FACULTY OF MANAGEMENT
DEPARTMENT OF BUSINESS MANAGEMENT
FINAL SUMMATIVE ASSESSMENT JUNE 2014

SUBJECT: Business Management 2A
CODE: BMA2A01/BMA12A1
TIME ALLOWED: 2 Hours
TOTAL MARKS: 100

EXAMINER(S): Dr T.N. van der Linde
MODERATOR: Dr A. Vermeulen
NUMBER OF PAGES: 13

INSTRUCTIONS:
• This is a closed-book assessment.
• Answer all the questions:
  o Answer section A on the electronic scanner sheet provided. Indicate the correct answer by filling the correct block with a pencil.
  o Answer section B (Questions 1-4) and Section C (Questions 5-7) in the answer book provided
• Number your answers clearly.
• Question papers must be handed in together with your answer books.
• Read the questions carefully and answer only what is asked.
• Write neatly and legibly.
• Non-programmable calculators are allowed.
• The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.
• NB. This paper must be handed in.
SECTION B

QUESTION 1

Operations is the business process that transforms inputs into outputs (value creation) that is valued by the customer. The transformation is being influenced by constraints and there are various tools and techniques of how to do the transformation.

Meredith & Shafer states that "Everyone is doing operations ______ everyone is an operations manager". Critically evaluate Meredith and Shafer's statement and indicate if you agree or disagree with Meredith & Shafer's statement by supporting your statement with a practical example.

QUESTION 2

CASE STUDY – ALPHA PLASTICS

You are a consultant with BR (Business Rescue) Pty that assist organizations in business process and product design, and the implementation (solving) of quality problems. You receive a request for help from the CEO of Alpha plastics. The following information is provided to you during your meeting.

Background

Alpha plastics specialises in the design and manufacture of containers for industrial use that they sell through wholesalers. The research and development section (R&D) is continuously working on the development of new materials and the use in new products. The R&D section developed a new material that is UV resistant and does not colour when exposed to sunlight (Design X). Management saw this new product as a possible order winner.

The decision

In their quest to gain a competitive advantage management took a decision to continue with the production of Design X. This decision was taken after the project manager stresses that more stringent testing was required. Although a prototype was developed it was only shown to clients as a possible "product”. The marketing director stated that “getting new sales is tough” and that "too much money has already been spent” on this project. The risk officer's only concern was if the product is “safe”. After receiving confirmation that the product is safe the risk officer recommends that production should be started.

The problem

The following is an extract from the minutes of an emergency meeting:

1. Set-up times increased by 83% as the current machines are not tooled correctly to mix the new composition.
2. Feedback from clients indicated that the container opening is too large, not according to industry standards and spillage occurs (which are hazardous in their work environment).
3. During final inspection up to 22% of production is rejected due to various reasons.
4. One employee reported that the container exploded when filled with fuel.
5. The marketing director reports that clients are starting to get nervous about the new product and the impact on their relationship with Alpha plastics.

The meeting concluded with a plea from the CEO “What strategy can we at Alpha plastics follow to manage quality of design X?”

QUESTION

It is required of you to identify and explain the five (5) basic strategies that Alpha plastics can use in managing the quality of its products, services and business processes to the CEO.
UJLab2000 (Pty) Ltd installed an test kit sorting machine to help the company to meet the demand for 1 liter test kits with a design capacity of 1500 test kits per hour and the machine is operated 24 hours per day, 5 days per week (120 hours) per week.

Records for a week's production show the following lost production time:

Table: Test kit machine production information for one week

<table>
<thead>
<tr>
<th>Down time</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set-up time</td>
</tr>
<tr>
<td>2</td>
<td>Regular maintenance</td>
</tr>
<tr>
<td>3</td>
<td>Shift changes</td>
</tr>
<tr>
<td>4</td>
<td>Quality checks</td>
</tr>
<tr>
<td>5</td>
<td>Planned idle time</td>
</tr>
<tr>
<td>6</td>
<td>Machine breakdown</td>
</tr>
<tr>
<td>7</td>
<td>Labour strike</td>
</tr>
<tr>
<td>8</td>
<td>Waiting for raw materials</td>
</tr>
<tr>
<td>9</td>
<td>Electricity load shedding</td>
</tr>
</tbody>
</table>

It is required of you to:

**QUESTION 3.1**
Determine the design capacity of the test kit sorting machine.
Design capacity is ____________________________

**QUESTION 3.2**
Calculate the effective capacity of the test kit sorting machine.
Effective capacity is ____________________________

**QUESTION 3.3**
Determine the actual capacity of the test kit sorting machine.
Actual capacity is ____________________________

**QUESTION 3.4**
Calculate the utilization of the test kit sorting machine.
Machine utilisation is ____________________________

**QUESTION 3.5**
Calculate the efficiency of the test kit sorting machine.
Machine efficiency is ____________________________
JOMO'S HAMBURGER HUT

Jomo's Hamburgers sells hamburgers at the local rooftop market during weekends and public holidays. The BOM (Bill of Material) – (demand/forecast is dependable) for hamburgers is as follow:

Table: BOM for hamburgers (per hamburger)

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hamburger bun</td>
<td>1 bun</td>
</tr>
<tr>
<td>Hamburger patty</td>
<td>1 hamburger patty</td>
</tr>
<tr>
<td>Cheese slice</td>
<td>1 cheese slice</td>
</tr>
<tr>
<td>Tomato slice (6 slices per tomato)</td>
<td>1 tomato slice</td>
</tr>
<tr>
<td>Hamburger sauce</td>
<td>20ml hamburger sauce</td>
</tr>
<tr>
<td>Polystyrene container</td>
<td>1 hamburger container</td>
</tr>
</tbody>
</table>

Every time when the hamburger inventory reaches the re-order point (the re-order point is when the safety stock limit of 23 hamburgers is reached) Jomo places an order for the whole (completed) BOM – that is; he orders all the ingredients for a hamburger from the same supplier. The lead time is 1 day.

The following information is also provided to you from the MIS (Management information system) that Jomo uses. To forecast his demand (inventory purchase) for the next weekend Jomo uses the weighted average method (see weights allocated in table) of the last five weekends of sales (demand). He assigns equal weights to the weekends

Table: Inventory information

<table>
<thead>
<tr>
<th>Item</th>
<th>Hamburgers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order quantities (Hamburgers)</td>
<td>12 (per dozen)</td>
</tr>
<tr>
<td>Safely stock</td>
<td>23 Hamburgers</td>
</tr>
<tr>
<td>Weekly sales</td>
<td></td>
</tr>
<tr>
<td>1st weekend-weight (0.2)</td>
<td>211</td>
</tr>
<tr>
<td>2nd weekend-weight (0.2)</td>
<td>189</td>
</tr>
<tr>
<td>3rd weekend-weight (0.2)</td>
<td>197</td>
</tr>
<tr>
<td>4th weekend-weight (0.2)</td>
<td>180</td>
</tr>
<tr>
<td>5th weekend-weight (0.2)</td>
<td>200</td>
</tr>
<tr>
<td>1st weekend (new month)</td>
<td>?</td>
</tr>
<tr>
<td>Weekly holding cost for hamburgers</td>
<td>R36.00</td>
</tr>
<tr>
<td>Weekly ordering cost</td>
<td>R12.00</td>
</tr>
</tbody>
</table>

By using the above information answer the following questions (Questions 4.1 - 4.4) below in your exam book.

QUESTION 4.1

By using the weighted moving average method of forecasting the demand for the 1st weekend of the new month is ___________ hamburgers. (2 marks)

QUESTION 4.2

The economic order quantity (EOQ) for hamburgers is __________ hamburgers. (3 marks)

QUESTION 4.3

The amount (quantity) of hamburger sauce that will be ordered is __________ ml. (2 marks)
QUESTION 4.4

The amount (quantity) of tomatoes that will be ordered is __________ tomatoes. (3 marks)

SECTION C (20 MARKS)

QUESTION 5 (10 Marks)

"Zero waste" implies that quality needs to be managed from the inputs into the transformation process, through the transformation and finally when the product or service that is being delivered. The quality GAP model is a tool that operational managers can use to identify points of waste (constraints) that can impact on the quality of products and/or service created.

It is required from you to recall the GAPS that we find in the GAPS model as well as a description of the GAP by using the following format in your exam book.

GAP 1
Name: ____________________________

Description:

________________________________________________________________________

QUESTION 6 (5 Marks)

Materials and customer processes makes use of the three sub-processes of materials processing, customer processing and information processing. The link between these processes is known as interfaces of which we can find human-to-human, human-to-machine, machine-to-machine and machine-to-human. One of the responsibilities of the operations manager is to design the business processes of how these sub-processes interlinks and work together to create value.

It is required of you to recall and list five characteristics of a well-designed business process.

QUESTION 7 (5 marks)

In a services environment (customer processing operations) customers arrive at the point of delivery at different times and at a different rate. The processing time also differs from service to service as required by the customer. The service encounter starts when the customer arrives at the point of service delivery and has to stand in a queue. In the queue the customer exhibit three types of behaviour.

It is required of you to graphically (draw) present the types of behaviours the customer can exhibit in encountering a queue. Also explain the types of behaviour that the customer can exhibit in encountering a queue.

- END OF PAPER -