Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click Next to start the test.
This examination is structured as follows:

<table>
<thead>
<tr>
<th>Section number</th>
<th>Number of tasks</th>
<th>Time for section (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>45</td>
</tr>
</tbody>
</table>

The time available for each section is for reading, planning and writing your answer(s).

This information will be available for you to access during the examination by clicking on the Pre-seen button.
Today is 1 March 2019. Freddie Williams, Finance Manager asks you to read the following extract from the minutes of a recent senior management meeting:

Extract of minutes (CONFIDENTIAL)

Sally Gomez, Sales Director, stated that she believes that both domestic and commercial customers increasingly want to know that the products they buy are from sustainable materials and made in a sustainable way. Customers also want to know that the business they are buying from takes corporate social responsibility (CSR) and environmental issues seriously. She would like to be able to launch a new range of climbing frames made out of recycled materials. There was general consensus that this was a good idea and Grace Lucas, Design Manager agreed to start working on a design.

Sally then suggested that the time is right to look at our current CSR record as well as the effect the business has on the environment so that we can see more clearly what needs to be worked on. Tony Trigg, Managing Director, commented that some environmental initiatives have already been put into place. These include solar panels on the roof to generate the electricity for the main office and the installation of a Smart meter in the factory to monitor electricity consumption. However, he is aware that more needs to be done, including developing an environmental policy for the business. Tony commented that he thought it was a good idea to see where the business is in terms of CSR and its impact on the environment and asked Ping Bennett, Finance Director to prepare a briefing paper.

After you read the extract of the minutes, Freddie Williams calls you and says:

‘Hopefully you’ve had a chance to look at the extract of the minutes that I asked you to read. Ping wants you to prepare the first draft of the briefing paper that she has to prepare for the senior management team. She would like the briefing paper to explain:

- the nature of each cost category in an environmental cost of quality report, giving one example of an environmental cost that the business has already incurred and one example of an environmental cost that could be incurred in the future for each category. To clarify, that means eight examples in total.
- the economic, legal and ethical corporate social responsibilities that our business faces and how we currently meet these responsibilities.’
Write the first draft of the briefing paper for the senior management team in the box below.
A month later you receive the following email from Freddie Williams, Finance Manager:

From: Freddie Williams, Finance Manager  
To: Finance Officer  
Subject: Lean production and budgeting

As a result of looking at the impact our business has on the environment and how we might make the business operate more sustainably, a couple of suggestions have been made by Tony Trigg, Managing Director.

Firstly, he believes, having now spent time focusing on where there is waste in the production process that the business needs to adopt lean production methods to factory workflow and inventory management.

Secondly, Tony has suggested that we take a different approach to how we prepare the budget. We’ve always taken an incremental approach to budgeting, but Tony believes that we will get a better idea of how cost is generated if we use activity-based budgeting. He thinks it will be particularly valuable for machinery maintenance, as recently he has seen that the staff sometimes have nothing to do. Having said that I know that when packing and dispatch are busy the maintenance staff are happy to help out.

Tony has asked the Finance Department to prepare a briefing paper to be circulated to the senior management team on both of these suggestions. I have done some preliminary work looking at the activities associated with machinery maintenance, which is included in an attachment to this email. I would now like you to prepare the first draft of the briefing paper to include explanations of:

- How lean production principles could be applied to factory workflow and inventory management. Please also include any potential problems that might arise.
- How the budget for machinery maintenance staff cost would be established using an activity-based budgeting approach and the benefits of using this approach for machinery maintenance staff cost.

Freddie Williams  
Finance Manager  
Trigg Adventure

The attachment to the email can be found by clicking on the Reference Materials button above.
ACTIVITY INFORMATION FOR MACHINERY MAINTENANCE STAFF

Number of machines

<table>
<thead>
<tr>
<th></th>
<th>Cutting machines</th>
<th>Drilling machines</th>
<th>Sanding machines</th>
<th>Spraying machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>15</td>
<td>50</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

The machinery maintenance department undertake two different activities: servicing and repairs.

Each piece of machinery is serviced six times a year to ensure that it is in good condition. A service involves cleaning, sharpening, replacing small parts and oiling as required.

Repairs are made as and when required for all types of machine.

Time taken for each type of activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cutting machines</th>
<th>Drilling machines</th>
<th>Sanding machines</th>
<th>Spraying machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours for a service</td>
<td>2.5</td>
<td>0.8</td>
<td>0.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Average number of hours for a repair</td>
<td>2.2</td>
<td>1.6</td>
<td>1.2</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Write the briefing paper requested by Freddie Williams in the box below.
It is now six months later. A range of climbing frames using reclaimed timber and accessories made from recycled materials was developed and launched two months ago. So far the range includes two designs: Regular and Deluxe. The demand for this new range is far exceeding expectations. You receive the following email from Freddie Williams, Finance Manager:

From: Freddie Williams, Finance Manager
To: Finance Officer
Subject: Production constraints and new equipment

Richard Herrick, Stores Manager has just told me that the reclaimed timber supplier is facing a shortage and has said that for the next two months it can only supply us with 15,000 lengths of Grade A timber and 15,000 lengths of Grade B timber. The supplier might be able to source some more timber but that this would be at considerable additional cost. Richard is worried about what this means for production and has asked me to look at the situation.

The different grades of reclaimed timber are used in both of the new climbing frame designs and so I have drawn up a linear programming graph (see attached) to show the impact of these potential constraints on production. I need to go to a meeting now and so I would like you to prepare commentary to go with this graph.

Whilst I’m thinking about it there is something else you can help me with. We have invested in a new cutting machine: its purchase price was F$100,000, we spent F$5,000 having it installed and a further F$1,000 to have an independent inspection and certificate to ensure that we meet all Health and Safety requirements for its operation (this is a legal requirement). We also spent F$800 on bringing in an external training consultant to train the workers on its use. We expect this cutting machine to have a useful economic life of 10 years. We have also sold an old cutting machine for F$1,750. This had a tax written down value of F$2,500 and a carrying value at the date of disposal of F$2,000.

Please email the following to me:

- An explanation of:
  - Where the feasible region will be on the linear programming graph.
  - How to determine the optimal production mix for the two designs and an estimate from the graph of what this is.
  - Other factors that need to be considered before a final decision is made about the production plan.

- An explanation of:
  - Which elements of expenditure on the new cutting machine should be capitalised and which should not. Please use the criteria in IAS16: Property, plant and equipment to justify your explanation.
  - How the old cutting machine will affect this year’s financial statements and the tax charge for the year.

Freddie Williams
Finance Manager
Trigg Adventure

The attachment to the email can be found by clicking on the Reference Materials Button above.
Notes:

X = number of Regular Design climbing frames

Y = number of Deluxe Design climbing frames.

Lines on the graph:

Line A: 15X + 12Y = 15,000 lengths of Grade A reclaimed timber

Line B: 10X +15Y = 15,000 lengths of Grade B reclaimed timber

Line C: X = 300 units of Regular Design climbing frame (confirmed orders)

Line D: Y = 200 units of Deluxe climbing frame (confirmed orders)

Line ISO: This is the iso-contribution line. Our objective for this decision is to maximise contribution.
Write your response to Freddie Williams in the box below.
A few months later Freddie Williams calls you into his office and says:

‘I've been asked by the directors to report to them on a couple of matters.

Firstly, I've been asked to look at the sales variances for the new range of climbing frames made from recycled materials for the last month. When we launched the range five months ago, we weren't entirely sure how successful it would be and so our original budget was set at what we felt was a conservative sales volume. The sales team were given the ability to give individual customers discounts and as a result of this and their hard work, sales are better than we originally anticipated. Therefore, three months ago, we revised the sales volume estimates because we realised that our original projections were too pessimistic. To help explain how this new range has performed in the last month I have split the sales price and volume contribution variances into planning and operational variances. As far as I know the directors are not used to seeing planning and operational variances.

Secondly, as a result of the success of the new range and because we've implemented a number of efficiency initiatives such as lowering inventory levels, the business bank balance has steadily been growing. This is obviously good news and means that less finance will need to be borrowed in four months' time when we start the planned expansion of the factory. There is, however, a little bit of disagreement amongst the directors about how to deal with the growing cash balance. Ben Darcy, Production Director, believes that the bank balance should be left as it is and allowed to continue to grow despite it only generating minimal interest. Tony Trigg, Managing Director thinks that any surplus funds should be invested to earn a return and has suggested short-term Treasury Bills. Sally Gomez, Sales Director thinks that we should be more adventurous and invest surplus funds in the stock market.

To sum up, I'd like you to prepare a briefing paper for the directors which explains:

- What the sales price, sales volume contribution and total sales variances for the new range mean and possible reasons for their occurrence. Please also explain the issues that we will need to consider when setting the sales budget for the new range for the year ending 31 December 2020.
- The suitability of each of the suggestions made by the directors. Please also include one example of a different short-term investment that may be suitable.

Freddie then hands you a schedule of the sales variances for the month which can be found by clicking on the Reference Materials button above.
Sales variances for the new range of climbing frames for the month of December

<table>
<thead>
<tr>
<th></th>
<th>Planning variances</th>
<th>Operational variances</th>
<th>Total variances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales price variances:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular Design</td>
<td>Nil</td>
<td>18,000 A</td>
<td>18,000 A</td>
</tr>
<tr>
<td>Deluxe Design</td>
<td>Nil</td>
<td>2,500 F</td>
<td>2,500 F</td>
</tr>
<tr>
<td>Sales volume contribution variances:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular Design</td>
<td>21,700 F</td>
<td>16,100 F</td>
<td>37,800 F</td>
</tr>
<tr>
<td>Deluxe Design</td>
<td>16,150 F</td>
<td>18,050 A</td>
<td>1,900 A</td>
</tr>
<tr>
<td>Total sales variance</td>
<td></td>
<td></td>
<td>20,400 F</td>
</tr>
</tbody>
</table>

Notes:

- A = adverse and F = favourable.
- When the budget was revised the mix between Regular Design and Deluxe Design was kept to the originally budgeted mix.
- The sales volume contribution variance is calculated using the individual unit's method.
- The standard selling price of the climbing frames is the price we expect to receive from our customers after discounts have been given.
Write the briefing paper requested by Freddie Williams in the box below.
Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.