthly and other expenses are paid after one month lag.
- (iv) Cash balance on April 1,2019 may be assumed to be Rs.15,000



### *CASH BUDGET*

*(For the months ending April, May & June 2019)*

<b>Particulars</b>	<b>April (Rs.)</b>	<b>May (Rs.)</b>	<b>June (Rs.)</b>
<b>Receipts</b>			
Opening Balance Cash	15,000	27,200	35,700
Sales Collection from Debtors	18,000	17,000	16,000
	66,000	70,000	66,000
<b>Total Receipts(A)</b>	99,000	1,14,200	1,17,700
<b>Payments</b>			
Cash Purchases	5,000	4,500	3,500
Payment to creditors	37,800	45,000	40,500
Wages	23,000	22,000	19,000
Rent	500	500	500
Other Exp.	5,500	6,500	5,500
<b>Total Payments(B)</b>	71,800	78,500	69,000
<b>Closing balance</b>	<b>27,200</b>	<b>35,700</b>	<b>48,700</b>