# UNIVERSITY OF RUHUNA

## FACULTY OF MANAGEMENT AND FINANCE

No of Pages: 08
No of Questions: 05
Total Marks: 100

**BBA 2102 – Cost and Management Accounting**

**Date : 14.12.2015**
**Time : 1.30p.m. – 4.30p.m.**

BACHELOR OF BUSINESS ADMINISTRATION DEGREE 2000 LEVEL

FIRST SEMESTER END EXAMINATION – 2015 DECEMBER

*Three Hours*

***Instructions:***
- ***Answer all questions.***
- ***Calculators are permitted.***

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1)

i. A Cost and Management Accounting System generates information to meet various requirements. Briefly explain.

(02 marks)

ii. Nilwala PLC has recently introduced an Activity Based Costing system (ABC system) to determine unit cost of each product more accurately. The company manufactures three products named $P_1$, $P_2$ and $P_3$ and the following information are given for the year ended 31st December 2014.

| | $P_1$ | $P_2$ | $P_3$ |
|---|---|---|---|
| Production and sales (units) | 1,000 | 2,000 | 6,000 |
| Batch size (units) | 100 | 50 | 200 |
| Machine set-ups per batch | 3 | 3 | 2 |
| Purchase orders per batch | 2 | 2 | 3 |
| Processing time per unit (minutes) | 2 | 3 | 1 |
| Kilowatt hours per unit | 3 | 2 | 3 |
| Total number of production orders | 2 | 4 | 6 |
| Total number of deliveries | 4 | 5 | 5 |
| Total direct labour hours | 5,000 | 15,000 | 40,000 |

The total of the production overhead for the period has been analysed as follows:

| | |
|---|---|
| Machine set-up | Rs. 340,200 |
| Purchasing of materials | Rs. 285,000 |
| Processing | Rs. 168,000 |
| Engineering | Rs. 360,000 |
| Power | Rs. 240,000 |
| Packing | Rs. 136,080 |

In the past, the company has allocated overhead costs for the products on the basis of direct labour hours.

Required:

a) Calculate the cost per unit for each product under the Traditional Costing System.
(02 marks)

b) Calculate the total overhead costs for each product under the Activity Based Costing System (ABC system).
(08 marks)

c) In which product costs, those in part (a) or those in part (b), do you have more confidence? Briefly explain.
(02 marks)

iii. Distinguish between value added activities and non-value added activities with examples.
(03 marks)

iv. Briefly explain the benefits afforded by performing a customer profitability analysis.
(03 marks)
(Total marks 20)

2)

i. A company manufactures a product that requires two separate processes for its completion. Output from process 1 is immediately input to process 2.

The following information is provided for a period.

| | **Process 1** | **Process 2** |
|---|---|---|
| Direct materials 6000 units (Rs.) | 240,000 | - |
| Additional materials (Rs.) | - | 180,000 |
| Direct labour costs (Rs.) | 79,920 | 60,000 |
| Direct expenses (Rs.) | 73,750 | 56,355 |
| Scrap value per unit (Rs.) | - | 30 |
| Actual output (units) | 5,400 | 5,000 |
| Closing work in progress (units) | 200 | - |
| Normal output | 95% | 90% |

A production overhead cost for each process is 250% of direct labour costs of the relevant process. Losses are detected at the end of the process.

The work-in-progress has reached the following degree of completion.

| | % |
|---|---|
| Materials | 100 |
| Direct labour | 60 |
| Direct expenses | 50 |
| Production overhead | 60 |

Required;

Prepare the relevant accounts to show the results of the processes for the period and present a detailed working paper showing your calculations.

(12 marks)

ii. Process A had no opening stock. 34,000 units of materials were transferred from the previous process at Rs. 8.00 per unit. Additional material at Rs.5.00 per unit was added at the start of the process. Labour and overhead costs were Rs.7.00 per completed unit and Rs.3.00 per incompleted units. Losses are detected at the end of the process. The normal output of the process is 95% of input. Abnormal loss was 200 units.

Required;

If 29,000 completed units were transferred to the finished goods stock at the end of process, calculate the value of work-in-progress in process A.

(03 marks)

iii. a) Briefly explain the difference between joint products and by-products with an example.

(02 marks)

b) Global Ltd produces three types of products. Details of the production process and sales are given as follows.

| product | Selling price per unit (Rs.) | Units of output | Further processing cost (Rs.) |
|---|---|---|---|
| A | 125 | 4,000 | 150,000 |
| B | 150 | 3,000 | 175,000 |
| C | 100 | 4,000 | 210,000 |

Joint costs of the process were Rs. 477,500.

Required;

Allocate the joint costs to joint products by using Constant Gross Profit Percentage Method.

(03 marks)

(Total Marks 20)

3)

i. Briefly explain how can be used Cost Volume Profit analysis (CVP analysis) for decision making.

(02 marks)

ii. Namal Ltd produces a facial cream. You are given the following income statement for the year 2015.

| | Rs. | Rs. |
|---|---|---|
| Sales (5,000 units at Rs 200 per unit) | | 1,000,000 |
| Cost of sales | | 500,000 |
| Gross margin | | 500,000 |
| Selling expenses | 200,000 | |
| Administrative expenses | 80,000 | 280,000 |
| Profit | | 220,000 |

Mr. Namal informs you that the only variable costs are cost of sales and Rs.10 selling expenses per unit. All administrative expenses are fixed. In planning for the coming year 2016, Mr.Namal expects to remain selling price constant, with unit volume increasing by 20%. He forecasts the following changes in costs.

| | |
|---|---|
| Variable costs: | |
| Cost of goods sold | Increased by Rs. 4 per unit |
| Selling expenses | Increased by Rs.6 per unit |
| Fixed costs: | |
| Selling expenses | Increased by Rs. 30,000 |
| Administrative expenses | Increased by Rs. 20,000 |

Required;

a) Prepare income statement to show Contribution Margin and Net Profit for the year 2016 if all forecasts are met.

b) Determine the number of units which the firm would have to sell in year 2016 to earn the same profit earnt in year 2015.

(05 marks)

iii. Kandy PLC sells one product at Rs.140 per unit. Its variable cost per unit is Rs.84. Management would like to earn an after tax income of Rs. 280,000. The tax rate is 30%. Fixed costs are Rs 132,000.

a) How many units must be sold to earn target operating income?

b) Which selling price must be charged to earn a profit of Rs. 452,800 on sales of 8,600 units?

(04 marks)

iv. JAT Ltd provides a single service to its customers. The following details are given for the year ending 31st December 2016.

Budgeted activity - 5,200 service units
Budgeted sales value – Rs.45 per service unit
The margin of safety – 18.5%
The budgeted contribution ratio- 40%

Required;
Compute the budgeted fixed costs for the year 2016.

(02 marks)

v. Rainbow Ltd wishes to market a new product at a selling price of Rs.10 per unit. Fixed costs for this product are Rs. 100,000 for less than 50,000 units of output and Rs.150,000 for 50,000 or more than units of output. The contribution margin percentage is 40%.

Required;
Calculate how many units of this product must be sold to earn a target operating income of Rs. 150,000.

(02 marks)

vi. Dinara PLC makes two types of Cellular phones named $X_1$ and $X_2$. The following information is given in respect of these products for the month of June.

| | $X_1$ | $X_2$ |
|---|---|---|
| Selling Price per unit (Rs.) | 24,000 | 8,000 |
| Variable cost per unit (Rs.) | 6,000 | 6,000 |
| Fixed costs are Rs. 1,100,000. | | |

Considering each situation given below separately, answer the following questions.

a) If the sales mix in rupees is 50% for each product, calculate the Weighted Average Contribution Margin (WACM) percentage and sales in units required to earn 580,000 profit.

b) Suppose that the sales mix in units is 3:2 respectively. Calculate the sales in units required to earn Rs. 234,000 profit and margin of safety as a percentage.

(05 marks)
(Total 20 marks)

4)

i. Briefly describe the uses of standard costing.

(02 marks)

ii. TVS Ltd manufactures one standard product and operates a standard cost accounting system. Budgeted costs, standard product cost and actual data for the month ended 30th June are given below.

Budgeted sales and production for the month were 10,000 units.

Direct materials:

Material X – 100,000 kgs at Rs 2 per Kg

Material Y - 40,000 Kgs at Rs. 10 per Kg

Direct wages: 10,000 hours at Rs.30 per hour

Production overhead is absorbed at 200% of direct wages.

Budgeted sales price has been determined to give a profit of 20% of selling price.

Actual data for the month as follows:

Production: 9,500 units were sold at a price of 10% higher than budgeted.

Product cost for each unit of product:

Direct materials consumed:

Material X- 10.5 kgs at Rs 2.60 per Kg

Material Y- 5.2 kgs at Rs 9.70 per Kg

Direct wages: 1.5 hours at Rs.32 per hour

Production overhead incurred Rs.450,000.

You are required to calculate;

a) Budgeted profit and actual profit

(04 marks)

b) The variances for direct materials, direct wages, variable overheads and sales.

(06 marks)

c) Prepare the reconciliation statement to show the reasons for the difference between the budgeted and actual profits.

(02 marks)

iii. The following information relates to the manufacturing process of a company.

| Standard price: | |
|---|---|
| Material A | Rs. 12 per unit |
| Material B | Rs. 15 per unit |
| Actual price: | |
| Material A | Rs. 15 per unit |
| Material B | Rs.20 per unit |

| Standard quantity per unit: Material A | 50 kgs |
|---|---|
| Actual quantity per unit: Material B | 70kgs |
| Material usage variance: Material B | Rs 300 Adverse |
| Total material variance: Material A | Nil |

You are required to calculate;

a) Standard quantity of material B.
b) Actual quantity of material A
c) Material price variances
d) Material usage variance of material A
e) Total material variance of material B

(06 marks)
(Total marks 20)

5)

i. Alpha Ltd has provided the following information.

| | November 2015 | December 2015 | January 2016 | February 2016 | March 2016 | April 2016 |
|---|---|---|---|---|---|---|
| Budgeted sales (units) | 200 | 120 | 150 | 130 | 140 | 160 |
| Closing stock (units) | 40 | 20 | 30 | 35 | 40 | 20 |

a) The product cost per unit is;
Materials Rs. 250
Labour Rs. 70
Overhead Rs. 80
b) The firm has a gross margin of 20% on selling price.
c) 50% of the sales are on cash and the balance on credit.
d) 50% of the credit sales are collected in the following month and the balance are collected in the second month.
e) Materials are purchased one month in advance and paid in the month in which they are purchased.
f) Wages are paid in the month in which output are produced.
g) A new machine is scheduled to be purchased in January costing Rs.75,000 which is to be paid in February.
h) Cash balance at the end of December is Rs.50,000.
i) Overhead cost is paid 50% in the month in which they are incurred and remaining 50% in the following month.

Required;

Prepare a cash budget for the quarter from January to March year 2016.

(10 marks)

ii. Super Ltd manufactures three products named A, B and C. The following information is given in respect of each of these products for the coming accounting period.

| Budgeted sâles | | |
|---|---|---|
| **product** | **quantity** | **Selling price per unit (Rs.)** |
| A | 10,000 | 100 |
| B | 20,000 | 120 |
| C | 15,000 | 140 |

Standard use of raw materials and other costs are as follows.

| Material | $M_1$ | $M_2$ | $M_3$ |
|---|---|---|---|
| Cost per unit (Rs.) | 4 | 6 | 9 |
| Quantity used: | | | |
| Product A | 4 | 2 | - |
| Product B | 3 | - | 2 |
| Product C | 2 | 1 | 3 |

| | Product A | Product B | Product C |
|---|---|---|---|
| Standard direct labour hours | 4 | 3 | 2 |
| Standard labour rate (Rs.) | 4.00 | 4.00 | 4.00 |
| Standard machine hours | 5 | 7 | 4 |
| Standard machine hour rate (Rs.) | 2.00 | 2.00 | 4.00 |
| standard variable overhead rate (per direct labour hour) (Rs.) | 2.50 | 3.00 | 2.00 |

The company estimates the stock levels for the budget period as follows.

| Finished goods stock (units): | | | |
|---|---|---|---|
| | **A** | **B** | **C** |
| Beginning of the period | 2,000 | 3,000 | 1,000 |
| Ending of the period | 2,200 | 2,000 | 1,500 |
| Material stocks(units): | | | |
| | $M_1$ | $M_2$ | $M_3$ |
| Beginning of the period | 25,800 | 16,400 | 11,500 |
| Ending of the period | 24,000 | 14,000 | 12,000 |

Budgeted fixed overhead cost is Rs.429,000.

These fixed costs are absorbed on the basis of machine hours.

You are required to prepare following budgets.

a) Sales budgets in rupees
b) Production budget
c) Material purchase budget in rupees.
d) Standard product cost and standard profit for each product.

(10 marks)

(Total marks 20)

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