Module Title: Management Accounting
Level: Five
Time Allowed: Three hours plus 15 minutes reading time. Students may not commence answer 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.
- Answer four questions: one from Section A and three from Section B.
- The use of a non-programmable calculator is permitted.

No. of Pages: 7
No. of Questions: 5
Section A

Answer the compulsory question.

Question 1

Drake Limited manufactures one standard product. Drake Limited operates a standard costing system.

Data from the budget and the standard product cost for quarter 1 are given below.

Budgeted and standard cost:

Budgeted sales and production for quarter 1 are 10,500 units. 
Standard cost for each unit of product:
Direct material:
Material A: 6 kilograms @£2 per kg
Material B: 4 Kilograms @ £2.50 per kg
Direct Labour 0.5 hours @ £16 an hour
Budgeted overheads for quarter 1 were £236,250. Fixed production overhead is absorbed on labour hours.

Actual data for quarter 1:

Production and sales were 11,000 units sold at standard price.
Direct materials consumed:
Material A: 64,000 kg costing £130,000.
Material B: 47,000 kg costing £101,200.
Direct wages incurred 5,300 hours and cost £89,500.
Fixed production overhead incurred in quarter 1 was £250,000.

Required:

Variance Calculation

a. Prepare the following variances and clearly show your workings.
   i. Material A Price
   ii. Material A Usage
   iii. Material B Price
   iv. Material B Usage
   v. Labour Rate
   vi. Labour Efficiency
   vii. Fixed Overhead Expenditure
   viii. Fixed Overhead Capacity
   ix. Fixed Overhead Efficiency
b. Produce an Operating Statement for Drake Limited reconciling standard absorption cost of actual production to actual cost for quarter 1.

(20 marks)

Variance Explanation
In quarter 2 Drake Ltd replace machinery with new equipment. Drake Ltd also have difficulty sourcing Material A.

c. Consider both scenarios. What possible effect will this have on variances?

(8 marks)

Flexible Budgeting

d. Explain what is meant by the term ‘flexible budgeting’. Give 2 advantages and 2 disadvantages of flexible budgeting.

(6 marks)

Total: 34 marks
Section B

Answer three out of four questions.

Question 2

Mo Jalone produces scented candles. The budgeted selling price and costs are as follows:

<table>
<thead>
<tr>
<th></th>
<th>£</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price</td>
<td>24.00</td>
</tr>
<tr>
<td>Direct material</td>
<td>7.30</td>
</tr>
<tr>
<td>Direct labour</td>
<td>1.90</td>
</tr>
<tr>
<td>Variable overheads</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Fixed costs (under current production range): £900,000 per month
Budgeted production: 100,000 candles per month

Required:

a. Breakeven analysis.

i. Calculate the breakeven point for Mo Jalone in both units and sales value.  
   (4 marks)

ii. Calculate the margin of safety for Mo Jalone based on the latest budget, in units, sales value and as a percentage.  
    (4 marks)

iii. Later in the year Mo Jalone learns that the material costs will increase by 15%. Calculate the revised breakeven point and margin of safety.  
     (4 marks)

b. Balanced Scorecard.

The Finance Director of Mo Jalone would like to prepare a Balanced Scorecard as part of her monthly report for senior managers.

i. Outline the purpose of a Balanced Scorecard.  
   (2 marks)

ii. Describe the four perspectives of the balanced scorecard and suggest performance measures which Mo Jalone could include.  
    (6 marks)

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Question 2 continues overleaf
The finance director would like to include performance measures to reflect ethics and sustainability. Discuss the merits of her view and suggest how she might achieve it.

(2 marks)

Total: 22 marks

Question 3

Valley Toys plc makes two types of action figures, the Standard and the Deluxe. The Standard is the most popular product and is sold in large numbers. The Deluxe is a more specialised product with a higher number of moveable parts which is sold in smaller quantities.

Budgeted details for the two types of action figure are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>Deluxe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual sales</td>
<td>200,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Average order size</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>Direct Materials per unit</td>
<td>£2</td>
<td>£5</td>
</tr>
<tr>
<td>Direct rate per hour</td>
<td>£15</td>
<td>£15</td>
</tr>
<tr>
<td>Special components per unit</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Production batch size</td>
<td>200</td>
<td>10</td>
</tr>
<tr>
<td>Set ups per batch</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Labour hours</td>
<td>0.2</td>
<td>0.6</td>
</tr>
</tbody>
</table>

**Overheads**

<table>
<thead>
<tr>
<th></th>
<th>£</th>
<th>Cost Driver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling costs</td>
<td>150,000</td>
<td>Number of batches</td>
</tr>
<tr>
<td>Set up costs</td>
<td>95,000</td>
<td>Number of set ups</td>
</tr>
<tr>
<td>Special component handling</td>
<td>180,000</td>
<td>No. of special comp.</td>
</tr>
<tr>
<td>Other overheads</td>
<td>125,000</td>
<td>Labour hours</td>
</tr>
</tbody>
</table>

**Required:**

a. Calculate the cost per unit of the Standard and the Deluxe action figures based on Activity Based Costing techniques.

(12 marks)

b. Calculate the cost per unit of the Standard and the Deluxe action figures based on traditional Absorption Costing techniques.

(4 marks)
c. Discuss the advantages and disadvantages of adopting an Activity Based Costing system.

(6 marks)

Question 4

Dewberry Limited makes four products A, B, C and D. Details of sales prices, costs and resource requirements for each of the products are as follows:

<table>
<thead>
<tr>
<th>Per unit sales/costs</th>
<th>Product A</th>
<th>Product B</th>
<th>Product C</th>
<th>Product D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price</td>
<td>14.00</td>
<td>13.60</td>
<td>12.00</td>
<td>15.60</td>
</tr>
<tr>
<td>Materials cost</td>
<td>6.50</td>
<td>7.20</td>
<td>6.90</td>
<td>11.40</td>
</tr>
<tr>
<td>Direct labour cost</td>
<td>2.40</td>
<td>2.20</td>
<td>2.40</td>
<td>3.00</td>
</tr>
</tbody>
</table>

(Time required)

<table>
<thead>
<tr>
<th>Machine time per unit</th>
<th>minutes</th>
<th>minutes</th>
<th>minutes</th>
<th>minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Labour time per unit</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weekly sales demand</th>
<th>Units</th>
<th>Units</th>
<th>Units</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6,500</td>
<td>7,000</td>
<td>8,500</td>
<td>6,500</td>
</tr>
</tbody>
</table>

Machine time is a bottleneck resource and the maximum capacity operates at 1200 machine hours each week. Operating costs, including direct labour costs are £88,000 each week.

Required:

a. Determine the quantities of each product that should be made and sold each week to maximise profit and calculate the weekly profit.

(16 marks)

b. Calculate the throughput accounting ratio at this profit maximising level of output and sales.

(4 marks)

c. Interpret the result of the ratio in b. above.

(2 marks)

Total: 22 marks
Question 5

Charins plc produces specialist handmade hand cream and soap bars. Each product passes through a mixing process and a packaging process.

Each product is manufactured and sold in boxes of 100.

One box of handcream makes a contribution of £5, takes 3 hours of mixing time and 6 hours of packaging time.

One box of soaps makes a contribution of £6, takes 2 hours of mixing time and 9 hours of packaging time.

There is a maximum of 50 mixing hours available each week and 145 of packaging hours.

All staff are paid £10 per hour.

Required:

a. Formulate the linear programming problem of Charins plc identifying the constraints and the objective function.  
   (4 marks)

b. Plot the constraints on a suitable graph and indicate the feasible region.  
   (7 marks)

c. Determine the optimum production plan, using simultaneous equations to verify the optimal point.  
   (4 marks)

d. Calculate the total contribution at this optimum point.  
   (2 marks)

e. Calculate and explain the shadow price of one hour of packaging time.  
   (5 marks)

Total: 22 marks