The Institute of Finance Management
Accounting and Finance Department
Tutorial Questions
Standard Costing and Basic Variances Analysis
BACC 3 and BAIT 3

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QUESTION 1

The ABC furniture Company in Iringa makes a variety of furniture products. It uses standard cost and a flexible budget to aid planning and control. Budgeted variable overhead at 22,500 direct labour levels is Shs 13,500,000.

During April 2006, the company had an unfavourable variable overhead efficiency variance of Shs 575,000, material purchases were Shs 120,950,000, and actual direct labour costs incurred were Shs 70,350,000. The direct labour usage variance was Shs 2,550,000 Unfavourable. The actual average wage rate was Shs 200 lower than the average standard wage rate.

The company uses a variable overhead rate of 20% of standard direct labour cost for flexible budgeting purposes. Actual variable overhead for the month was Shs 15,375,000

REQUIRED

Compute the following

a) Standard direct labour cost per hour
b) Actual direct labour hours worked
c) Total direct labour price variance
d) Total flexible budget for direct labour costs
e) Variable overhead spending variance in total

QUESTION 2

The Majengo Co uses standard costs and a flexible budget in accounting for the one product it sells. The company's chief Accountant a recent Accountant graduate at IFM, has been experimenting with the contribution margin approach to income determining and inventory valuation, as well as maintaining cost records and preparing financial statements in the traditional approach used by the company.

Net income for the year just ended would have been reported as Shs 896,300 under contribution margin approach, instead of Shs 970,250 actually reported in the company's income statement.

The following information is also available for the year just ended

Standard cost per unit	Shs
Direct material (6kgs @ Shs 15.00 per kg)	90
Direct labour (0.5 hr @ Shs 80.00 per hr)	40
Total factory overhead (Shs 76.00 per DL hr)	38
	168

Flexible overhead budget

Shs 2,970,500 for 70,000 units of production

Shs 3,440,500 for 90,000 units of production

- Beginning finished goods inventory was 14,650 units
- Fixed factory overhead budget variance was Shs 12,650 A
- Fixed factory overhead production volume variance was Shs 14,300F

REQUIRED

(i) Determine the number of units sold and the ending inventory of finished goods for the year just ended

(ii) Determine the value of which the ending of finished goods would be carried on in the balance sheet

a) Under the absorption costing approach

b) Under the Direct costing approach

QUESTION 3

As a recently appointed assistant management accountant you are attending a monthly performance meeting. You have with you a statement of monthly actual costs, a summary of cost variances and other pieces of information you have managed to collect, as shown below

Month 7	Shs
Actual cost of direct material purchased and used	62,700
Actual direct wages paid	97,350
Variable overheads incurred	19,500
Fixed overheads incurred	106,500
The variances from standard cost were as follows	
Direct material price variance	5,700A
Direct material usage variance	3,000F
Direct labour rate variance	1,650F
Direct labour efficiency variance	9,000F
Variable overhead variance	1,500A
Fixed overhead expenditure variance	1,500A
Fixed overhead volume variance	15,000A

The actual wage rate paid for the period was Shs 8.85 per hour. It takes three standard hours to produce one unit of the finished product.

The single direct material used in the period cost Shs 0.30 per kg above the standard price. Five kg of raw material input is allowed for as standard for one unit of output.

All figures relate to the single product which is manufactured at the plant. There were no stocks of at the beginning or end of the accounting period. Variable and fixed overhead absorption rates are based on standard hours produced.

Managers from various functions have brought to the meeting measures which they have collected for their own areas of responsibility. In order to demonstrate the link between the accounting values and their measures you decide to work from the variances to confirm some of them

REQUIRED

(a) The formula for the calculation of the labour cost variance is: (SH x SR) – (AH – AR) provide formulae for the calculation of the labour rate variance and Direct labour efficiency variance using similar notation to that above. Demonstrate how they will sum to the labour cost variance given above
(b) Using variance formulae such as those above or otherwise determine the following
   (i) The actual number of direct labour hours worked
   (ii) The standard rate of pay per direct labour hour
   (iii) The standard of hours of production
   (iv) The actual production in units
   (v) The actual quantity of direct material consumed
   (vi) The actual price paid for the direct material (per kg)
   (vii) The standard direct material usage in kg for the actual number of units produced
(c) From (b) above and any other calculation which may be appropriate, compute the standard cost per unit of finished product. Show separately standard quantities for each element of cost

QUESTION 4
ABC Ltd makes two products. Information regarding one of those products is given below:

Budgeted output/ sales for the year: 900 units

Standard details for one unit	
Direct materials:	40 square metres at Shs 5.30 per square metre
Direct wages	bonding department: 24 hours at Shs 5.00 per hour
	Finishing department: 15 hours at Shs 4.80 per hour
Variable overhead	Shs 1.50 per bonding labour hour
	Shs1 per finishing labour hour
Fixed production overhead	Shs 36,000
Fixed nonproduction overhead	Shs 27,000

Note: Variable overheads are recovered (absorbed) using hours; fixed overheads are recovered on a unit basis.
REQUIRED:
(a) Prepare a standard cost card for one unit and enter on the standard cost card the following subtotals:
   (i) Prime cost
   (ii) Variable production cost
   (iii) Total production cost
   (iv) Total cost.
(b) Calculate the selling price per unit allowing for a profit of 25% of the selling price.

QUESTION 5
May Ltd produce a single product for which the following data are given:
Standards per unit of product:

Direct material	4 kg at Shs 3 per kg	
Direct labour	2 hours at Shs 6.40 per hour	

Actual details for given financial period:

Output produced in units		38,000
Direct materials: `		Shs
Purchased	180,000 kg for	504,000
Issued to production	154,000 kg	
Direct labour	78,000 hours worked for	546,000

There was no work in progress at the beginning or end of the period.

Calculate the following variances:
(i) Direct labour total;
(ii) Direct labour rate;
(iii)Direct labour efficiency;
(iv)Direct materials total;
(v) Direct materials price, based on issues to production;
(vi)Direct materials usage.

REQUIRED
(b) Discuss whether in each of the following cases, the comment given as the possible reason for the variance, is consistent with the variance you have calculated in (a) above.
(i) Direct labour rate variance: the union negotiated wage increase was Shs 0.60 per hour lower than expected;
(ii) Direct labour efficiency variance: the efficiency of labour was commendable.
(iii)Direct materials price variance: the procurement manager has ignored the economic order quantity and, by obtaining bulk quantities, has purchased material at less than the standard price;
(iv)Direct materials usage variance: material losses in production were less than had been allowed for in the standard;

QUESTION 6
Key Co makes a single product – a lock – and uses marginal costing. The standard cost card for one unit is as follows:

Standard cost card	Shs
Selling price	80
Direct materials (4 kg at Shs3 per kg)	12
Direct labour (2 hours at Shs10 per hour)	20
Variable overhead (2 hours at Shs2 per hour)	4
Marginal cost	36

A junior member of the accounts team produced the following variance statement for the month of May.

	Budget (1,000 units)	Actual (960 units)	Variances
	Shs	Shs	Shs
Sales	80,000	76,800	3,200 A
Less: Marginal cost			
Direct materials	(12,000)	(11,126)	874 F
Direct labour	(20,000)	(18,240)	1,760 F
Variable overheads	(4,000)	(3,283)	717 F
Contribution	44,000	44,151	151

Key Co used 3,648 kg of materials in the period and the labour force worked and was paid for 1,824 hours.
Until now, Lock Co has had a market share of 25%. In the month of May, however, the market faced an unexpected 10% decline in the demand for locks.

REQUIRED:

a) Prepare a statement which reconciles budgeted contribution to actual contribution in as much detail as possible. Do not calculate the sales price and the labour rate variances, since both of these have a value of nil. Clearly show all other workings.
b) The production director at Lock Co believes that the way to persistently increase market share in the long term is to focus on quality, and is hoping to introduce a 'Total Quality Management' (TQM) approach. The finance director also shares this view and has said that 'standard costing will no longer have a place within the organisation if TQM is introduced.'
c) Discuss the view that there is no longer a place for standard costing if TQM is introduced at Key Co.

QUESTION 7

The Ulugulu Company uses a flexible budget standard cost to aid planning and control. At 60,000 direct labour levels budgeted variable overhead is Shs 15,000,000 and budgeted direct labour is Shs 24,000,000
The following are some results for the month of April 20X6

	Shs
• Variable overhead budget variance	5,250,000 A
• Variable overhead efficiency variance	4,450,000 A
• Material purchased price variance	8,000,000 F
• Actual direct labour cost incurred	287,000,000
• Material efficiency variance	4,500,000 A
• Fixed overhead incurred	25,000,000
• Fixed overhead budget variance	100,000 A

The standard cost per kilogram of direct materials is Shs 750. The standard allowance is one kilogram of direct materials for each unit of finished product. Ninety thousands units of product were made during April. There was no beginning or ending work in progress. The purchase price variance for April was Shs 50 per kilogram. The actual average wage rate in April exceeded the standard average by Shs 100 per hour

REQUIRED

Calculate (a)

(i) Total kilograms of direct material purchased for April
(ii) Total number of excess material usage
(iii) Variable overhead spending variance
(iv) Total number of actual hours of input
(v) Total number of standard hours allowed for the finished units produced

(b) What are the considerations, which have to be borne in mind by the accountant in interpreting variances and instigating investigations?

QUESTION .8

Wananchi Ltd manufactures a special machine part as a sub contractor. The management of the company is cost conscious and has introduced a standard costing system in order to closely monitor costs. For 20X6 the plans for production and costs were as follows

Units to be produced and sold	2,500
Standard cost per unit	Shs
Direct materials	1,000
Direct labour	800
Variable overhead	400
Fixed overhead	300
Total unit cost	2,500

During the year 3,000 units were produced and sold.
The following actual costs were incurred

	Shs
Direct materials	3,200,000
Direct labour	2,200,000
Variable overhead	1,250,000
Fixed overhead	890,000

There was no beginning or ending inventories of raw materials
Up on investigation, it was discovered that in producing the 3,000 units, 39,000 direct labour hours were spent. This was 4% more hours than the standard allowed for the actual output.
There was a direct material price variance of Shs 50,000 unfavourable. The overhead costs are applied to production using direct labour hours

REQUIRED

a) Prepare a production cost performance Report showing the variances based on a flexible budget for the actual units produced.
b) Show the calculations for the following
- Direct material usage variance
- Direct labour rate variance
- Direct labour efficiency or usage variance
- Variable overhead spending variance
- Variable overhead efficiency variance
- Fixed overhead volume variance

QUESTION 9

The standard direct material cost of product X is Shs 96 (16kgs x Shs 6 per kg) and the standard direct labour cost is Shs 72 (6hrs x Shs 12 per hr). The following variances were among those reported in control period 10 in relation to product X.

- Direct material price Shs 18,840 F
- Direct material usage Shs 480 A
- Direct labour rate Shs 10,598 A
- Direct labour efficiency Shs 8,478 F

Actual direct wages cost Shs 171,320 and Shs 5.50 was paid for each kilogram of direct material. There was no opening or closing stocks of material

REQUIRED

Calculate the following

Actual output

a) Actual hours worked
b) Average actual wage rate per hour
c) Actual number of kilograms purchased and used

QUESTION 10

ABC Company has just completed its operations for the month of October 20X6. The total standard cost for all activities during October 20X6 is given below:

Costs Item	Total standard cost Shs
Direct Materials	5,000,000
Direct Labour	9,000,000
Variable factory Overhead	6,000,000
	20,000,000

Variances from standard were analysed and recorded as given

	Favourable	**Unfavourable**

	Shs	Shs
Material price variance	200,000	
Labour Efficiency Variance		300,000
Labour Rate variance		300,000
Material Usage variance	100,000	
Overhead price variance	300,000	
Overhead Efficiency Variance		200,000

REQUIRED
Compute the actual cost incurred during the month of October, for

(i) Direct Material
(ii) Direct labour
(iii)Variable factory overhead

(b) Standard costing is an important control technique for management decision-making purposes. Briefly discuss five objectives of standard costing in an organization.

QUESTION 11
Kanga Ltd manufactures one product, and the entire product is sold as soon as it is produced. There is no opening or closing stocks and work in progress is negligible. The company operates a standard costing system and analysis of variances is made every month. The standard cost card for the product is as follows

Standard cost card

		Shs
Direct materials	0.5 kilos at Shs 4 per kilo	2.00
Direct wages	2 hours at Shs 2.00 per hour	4.00
Variable overheads	2 hours at Shs 0.30 per hour	0.60
Fixed overhead	2 hours at Shs 3.70 per hour	7.40
Standard cost		14.00
Standard profit		6.00
Standard selling price		**20.00**

Budgeted output for June was 5,100 units. Actual results for June were as follows.

- Production of 4,850 units was sold for Shs 95,600
- Materials consumed in production amounted to 2,300 kilos at total cost of Shs 9,800
- Labour hours paid for amounted to 8,500 hours at a cost of Shs 16,800
- Actual operating hours amounted to 8,000 hours
- Variable overheads amounted to Shs 2,600
- Fixed overheads amounted to Shs 42,300

REQUIRED
Calculate all variances and prepare an operating statement for June

QUESTION 12
The following profit reconciliation statement has been prepared by the

Management accountant of ABC Ltd for March 20X5

			Shs
Budgeted profit			30,000
Sales volume profit variance			5,250 (A)
Selling price variance			6,375 (F)
			31,125
Cost variances	(A) Shs	(F) Shs	
Material: price	1,985		
Usage		400	
Labour: rate		9,800	
Efficiency	4,000		
Variable overhead: expenditure		1,000	
Efficiency	1,500		
Fixed overhead: expenditure		500	
Volume	24,500		
	31,985	11,700	
			20,285 (A)
Actual profit			10,840

The standard cost card for the company's only product is as follows.

		Shs
Materials	5 litres @ Shs 0.20	1.00
Labour	4 hours @ Shs 4.00	16.00
Variable overhead	4 hours @ Shs 1.50	6.00
Fixed overhead	4 hours @ Shs 3.50	14.00
		37.00
Standard profit		3.00
Standard selling price		40.00

The following information is also available

- There was no change in the level of finished goods stock during the month.
- Budgeted production and sales volumes for March 20X5 were equal.
- Stocks of materials, which are valued at standard price, decreased by 800 litres during the month.
- The actual labour rate was Shs 0.28 lower than the standard hourly rate.

REQUIRED

Calculate the following

a) The actual production/sales volume
b) The actual number of hours worked
c) The actual quantity of materials purchased
d) The actual variable overhead cost incurred
e) The actual fixed overhead cost incurred

QUESTION 13

BS limited manufactures one standard product and operates a system of variance accounting using a fixed budget. As assistant management accountant, you are responsible for preparing the monthly operating statement. Data from the budget the standard product cost and actual data for the month ended 31 October are given below.

Budgeted sales and production for the month: 10,000 units

Standard cost for each unit of product:

Direct material:	X:	10kg at Shs 1 per kg
	Y	5 kg at Shs 5 per kg
Direct wages		5 hours at Shs 3 per hour

Fixed production overhead is absorbed at 200% of direct wages

Budgeted sales price has been calculated to give a profit of 20% of sales price

Actual data for month ended 31 October:

Production: 9,500 units sold a price of 10% higher than that budgeted

Direct materials consumed:

X: 96,000 kg at Shs 1.20 per kg

Y: 48,000 kg at Shs 4.70 per kg

Direct wages incurred 46,000 hours at Shs3.20 per hour

Fixed production overhead incurred Shs 290,000

REQUIRED

Using the data given, you are required to prepare the operating statement for the month ended 31 October to show the budgeted profit: the variances for direct materials direct wages, overhead and sales, each analysed into causes and actual profit.

QUESTION 14

BM Ltd manufactures a single product, a laminated kitchen unit with a standard cost of Shs 80 made up as follows:

	Shs
Direct materials (15 sq. metres at Shs 3 per sq metre)	45
Direct labour (5 hours at Shs 4 per hour)	20
Variable overheads (5 hours at Shs 2 per hour)	10
Fixed overheads (5 hours at Shs 1 per hour)	5
	80

The standard selling price of the kitchen unit is Shs 100. The monthly budget projects production and sales of 1,000 units. Actual figures for the month of April are as follows

Sales 1,200 units at Shs 102

Production 1,400 units

Direct materials 22,000 sq metres at Shs 4 per sq metre

Direct wages 6,800 hours at Shs 5

Variable overheads Shs 11,000

Fixed overheads Shs 6,000

You are required to prepare

A trading account reconciling actual and budgeted profit and showing all appropriate variances:

QUESTION 15

(a) Explain four different levels of performance which may be incorporated into a system of standard costing and comment on how these may relate to the purposes of standard costing

(b) A manufacturing company BM has provided you with the following data which relates to product XA for the period which has just ended

	Budget	Actual
Number of labour hours	8,400	7,980
Production units	1,200	1,100
Overhead cost (all fixed)	Shs 22,260	Shs 25,536

Overheads are absorbed at a rate per standard labour hour

REQUIRED

(i) Calculate the fixed production overhead cost variance and the following subsidiary variances
- Expenditure
- Efficiency
- Capacity

(ii) Provide a summary statement of these four variances

(iii) Briefly discuss the possible reasons why adverse fixed production overhead expenditure, efficiency and capacity variances occur

(iv) Briefly discuss two examples of inter-relationship between the fixed production overhead efficiency variances and the material and labour