

BUDGET & BUDGETARY CONTROL

Question 1

What are the various formulae used in calculating budget ratios? (3 Marks)(June, 2009)

Answer

Type of budgeted ratio used are:

1. Efficiency Ratio = $(\text{Standard hours} + \text{Actual hours}) \times 100$
2. Activity Ratio = $(\text{Standard hours} + \text{Budgeted hours}) \times 100$
3. Calendar Ratio = $(\text{Available working days} \div \text{budgeted working days}) \times 100$
4. Standard Capacity Usage Ratio $(\text{Budgeted hours} \div \text{Max. possible hours in the budgeted period}) \times 100$
5. Actual Capacity Usage Ratio = $(\text{Actual hours worked} + \text{Maximum possible working hours in a period}) \times 100$
6. Actual usage of Budgeted Capacity Ratio = $(\text{Actual working hours} \div \text{Budgeted hours}) \times 100$

Question 2

What are the steps involved in Zero-base budgeting? (5 Marks)(Nov.,2010)

Answer

Steps involved in the process of Zero Based Budgeting:

1. Determination of a set of objects is the pre-requisite and essential step in the direction of ZBB technique.
2. Deciding about the extent to which the technique of ZBB is to be applied whether in all areas of organization activities or only in few selected areas on trial basis.

3. Identify the areas where decisions are required to be taken.
4. Developing decision packages and ranking them in order of performance.
5. Preparation of budget that is translating decision packages into practicable units/items and allocating financial resources.

ZBB is simply an extension of the cost, benefit analysis method to the area of corporate planning and budgeting.

Question 3

The CEO of your company has been given the following statement showing the results for a recent month:

Particulars	Master Budget	Actual
Units produced & sold	10,000	9,000
	₹	₹
Sales	8,00,000	7,00,000
Direct material	2,00,000	1,84,000
Direct Wages	3,00,000	2,62,000
Variable overhead	1,00,000	94,000
Fixed overhead	1,00,000	98,000
Total Cost	7,00,000	6,38,000
Net Surplus	1,00,000	62,000

The standard cost of the product is as follows:

Direct material (1 kg @ ₹ 20/kg) ₹ 20.00 per unit

Direct Wages (1 hour @ ₹ 30/hour) ₹ 30.00 per unit

Variable overhead (1 hour @ ₹ 10/hour) ₹ 10.00 per unit

Actual results for the month revealed that 9,800 kg. of material was used and 8,800 labour hours were recorded.

- (i) Prepare a flexible budget for the month and compare with the actual results. (6 Marks)
- (ii) Calculate material volume and variable overhead efficiency variances. (2 Marks)

Answer

(i)

Particular	Master Budget		Flexible Budget	Actual	Variance	
Units	10,000		9,000	9,000		
	(₹) Total	(₹) Per Unit	(₹)	(₹)		
Sales	8,00,000	80	7,20,000	7,00,000	20,000	(A)
Direct Material	2,00,000	20	1,80,000	1,84,000	4,000	(A)
Direct Wages	3,00,000	30	2,70,000	2,62,000	8,000	(F)
Variable Overhead	1,00,000	10	90,000	94,000	4,000	(A)
Total Variable Cost	6,00,000	60	5,40,000	5,40,000	-	
Contribution	2,00,000	20	1,80,000	1,60,000	20,000	(A)
Fixed Overhead	1,00,000	10	1,00,000	98,000	2,000	(F)
Net Profit	1,00,000	10	80,000	62,000	18,000	(A)

(ii) **Calculation of Variances:**

Material Volume Variance: $SP (SQ - AQ) = 20 (9,000 - 9,800) = 16,000 (A)$

Variable Overhead efficiency variance $SR (SH - AR) = 10 (9,000 - 8,800) = 2,000 (F)$

Question 4

A Company is engaged in manufacturing two products A and B. Product A uses one unit of component X and two units of component Y. Product B uses two units of component X and one unit of component Y and two units of component Z. Component Z which is assembled in the factory uses one unit of component Y.

Components X and Y are purchased from the market. The company has prepared the following forecast of sales and inventory for the next year:

	Product A	Product B
	(Units)	(Units)
Sales	80,000	1,50,000
Stock at the end of the year	10,000	20,000
Stock at the beginning of the year	30,000	50,000

The production of both the products and the assembling of the component Z will be spread out uniformly throughout the year. The company at present orders its inventory of X and Y in

quantities equivalent to 3 months production. The company has compiled the following data related to the two components:

	X	Y
Price per unit (₹)	20	8
Order placing cost per order (₹)	1,500	1,500
Carrying cost per annum	20%	20%

Required:

- Prepare a budget for production and requirements of components for the next year.
- Suggest the optimal order quantity of components X and Y. (7 Marks)(May, 2010)

Answer

(i) Production Budget

	Product "A"	Product "B"
	Units	Units
Sales	80000	150000
Closing stock	10000	20000
Opening stock	30000	50000
Production Budget	60000	120000

Budget of Component Requirements

Components	X	Y	Z
Product A: Production 60000 units	60000	120000	
Product B: Production 120000 units	240000	120000	240000
Component Z : 240000 units		240000	
Total	300000	480000	240000

(ii) Optimal order quantity of components X and Y

Components	X	Y
Order placing costs ₹	1500	1500
Price of the component ₹	20	8
Carrying cost @ 20% ₹	4	1.60

$$EOQ = \sqrt{\frac{2 \times 300000 \times 1500}{4}} \quad \sqrt{\frac{2 \times 480000 \times 1500}{1.60}}$$

$$= 15000 \text{ components} = 30000 \text{ components}$$

Question 5

The budgeted and actual cost data of M Ltd. for 6 months from April to September, 2008 are as under:

	Budget	Actual
Production units	16,000	14,000
Material cost	₹ 25,60,000 (1,600 MT @ ₹ 1,600)	₹ 41,60,000 (at ₹ 1,650)
Labour cost	₹ 16,00,000 (at ₹ 40 per hour)	₹ 15,99,840 (@ ₹ 44 per hour)
Variable overhead	₹ 3,00,000	₹ 2,76,000
Fixed overhead	₹ 4,60,000	₹ 5,80,000

In the first half of financial year 2009-10, production is budgeted for 30,000 units, material cost per tonne will increase from last year's actual by ₹ 150, but it is proposed to maintain the consumption efficiency of 2008 as budgeted. Labour efficiency will be lower by 1% and labour rate will be ₹ 44 per hour. Variable and fixed overheads will go up by 20% over 2008 actuals.

Prepare the Production Cost budget for the period April-September, 2009 giving all the workings. (6 Marks)(Nov., 2008)

Answer

Production Cost Budget (for 6 months ending 30th September, 2009)

	30,000 units	
	Cost per unit	Total
	₹	₹
Material cost	180	54,00,000
Labour cost	115.21	34,56,420
Variable overhead	23.65	7,09,500
Fixed overhead	23.2	6,96,000
	<u>342.06</u>	<u>1,02,61,920</u>

Assumption : Here, difference in actual and standard time is also considered for calculating the lower efficiency i.e. $3.74\% + 1\% = 4.74\%$

Working Notes:

I. Material cost

$$\text{Material consumption per unit} = \frac{1,600 \text{ MT}}{16,000} = 0.10 \text{ MT}$$

Consumption for 30,000 units = 3,000 MT.

Cost of 3,000 MT @ ₹ 1,800 per MT = ₹ 54,00,000.

II. Labour cost can be calculated as follows:

Time required for 30,000 units = 75,000 hours

Add: $\ast(3.74\% + 1\%) = 4.74\%$ for lower efficiency = 3,555 hours
= 78,555 hours

$$\begin{aligned} \ast 3.74\% &= \frac{\text{Difference in actual and standard hours}}{\text{Actual hours}} \times 100 \\ &= \frac{1,360 \text{ hours}}{36,360 \text{ hours}} \end{aligned}$$

Labour cost = 78,555 hours $\times$ 44 per hour
= 34,56,420.

III. Variable overhead

$$\text{Actual rate} = \frac{\text{₹ } 2,76,000}{14,000} = 19.71 \text{ per unit}$$

Add: 20 = 3.94

New rate = 23.65

Total variable overhead = 30,000 $\times$ 23.65
= ₹ 7,09,500

IV. Fixed overhead

Actual = ₹ 5,80,000

Add: 20% = ₹ 1,16,000

= ₹ 6,96,000

According to above the production cost budget will be as follows:

Alternative

Production Cost Budget
(for 6 months ending 30th September, 2009)

	30,000 units	
	Cost per unit	Total
	₹	₹
Material cost	180	54,00,000
Labour cost	111.1	33,33,000
Variable overhead	23.65	7,09,500
Fixed overhead	<u>23.2</u>	<u>6,96,000</u>
	<u>337.95</u>	<u>1,01,38,500</u>

Working Notes:

I. Material cost

$$\text{Material consumption per unit} = \frac{1,600 \text{ MT}}{16,000} = 0.10 \text{ MT}$$

Consumption for 30,000 units = 3,000 MT.

Cost of 3,000 MT @ ₹ 1,800 per MT = ₹ 54,00,000.

II. Labour Cost:

$$2008 - \text{Total Budgeted Hour} = \frac{16,00,000}{40} = 40,000 \text{ hours}$$

$$\text{Labour hour budget for each unit} = \frac{40,000}{16,000} = 2.5$$

$$\text{Actual time paid} = \frac{15,99,840}{44} = 36,360 \text{ hours}$$

Less: Standard labour hours for 14,000 units (i.e. 14,000 × 2.5) = 35,000 hours

Difference in actual and standard hours = 1,360

Time required for 30,000 units (30,000 × 2.5) = 75,000 hours

Add: 1% for lower efficiency = 750 hours

= 75,750 hours

Labour cost = 75,750 hours ´ 44 per hour = 33,33,000

III. Variable overhead

Actual rate = $\frac{\text{Rs. 2,76,000}}{14,000 \text{ units}}$ = 19.71 per unit

Add: 20 = 3.94

New rate 23.65

Total variable overhead = 30,000 ´ 23.65 = ₹ 7,09,500

IV. Fixed overhead

Actual = ₹ 5,80,000

Add: 20% = ₹ 1,16,000

= ₹ 6,96,000