Summer Examinations 2015

ACC100215N

Module Title: Cost & Management Accounting
Level: Four
Time Allowed: Three hours plus fifteen minutes reading time. Students must not commence answering the questions until the reading time has ended.

Instructions to students:
- Enter your student number not your name on all answer books.
- During the 15 minutes reading time students are permitted to make notes on the examination paper but not on the answer book. Students should begin answering the questions after the reading time has ended.
- Section A – Answer three questions out of five.
- Section B – Answer one question out of two.
- All questions are equally weighted.
- Begin each question in a separate answer book; label each answer book clearly with the number of the question you are answering.
- The use of a non-programmable calculator is permitted.
- Graph paper will be provided.
- Erasmus/overseas students are permitted to take a bilingual dictionary into the examination room but will not be permitted any extra time.

| No. of Pages | 8 |
| No. of Questions | 7 |
Section A

Answer three out of five questions.

Question 1

Daventry plc manufactures an engineering piston called P. The following data are available regarding product P:

- Selling price: £120 per piston
- Variable cost: £70 per piston

Estimated fixed costs are £320,000. The company budgets to produce 12,000 pistons in the next period.

**Required:**

a. **Scenario I** – Calculate:
   
i. The breakeven point (expressed in pistons and £ of revenue). (3 marks)
   
ii. The contribution margin ratio. (2 marks)
   
iii. The level of activity required to generate a profit of £80,000 (expressed in number of pistons). (3 marks)
   
iv. The margin of safety expressed in pistons. (2 marks)

b. Using graph paper, draw a profit-volume chart for Scenario I. (10 marks)

c. **Scenario II** – Using the graph drawn in b. illustrate and explain the impact of a fall in selling price to £110 per piston and variable costs per piston to £60 while estimated fixed costs are revised to £300,000 on:
   
i. The breakeven point (expressed in pistons and £ of revenue). (2 marks)
   
ii. The level of activity required to generate a profit of £90,000 (expressed in number of pistons). (2 marks)
   
iii. The margin of safety in number of pistons. (1 mark)

(Total: 25 marks)
Question 2

Bundeslida GmbH, a German manufacturing company is planning its production mix for the next period of 2016. The company is able to sell any one or more (or all four) of four separate products, A, B, C and D.

The estimated costs, sales and production data are:

<table>
<thead>
<tr>
<th>Product</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price per unit</td>
<td>70</td>
<td>65</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>Variable costs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour (at £7 per hour)</td>
<td>14</td>
<td>21</td>
<td>28</td>
<td>35</td>
</tr>
<tr>
<td>Material (at £4 per kg)</td>
<td>12</td>
<td>16</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>Resources per unit:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labour (hours)</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Material (kgs)</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Maximum demand (units)</td>
<td>5,000</td>
<td>4,000</td>
<td>6,000</td>
<td>4,000</td>
</tr>
</tbody>
</table>

The average fixed costs that are incurred during every period are €296,000.

Required:

a. Using the information in the table above, indicate the most profitable production mix that Bundeslida GmbH should adopt, when labour hours are limited to 43,000 in the period. (18 marks)

b. What is the maximum contribution possible given the constraint? (5 marks)

c. What is the maximum profit possible given the constraint? (2 marks)

(Total: 25 marks)
Question 3

Bridgestone Limited is preparing its annual budgets for the year to 31 December 2016. It manufactures and sells one product, which has a selling price of £140. The marketing manager forecasts that the price can be increased to £165 with effect from 1 October 2016 and that the sales volume for each quarter of 2016 will be as follows:

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Sales Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40000</td>
</tr>
<tr>
<td>2</td>
<td>42000</td>
</tr>
<tr>
<td>3</td>
<td>36000</td>
</tr>
<tr>
<td>4</td>
<td>46000</td>
</tr>
</tbody>
</table>

Sales for the first quarter of 2017 are expected to be 42,000 units. Each unit of the finished product which is manufactured requires three units of component P and two units of component Q, together with a body shell S. These items are purchased from an outside supplier. Currently, prices per unit in £ are:

<table>
<thead>
<tr>
<th>Component</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component P</td>
<td>10.00</td>
</tr>
<tr>
<td>Component Q</td>
<td>8.00</td>
</tr>
<tr>
<td>Shell S</td>
<td>16.00</td>
</tr>
</tbody>
</table>

The components are expected to increase in price by 10% with effect from 1 April 2016. The price of the shell is expected to increase by 5% with effect from 1 July 2016.

Assembly of the shell and components into the finished product requires 4 labour hours; labour is currently paid £8.00 per hour. A 4% increase in wage costs is anticipated to take effect from 1 October 2016.

Variable overhead costs are expected to be £12 per unit for the first half of 2016 and then anticipated to decrease by 4% in the second half of same year; fixed production overhead costs are expected to be £480,600 for the whole year, and are absorbed on a per unit basis. Stocks on 31 December 2015 are expected to be as follows:

<table>
<thead>
<tr>
<th>Stock</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished units</td>
<td>8000 units</td>
</tr>
<tr>
<td>Component P</td>
<td>4000 units</td>
</tr>
<tr>
<td>Component Q</td>
<td>5500 units</td>
</tr>
<tr>
<td>Shell S</td>
<td>600 units</td>
</tr>
</tbody>
</table>

The finished units’ closing stocks at the end of each quarter are to be 10% of next quarter’s sales.
Required:

a. Prepare the following budgets for Bridgestone Limited for the year ending 31 December 2016, showing values for each quarter and the year in total:

i. Sales budgets (in £ and units) (2 marks)
ii. Production budget (in units) (4 marks)
iii. Material usage budget (in units) (6 marks)
iv. Production cost budget (in £) (12 marks)

b. Sales are often considered to be the “principal budget factor” of an organisation. Explain the meaning of this. (1 mark)

(Total: 25 marks)

Question 4

Agrofarm Limited, a medium-sized company based in Shropshire, produces a single product in its countryside factory.

For control purposes, a standard costing system was recently introduced and is now in operation. The standards set for the month of April 2015 were as follows:

Production and sales 20,500 units

Materials:
- Material A 5 kilos per unit at £1.25 per kilo
- Material B 3 kilos per unit at £0.35 per kilo
- Labour 1.5 hours per unit at £6.20 per hour

Overheads (all fixed) at £82,000 per month are absorbed into the product costs.

The actual data for the month of April 2015 are as follows:

22,800 units were produced.

Materials: Used 99,500 kilos of material A at a total cost of £122,600; Used 69,300 kilos of material B at a total cost of £19,900.

Labour: Paid an actual rate of £6.60 per hour to the labour force. The total amount paid out amounted to £22,000.

Overheads: (all fixed) £84,500.
Required:

a. Prepare a budgeted cost statement for April 2015.  
   (4 marks)

b. Prepare the actual cost statement for April 2015.  
   (2 marks)

c. Calculate the following variances for the period under review:
   i. Material price  
      (2 marks)
   ii. Material usage  
      (2 marks)
   iii. Labour rate  
      (2 marks)
   iv. Labour efficiency  
      (2 marks)
   v. Fixed overhead expenditure  
      (2 marks)
   vi. Fixed overhead volume  
      (2 marks)

d. Prepare a statement using the variances in c. which reconciles the actual with 
   the standard cost figure you calculated in a. and b.  
   (3 marks)

e. Explain briefly the possible reasons for inter-relationships between material 
   variances and labour variances to the management of Agrofarm Limited. 
   (4 marks)

(Total: 25 marks)

Question 5

Hightown Ltd is looking for new investment opportunities.

The following information relates to three possible capital expenditure projects A, B or 
C. Because each of the projects would essentially perform the same function within 
the business, only one project will be accepted:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial cost (£'000)</td>
<td>600</td>
<td>690</td>
<td>540</td>
</tr>
<tr>
<td>Expected life (years)</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Scrap value (£’000)</td>
<td>30</td>
<td>45</td>
<td>24</td>
</tr>
<tr>
<td>Expected cash inflows: £’000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year End 1</td>
<td>240</td>
<td>300</td>
<td>165</td>
</tr>
<tr>
<td>Year End 2</td>
<td>210</td>
<td>210</td>
<td>195</td>
</tr>
<tr>
<td>Year End 3</td>
<td>195</td>
<td>150</td>
<td>285</td>
</tr>
<tr>
<td>Year End 4</td>
<td>180</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>Year End 5</td>
<td>165</td>
<td>150</td>
<td></td>
</tr>
</tbody>
</table>

The company estimates that its cost of capital is 12 percent.
Required:

a. Calculate:

i. The payback period for each project.  
(4 marks)

ii. The accounting rate of return for each project (using the average investment method).  
(4 marks)

iii. The net present value of each project.  
(8 marks)

b. Advise Hightown Limited on which project to accept, giving clear reasons to support your advice.  
(5 marks)

c. Discuss some of the factors management would need to consider, in addition to the financial factors, before making a final decision.  
(4 marks)

<table>
<thead>
<tr>
<th>12% Discount Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

(Total: 25 marks)

End of Section A
Section B follows overleaf
Section B

Answer one out of two questions.

Question 6

Activity based costing (ABC) is more accurate under certain circumstances than traditional absorption costing for making decisions.

Required:

a. Briefly explain main highlights of each of the two costing methods. (5 marks)

b. Outline the advantages and disadvantages of the traditional absorption costing method and the circumstances that make it more suitable than ABC method. (10 marks)

c. Outline the advantages and disadvantages of ABC method and the circumstances that make it more suitable than the traditional absorption method. (10 marks)

(Total: 25 marks)

Question 7

During the late 1980s criticisms of traditional management accounting practices were widely publicised and new approaches were advocated which are more in tune with today’s global competitive environment.

Required:

a. Outline and briefly describe the main features of a Just-in-Time philosophy. (10 marks)

b. Identify the four components of a Cost of Quality Report, and briefly explain its purpose in assisting management to control these costs. (7 marks)

c. Describe the Target costing approach to cost management. (4 marks)

d. Distinguish between Target Costing and Kaizen Costing. (4 marks)

(Total: 25 marks)