COST ACCOUNTING

&

FINANCIAL MANAGEMENT

CA - PCC

STANDARD COSTING
PRACTICAL PROBLEMS

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4 STANDARD COSTING

Question 1
Sterlite Industries's budgeted prices for direct materials, direct manufacturing labour, per unit are Rs. 12, and Rs. 5 respectively. The production manager is pleased with the following performance report:

	Actual Costs	Static Budget	Variance
Direct materials	Rs. 90000	Rs. 96000	Rs. 6000 F
Direct manufacturing labour	37600	40000	2400 F

Required
Is the manager's happiness justified? (Assuming that actual output was 6800 units and the two direct costs items are variable costs).

Question 2
Consider the following data:

	Direct Materials	Direct Manufacturing Labour
Cost incurred: Actual inputs X Actual prices	Rs. 153000	Rs. 79000
Actual inputs X Standard prices	165000	74000
Standard inputs allowed for actual outputs X Standard prices	172500	71300

Required
Compute the price, efficiency, and flexible budget variances for direct materials and direct manufacturing labour.

Question 3
Consider the following selected data regarding the manufacture of a line of upholstered chairs:

	Standards per Chair
Direct materials	2 square yards of input at Rs. 10 per square yard
Direct manufacturing labour	0.5 hours of input at Rs. 20 per hour

The following data were compiled regarding actual performance: actual output units (chairs) produced, 20000; square yards of input purchased and used, 37000; price per square yard, Rs. 10.20; direct manufacturing labour costs, Rs. 176400; actual hours of input, 9000; labour price per hour, Rs. 19.60.

Required

1. Show your computations on the price and efficiency variances for direct materials and for direct manufacturing labour. Give a plausible explanation of why the variances occurred.
2. Suppose 60000 square yards of materials were purchased (at Rs. 10.20 per square yard) even though only 37000 square yards were used. Suppose further that variances are identified with their most likely control; point; accordingly direct materials price variances are isolated and traced to the purchasing department rather than to the production department. Compute the price and efficiency variances under this approach.

Question 4

Efficient Ltd. Produced 80000 units 8000 units more than budgeted. Relevant data are as follows. Except for physical units, all quantities are in Rs.:

	Actual Results	Flexible Budget Variances	Flexible Budget	Sales Volume Variance	Static Budget
Physical units	80000	-	?	?	72000
Sales	?	6400F	?	?	720000
Variable Costs	492000	?	480000	?	?
Contribution	?	?	?	?	?
Fixed Costs	?	8000U	?	?	195000
Operating Income	?	?	?	?	?

Required: Fill in the unknowns.

Question 5

'Funcity' amusement park prepared the following budget for its amusement park for 2008:

Revenues from fees	Rs. 50,00,000
Variable Costs	5,00,000
Contribution	45,00,000
Fixed Costs	45,00,000
Operating Income	NIL

The fees were based on an average of 25000 visitor days (visitors multiplied by number of days in the park) per week for the 20-week season, multiplied by average entry and other fees of Rs. 10 per visitor day. The season was booming for the first four weeks. Due to opening of another amusement park named 'Hardy's World', the number of visitors to the park dropped sharply during the remainder of the season.

Total revenue fell Rs. 1000000 short of the original budget. Variable costs fell as expected and fixed costs were unaffected except for hiring extra repairmen at a cost of Rs. 360000.
Prepare a columnar summary of performance, showing the original (static) budget, sales volume variances, flexible budget, flexible budget variances, and actual results.

Question 6

Virgin is a cellular phone service provider. Virgin contracts major cellular operators for airtime in bulk and then resells service to retail customers in the Punjab circle. Virgin budgeted to sell 7800000 minutes in the month ended March 31, 2008. Actual minutes sold totaled only 7500000. Due to fluctuations in hourly usage, Virgin overbuys airtime from cellular operators. Virgin plans to buy 10% more airtime than it plans to sell.
Virgin's budgets purchased airtime to cost Rs. 4.5 per minute. Actual purchased airtime in 2008 averaged Rs. 5 per minute. Virgin incurs direct labour costs due to the employment of technicians. One hour of technical support is required for every 5000 minutes of airtime sold. In practice, 1600 hours of technical support were used. Technical support was planned at Rs. 60 per hour. Actual technical support costs averaged Rs. 62 per hour.
Required:

1. Calculate the flexible budget variance for direct materials and direct labour costs. (Purchased Airtime is equivalent to Direct Materials; Use 8250000 (7500000 X 1.10) minutes in the flexible budget).
2. Calculate the price and efficiency variances for direct materials and labour costs.

Question 7

Woodland company makes a variety of leather goods. It uses standard costs and a flexible budget to aid planning and control. Budgeted variable overhead at a 45000 direct labour hour level is Rs. 27000.
During April 2007 the company had an unfavourable variable overhead efficiency variance of Rs. 1150. Materials purchases were Rs. 241900. Actual direct labour costs incurred were Rs. 140700. The direct labour efficiency variance was Rs. 5100 unfavorable. The actual average rate was Rs. 0.20 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 Rs. 30750.
Required:
Compute the following amounts:

1. Standard direct labour cost per hour
2. Actual direct labour hours worked
3. Total direct labour price variance
4. Total flexible budget for direct labour costs
5. Total direct labour variances
6. Variable overhead expenditure variances in total

Question 8

Blue Dart Couriers (BDC) operates a parcel delivery service. BDC's costing system has one direct cost category (delivery driver payments) and two overhead categories-variable delivery overhead and fixed delivery overhead. In 2001 it charged retail companies and mail order catalog companies Rs. 15 per delivery. Delivery drivers in 2001 were contracted at Rs. 5 per delivery. Variable delivery overhead for June 2001 was budgeted at Rs. 2 per hour of delivery time. Budgeted fixed delivery overhead in June 2001 was Rs. 120000. BDC budgeted 100000 deliveries for June 2001. Delivery time, the allocation base for variable and fixed overhead costs, is budgeted to be 0.25 hours per delivery.

Actual results for June 2001 were

Variable delivery overhead	Rs. 60000
Fixed delivery overhead	Rs. 128400
Number of deliveries	96000
Hours of delivery time	28800

Required

1. Compute the spending and efficiency variances for BDC's variable delivery overhead costs in June 2001. Compute the spending and production-volume variances for BDC's fixed delivery overhead costs in June 2001. Comment on the results.
2. What problems might BDC face in managing (a) its direct costs, (b) its variable delivery overhead costs, and (c) its fixed delivery overhead costs?

Question 9

Use the given manufacturing overhead data to fill in the blanks:

	Variable	Fixed
Actual costs incurred	Rs. 11900	Rs. 6000
Allocated to products	9000	4500
Flexible budget: Budgeted input allowed for actual output achieved X Budgeted rate	9000	5000
Actual input X Budgeted rate	10000	5000

Use F for favourable and U for unfavourable:

	Variable	Fixed
1. Spending variance		
2. Efficiency variance		
3. Production volume variance		
4. Flexible budget variance		
5. Underallocated (overallocated) manufacturing overhead		

Question 10

Siemens Telecommunication (India) Ltd. uses a standard cost system for its machine paced production of telephone equipment. Data regarding production during June are

Variable manufacturing overhead costs incurred	Rs. 155100
Variable manufacturing overhead costs allocated (per standard machine hour allowed for actual output achieved)	Rs. 12
Fixed manufacturing overhead costs incurred	Rs. 401000
Fixed manufacturing overhead budgeted	Rs. 390000
Denominator level in machine hours	13000
Standard machine hours allowed per unit of output	0.30
Units of output	41000
Actual machine hours used	13300
Ending work in process inventory	0

Required

1. Prepare an analysis of all manufacturing overhead variances. Use the 4 variance analysis.
2. Prepare journal entries for manufacturing overhead without explanations.
3. Describe how individual variable manufacturing overhead items are controlled from day to day. Also, describe how individual fixed manufacturing overhead items are controlled.

Question 11

The Chip Magazine budgets to produce 300000 copies of its monthly magazine for June 2001. It is budgeted to run 15000000 print pages in June with 50 print pages per magazine. Actual production in June 2001 was 320000 copies with 17280000 print pages run. Each magazine was only 50 print pages, but quality problems with paper led to many pages being unusable.

Variable costs comprise direct materials, direct labour, and variable indirect costs. Variable and fixed indirect costs are allocated to each copy on the basis of print pages. The driver for all variable costs is the number of print pages.

Data pertaining to June 2001 are

	Budgeted	Actual
Direct materials	Rs. 180000	Rs. 224640
Direct labour costs	45000	50112
Variable indirect costs	60000	63936
Fixed indirect costs	90000	97000

Data pertaining to revenues for the Chip Magazine in June 2001 are

	Budgeted	Actual
Circulation revenue	Rs. 140000	Rs. 154000
Advertising revenue	360000	394600

The Chip magazine sells for Rs. 0.50 per copy in 2001. No change from this budgeted price of Rs. 0.50 per copy occurred in June 2001. The actual direct labour rate in June 2001 was Rs. 29.00 per hour. Actual and budgeted pages produced per direct labour hour in June 2001 was 10000 print pages. Copies produced but not sold have no value. Advertising revenue covers payments from all advertising sources.
Required

1. Present a static budget variance (Level 1) report for the Chip magazine.
2. Comment on the results in requirement 1.

Question 12 (in continuation of Question 11)
Required

1. Prepare a comprehensive set of variances for each of the four categories of cost of the Chip Magazine.
2. Comment on the results in requirement 1. What extra insights are available with a flexible budget analysis over that of a static budget analysis.

Question 13
Samtel manufactures flat-panel LCD displays. The displays are sold to major PC manufacturers. For the year 2000 Samtel budgets to manufacture 17760 units. The planned allocation rate was 2 machine hours per unit. Actual number of machine hours used during 2000 was 36480. The static budget variable manufacturing overhead costs equal Rs. 1420800. Following is some manufacturing overhead data for Samtel for the year ended December 31, 2000:

Manufacturing Overhead	Actual	Flexible Budget	Allocated Amount
Variable	Rs. 1532160	Rs. 1536000	Rs. 1536000
Fixed	Rs. 7004160	Rs. 6961920	Rs. 7526400

Required
Compute the following:

a. Budgeted number of machine hours planned
b. Budgeted fixed manufacturing overhead costs per machine hour
c. Budgeted variable manufacturing overhead costs per machine hour
d. Budgeted number of machine hours allowed for actual output produced
e. Actual number of output units
f. Actual number of machine hours used per panel
g. Allocated amount for fixed manufacturing overhead

Question 14
Consider the following data. Data refer to operations of April 2001. Assume a standard cost system. Also assume the use of a flexible budget for control of variable and fixed manufacturing overhead based on machine hours.

1. Fixed manufacturing overhead incurred Rs. 10600

2.	Variable manufacturing overhead incurred	7000
3.	Denominator level in machine hours	500
4.	Standard machine hours allowed for actual output achived	-
Flexible budget data:		
5.	Fixed manufacturing overhead	-
6.	Variable manufacturing overhead (per standard machine hour)	-
7.	Budgeted fixed manufacturing overhead	10000
8.	Budgeted variable manufacturing overhead*	-
9.	Total budgeted manufacturing overhead*	-
Additional data:		
10.	Standard variable manufacturing overhead allocated	7500
11.	Standard fixed manufacturing overhead allocated	10000
12.	Production volume variance	-
13.	Variable manufacturing overhead spending variance	950 F
14.	Variable manufacturing overhead efficiency variance-	-
15.	Fixed manufacturing overhead spending variance	-
16.	Actual machine hours used	-

* For standard machine hours allowed for actual output achieved.

Required
Fill in the blanks.

Question 15

'Virgin' is a cellular phone service provider. Virgin contracts with major cellular operators for airtime in bulk and then resells service to retail customers in the Chandigarh circle. Having adopted an activity based costing system last year, Virgin has defined the following activities – contracting, marketing, technical service and customer service.

The technical service area has one major cost driver, technical support hours. One hour of technical support is budgeted for every 5000 minutes of airtime sold (the output measure). For the month ended July 31, 2001, Virgin budgeted to sell 6850000 minutes. Actual minutes sold totaled 7350000. During the month of July, 1500 actual technical support hours were logged. Some additional data for July 2001 are:

Technical Service Activity Costs	Actual	Budget (on July 1, 2001)
Variable	Rs. 31500	Rs. 32880
Fixed	Rs. 67500	Rs. 69870

Further you are told that budgeted input allowed for actual output produced totaled 1470 hours of technical support for July 2001.

Required

1. What is the actual variable technical service activity cost per technical support hour? Budgeted cost per hour?
2. What is the allocated fixed technical service activity overhead?
3. Calculate the spending variance, the efficiency variance, and the flexible budget variance for variable overhead costs. Discuss these variances.
4. Has Virgin under or over allocated fixed overhead for July 2001? Show how you calculate the under or over allocation.