

STANDARD COSTING

1. The standard cost per unit for the product M is worked out on this basis :

Direct materials 1.3 tons @ `400 per ton.

Direct Labour 2.9 hours @ `23 per hour.

Factory overhead 2.9 hours @ `20 per hour.

Normal capacity is 2,00,000 direct Labour hours per month.

The factory overhead rate is arrived at on the basis of a fixed overhead of `10,00,000 p.m. and a variable overhead of `15 per direct labour hour.

In the month of May, 50,000 units of the product was started and completed. An investigation of the raw material inventory account reveals that 78,000 tons of raw material were transferred in to and used by the factory during May. These goods cost `420 per ton. 1,50,000 hours of Direct labour were spent during May at a cost of `25 per hour Factory overhead for the month amounted to `34,00,000 of which `10,50,000 was fixed.

Compute and identify all variances under Material, Labour and overhead as favorable or adverse.

2. From the data given below, calculate the variances:

	<u>X</u>		<u>Y</u>	
	Qty. kg	Value `	Qty. kg	Value `
Raw Material Purchased	2,000	4,000	5,000	6,250
Issues to works stock	2,150	-	3,950	-
Works stocks of material :				
Opening	300	-	1,000	-
Closing	200	-	1,250	-
Standard price :		Material X : ` 1.90 per kg.		Material Y : ` 1.30 per kg.
Standard usage :		Material X		Material y
Product A		1 kg.		1 kg
Product B		0.5 kg		1.kg.

Output during the period :

Product A : 1,130 units &

Product B : 2,550 units

3. XYZ Ltd. has furnished you the following for the month of August :

	Budget	Actual
Output (units)	30,000	32,500
Hours	30,000	33,000
Fixed overhead	45,000	--
Variable overhead	60,000	--
Working days	25	26
Total Factory Overhead		1,12,500

Calculate the variances.

4. A manufacturing company has furnished the following financial data relating to the actual output of 9,600 units produced in the last quarter:

Sales		4,45,500
Costs:		
Direct Materials	59,400	
Direct Wages	89,400	
Variable Overheads	1,45,500	
Fixed Overheads	<u>78,000</u>	<u>3,72,300</u>
Profit		<u>73,200</u>

The standard wage rate is ` 4.50 per hour and the standard variable overhead rate is ` 7.50 per hour. The company uses a JIT system and the budgeted production and sales quantity is 10,000 units.

The following are the variances from standard costs recorded during the last quarter:

Direct materials	Price V	600 A
	Usage V	1,200 A
Direct Wages	Rate V	1,500 F
	Efficiency V	4,500 A
Variable Overheads	Expense V	6,000 F
	Efficiency V	7,500 A
Fixed Overheads	Expense V	3,000 A
Sales	Price V	13,500 F

You are required to:

- (i) Prepare the Original budget and Standard cost sheet per unit of output;
(ii) Produce a statement reconciling the budgeted profit with actual profit. (Nov,08 old)

5. Saleswell Ltd. sells a range of products. Each territory is allotted to a salesman and the salesmen are given the discretion of increasing or reducing the catalogue prices within a certain range in their respective territories, if the circumstances so warrant. This they do, by levying a surcharge or by offering discounts. For each quarter, sales quotas are fixed for each salesman and a 5% commission is given on actual orders booked in addition to a fixed monthly salary. The quantum of commission earned serves as an indication of the efforts made by salesmen. The new Cost Accountant who has joined the company recently has devised a management information system for quarterly appraisal and the following are the figures called out from his records.

FOR THE QUARTER JANUARY-MARCH 2001

Salesmen	A (')	B (')	C (')	D (')
Commission earned	2,300	1,650	2,985	2,110
Standard Cost of Quota Sales	29,400	26,000	28,400	24,000
Sales Price Variance	600(U)	6,000(U)	2,300(U)	2,700(F)
Sales Volume Variance	800(U)	1,000(U)	14,000(F)	500(U)
Margin Volume Variance	900(U)	1,400(U)	4,270(U)	1,800(F)

You are required to :

- (a) Compute the Sales Quota given to each salesman and their actual contribution made.
(b) Rank the Salesmen according to performance, explaining the basis.
(c) Comment on the use of commission as an incentive.

6. The sales performance of SATYA Ltd. a dealer in toy-products for 2002-03 was as follows :

Product	TV sets	Washing m/cs	Computers	Total
---------	---------	--------------	-----------	-------

Units	40,000	1,00,000	1,80,000	3,20,000
Revenue	3,20,000	4,80,000	5,00,000	13,00,000
Standard cost	2,00,000	3,00,000	3,60,000	8,60,000
Profit	1,20,000	1,80,000	1,40,000	4,40,000

The company is in the process of producing the budget for 2003-04 and, whilst the above actual figures are useful, it would like to know what was in the 2002-03 budget. Unfortunately this information seems to be lost and only one or two crumb of information have come to light, i.e. :

- (i) sales margin quantity variance is `33,333.33 (F);
- (ii) Average standard margin per unit `1.6667;
- (iii) Budgeted sales (in unit) of washing machines were achieved;
- (iv) TV sets were sold at the standard selling price;
- (v) The standard selling price of TV sets per-unit is as much as a unit of each of the other two product lines put together;
- (vi) Sales price variance is `60,000 (A).

Produce the sales budget for 2002-03 showing (a) number of units, (b) unit price, (c) total cost, and (d) total profit for each item and in total. Show supporting calculations to arrive at a, b, ac and d.

7. The standard cost sheet of a company based on the normal output of 30,000 units for a quarter is as under :

Direct Materials	4 kg. @ ` 2 per kg.	` 8.00
Direct Wages	6 Hours @ ` 4 per hour	` 24.00
Overheads	50% of Direct Wages	<u>12.00</u>
Total Costs		44.00
Profit		<u>6.00</u>
Selling Price		<u>50.00</u>

The budgeted fixed overheads amount to ` 1,44,000 per quarter and it is included in the overhead cost given above. On the basis of the budgeted activity of 36,000 units, the company estimated the profit for the second quarter of the year as under :

Direct Materials	` 2,88,000
Direct Wages	` 8,64,000
Overheads	<u>4,32,000</u>
Total Costs	15,84,000
Sales	<u>18,00,000</u>
Profit	2,16,000

The cost records revealed the following actual data for the second quarter of the year Production 25,000 units

Direct materials purchased 1,06,000 kg. at ` 2.25 per kg.
 Direct material consumed 96,000 kg
 Direct wages paid 1,60,000 hours at ` 4.10 per hour. Out of which 6,000 hrs were idle time .
 Overheads ` 3,32,000 out of which ` 1,50,000 were fixed.
 Sales 23,000 units at an average price of ` 51.50 per unit.

You are required to prepare an operating statement reconciling from budgeted profit

8. The trading results of ZED Ltd. for 2001-02 and 2002-03 are as follows :

	2001-02	2002-03
Material	1,60,000	2,05,200
Wages	96,000	1,32,000
Variable Overheads	40,000	46,000
Fixed Overheads	<u>50,000</u>	<u>54,800</u>
Total costs	3,46,000	4,38,000
Profit	54,000	90,000
Sales	<u>4,00,000</u>	<u>5,28,000</u>

Selling price was enhanced by 10% in 2002-03 . material prices and wages rates too have increased by 8% and 12% respectively. Prepare Reconciliation Statement.

9. File and Smile Associates undertake to prepare income tax returns for individuals for a fee. Their advice to their clients is to pay the proper tax and relax. In order to arrive at the proper scale of fees and assess their own performance, they have a good system. They use the weighted average method and actual costs for financial reporting purposes. However, for internal reporting, they use a standard cost system. The standards, based on equivalent performance, have been established as follows :

Labour per return	5 hrs @ ` 40 per hr.
Overhead per return	5 hrs @ ` 20 per hr.

For March 2003 performance, budgeted overhead is ` 98,000 for the standard labour hours allowed. The following additional information pertains to the month of March 2003 :

March 1	Returns in Process (25% Complete)	200 Nos.
	Returns started in March	825 Nos.
March 31	Returns in Process (80% Complete)	125 Nos.

Cost data

March 1	Returns in Process :Elements of Cost	
	Labour	` 12,000
	Overheads	` 5,000
March 1 to 31	Labour 4,000 hrs.	` 1,78,000
	Overheads	` 90,000

You are required to compute

- for each cost element, equivalent units of performance and the actual cost per equivalent unit
 - actual cost of returns in process on March 31
 - the standard cost per return
 - The total labour, labour rate and labour efficiency variances as well as total overhead volume and overhead budget variance.
10. A company manufacturing two products uses standard costing system. The following data relating to October, 2003 have been furnished to you :

PRODUCTS	A	B
Standard Cost per Unit :		

Direct Materials	2	4
Direct Wages	8	6
Fixed Overheads	<u>6</u>	<u>12</u>
	<u>26</u>	<u>22</u>
Unit processed In process :		
Beginning of the month : All materials applied and 50% complete in respect of labour and overheads	4,000	12,000
End of the month : All materials applied and 80% complete in respect of labour and overheads	8,000	12,000
Units completed and transferred to warehouse : during the month	<u>16,000</u>	<u>20,000</u>

During the month , direct materials purchased at standard price amount to `2,00,000 and the actual cost of which is `2,20,000. Direct materials used for consumption at standard price amount to `1,75,000. Direct wages for actual hours worked at standard wage rates were `4,20,000 and at actual wage rates were `4,12,000. Fixed overheads budgeted were `8,25,000 and the actual fixed overheads incurred were `8,50,000.

Calculate all the variances & standard cost of work-in-process at the end of the month.03/11/96

11. ABC Ltd. adopts a standard costing system. The standard output for a period is 20,000 units and the standard cost and profit per unit is as under:—

Direct Material	3 units @ ` 1.50	4.50
Direct Labour	3 Hrs. @ ` 1.00	3.00
Direct Expenses		0.50
Factory overheads:	Variable	0.25
	Fixed	0.30
Administration overheads		0.30
Total Cost		8.85
Profit		1.15
Selling price (Fixed by Govt.)		10.00

The actual production and sales for a period was 14,400 units. There has been no price revisions by the Govt. during the period. The following are variances worked out at the end of the period:—

Cost variances during this period were :

	Favourable	Adverse
Material Price	--	4250
Material Usage	1500	--
Wage Rate	--	4000
Labour Efficiency	3200	--
Factory Overhead		
Variable - Expenditure	400	--
Fixed-- Expenditure	400	--
Fixed - Volume	--	1600
Administrative Overhead		
Expenditure	--	400
Volume	--	1680

You are required to –

- a) Ascertain the details of actual costs and prepare P&L.
b) Reconcile actual profit with standard profit.

- 12.** On 1st April, 2008, ZED Company began the manufacture of a new electronic gadget. The company installed a standard costing system to account for manufacturing costs.

The standard costs for a unit of the product are as under :

Direct Material	(3 kgs. at ` 5 per kg.)	15.00
Direct Labour	(0.5 hour at ` 20 per hour)	10.00
Manufacturing overhead	(75% of direct labour cost)	7.50
Total Cost		<u>32.50</u>

The following data was obtained from ZED Company's records for April, 2008 :

	Debit	Credit
Sales	--	1,25,000
Sundry Creditors (For purchase of D. materials in April 07)	68,250	--
Direct Material Price Variance	3,250	--
Direct Materials Usage Variance	2,500	--
Direct Labour Rate Variance	1,900	--
Direct Labour Efficiency Variance	--	2,000

The Actual Production in April 2008 was 4,000 units of the gadget, and the actual sales for the month was 2,500 units. The amount shown above for direct materials price variance applies to materials purchased during April, 2008.

Required :

- (i) Standard direct labour hours allowed for the actual output achieved.
(ii) Actual direct labour hours worked.
(iii) Actual direct labour rate.
(iv) Standard quantity of direct materials allowed (in kgs.)
(v) Actual quantity of direct materials used (in kgs.)
(vi) Actual quantity of direct materials purchased (in kgs.)
(vii) Actual direct materials price per kg.

- 13.** Goodwill Ltd. manufactures readymade shirts of a specific quantity in lots to each special order from its overseas customers.

The standard costs for one dozen of shirts are:

Direct material	(24 meters @ ` 11)	264
Direct labour	(3 hours @ ` 49)	147
Overheads	(3 hours @ ` 40)	120
Standard cost per dozen		531

During July, 2008 it worked on three order, for which the month's job cost records show :

Lot No.	Units	Materials used	Hours worked
45 (UK)	1,700 Doz.	40,440 Metres	5,130
46 (US)	1,200 Doz.	28,825 Metres	2,890
47 (CAN)	1,000 Doz.	24,100 Metres	2,980

Additional information :

- (a) The company bought 95,000 meters of materials during July at a cost of ` 10,64,000. The material price variance is recorded when materials are purchased. All inventories are carried at cost.
- (b) Direct labour during July amt. to ` 5,50,000. The employees were paid at ` 50 p. h.
- (c) Overheads during the month amounted to ` 4,56,000.

A total of ` 57,60,000 was budgeted for overheads for the year 2008-09, based on estimated production of the plant's normal capacity of 48,000 dozen shirts annually. Overheads at the level of production is 40% fixed & 60% variable. Overheads is applied on the basis of direct labour hrs.

There was no work in progress at the beginning of July. During July, lot nos. 45 and 47 were completed. All materials were issued for lot no. 46 which was 80% complete as regards conversion.

Required:

- a. Computation of standard cost of production of the shirts per dozen as well as in total for lot Nos. 45, 46 and 47.
- b. Find the variation in quantity of material used & labour hrs worked for each lot & in total.
- c. Calculate the material price variance; labour rate variance; variable overheads efficiency variance and fixed overheads volume variance.

- 14.** A practicing Doctor who had some vacant space in his chamber established a new specialist unit providing two types of health check – Primary and Advanced.

For primary check-up the service of only a trained nurse is required and it takes 30 minutes. In case a person wants an Advanced health check-up to be done after the Primary check-up, he is referred to the Doctor and an additional 60 minutes are required for medical assessment by the Doctor. The Nurse and the Doctor work independently of each other. The standard labour rates are as under:

Trained Nurse	` 200 per hour
Doctor	` 500 per hour

In the first month, it was estimated that there would be 200 nos. of Primary Health check-up cases and 50 cases of Advanced Health check-up. The fixed overhead for the specialist unit for the month was budgeted at ` 30,000. These overheads were to be absorbed on the basis of per hour spent on check-up.

The actual results for the particular month were:

- a) Check-ups carried out:

Primary health check-up	220 nos.
Advanced health check-up	60 nos.
- b) Time spent on check-up:

Trained Nurse	125 hours
Doctor	70 hours
- c) Amount spent on:

Trained Nurse	` 30,000
Doctor	` 42,000

You are required to

- (i) Calculate standard cost of Primary Health Check-up and Advanced Health Check-up.
- (ii) Prepare an operating cost statement for the month for the specialist unit showing standard cost and actual cost with variances.