Operations and Supply Chain Management
(Core Module)

SUPPLEMENTARY EXAMINATION

MODULE CODE: OSC9X02

EXAMINATION PERIOD: THIRD QUARTER 2021

Date:	Thursday, 07 October 2021
Time:	08h30 – 11h30: Start examination 11:45 submit examination
Total Marks:	100 (Weighting 50% of the total exam mark)
Internal Moderator:	Dr Dino Petrarolo
External Moderator:	Dr Bernadette Sunjka

Please read these instructions carefully	- This is an open-book examination. - Please answer all questions provided in the exam - Ensure that your questions are numbered correctly and start each question on a new page - Type in your name, student number, and date on the first page of your answer booklet. - This question paper consists of 10 pages including the cover page **Students must use the naming convention given for their answer book as follows.** - Last Name _Initial_Student Number_MBA Exam Module Title _Date (dd_mm_yy) - - Example: Nkosi_M_201036829_ MBA Innovative Marketing _01_ 09_ 20) - Please make sure that your **laptops are fully charged** before the exam window period. - We advise students to be at a location that has **reliable internet access.** - Use font Arial 12, line spacing 1.5. - All answer books and relevant attachments must be uploaded on **Blackboard_Final Examination Tab**

Plagiarism

Please note that all exam answers will be submitted through the Turnitin similarity index to establish if there is a similarity. As this is an open book exam, you are required to use the APA academic referencing style. Where you quote verbatim from any source, the quotation must be in double inverted commas and the page number given as part of the reference.

2021 Supplementary Examination:
Operations and Supply Chain Management

Course Outline: Assessment Weightings	
• Syndicate assignment	30%
• Class participation - MCQs	10%
• Individual assignment	10%
• Supplementary Examination (this assessment): Part A = 40 Marks & Part B = 60 Marks	**50%**

Open Book and Open Access: This means any books or notes may be used during the exam period. As this is a virtual exam session, Internet or any other means to communicate with others is still not allowed but cannot be controlled. Therefore, all questions will be marked on the basis of individual understanding and insights with strict time limits.

Internal Examiner: Dr Dino Petrarolo

External Examiner: Dr Bernadette Sunjka

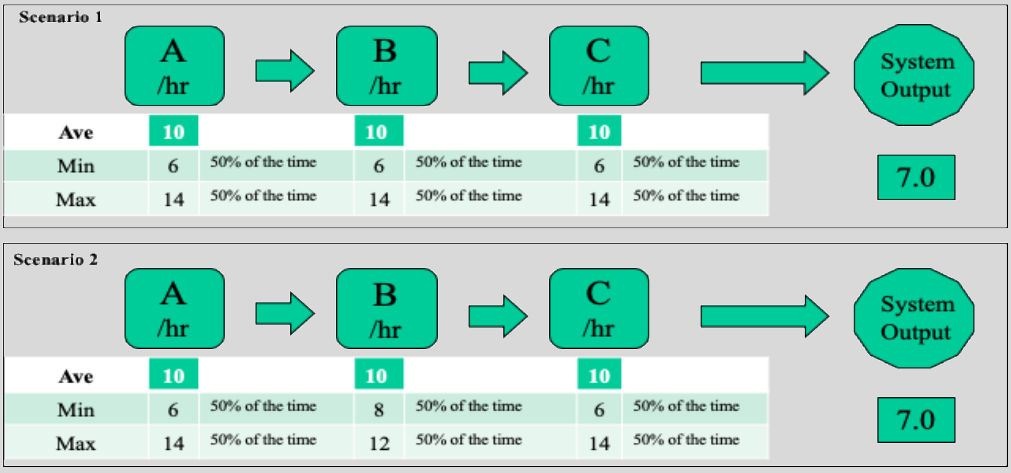
Supplementary Examination - Part A

		Total
A	**Part A: Short Questions [40 marks] – Multiple Choice questions – Please complete this section by following this link:** Operations and Supply Chain Management	40

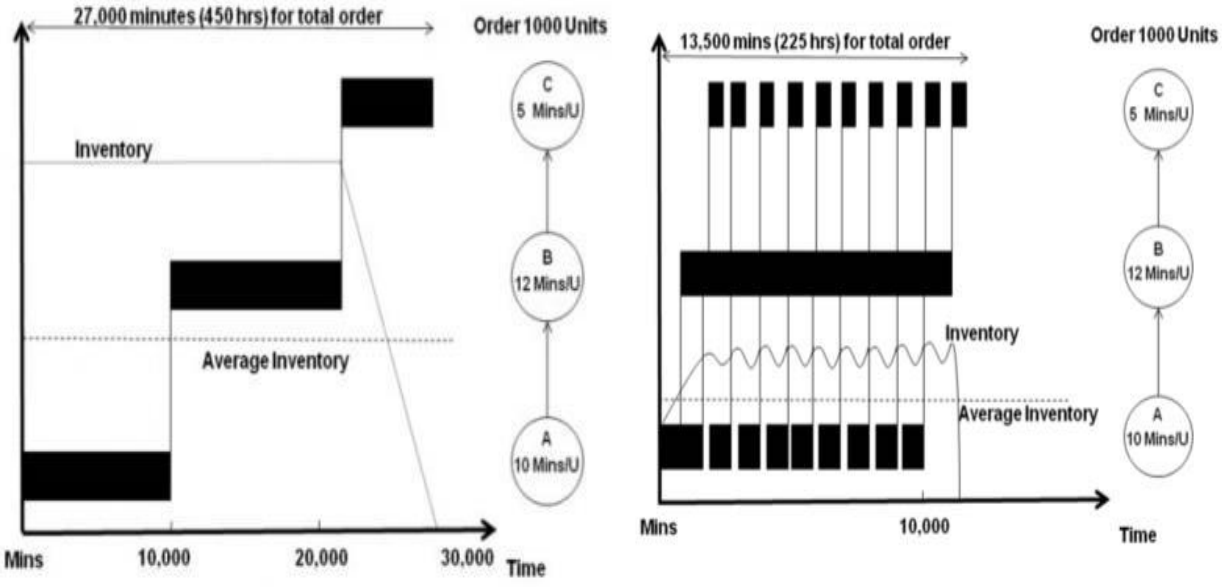
1	1. During a recent visit to the local hospital with your friend who needed to undergo surgery and a short post-operative stay, she could not stop moaning about the amount of forms she had to complete – one for the surgeon, one for the anaesthetist, one for the operating theatre, one for the room booking, etc. She said that she learnt on her MBA that "anything that doesn't add value is a waste" and that all these forms repeating the same information are a waste of time and don't add any value to her as the customer. How would you best describe the situation? • "Quality at source" here is relied upon to make sure that the information is captured correctly – i.e. the best person to provide the information is the patient. • This is a classic case of "over processing" waste and can easily be addressed through a centralised data base accessed by each stakeholder. • Although much of the base information (patient name, etc.) is the same, there could be some specialist input required by each function. • Personal information must be protected so cannot be shared across stakeholders. • The risk of getting the information wrong is too large for the hospital.	4

2	2. It is said that "*It's easier to act your way into a new way of thinking, than think your way into a new way of acting."?* How does this relate to Lean Thinking? a. It is all about "learning by doing" and "Going to Gemba" instead of classroom training. b. People make sense of their experiences, especially those experiences in which they actively engage in making things, doing and/or exploring the world. c. Putting new knowledge and skills into practice, i.e. sequence of -> training, performing under supervision, performing without supervision, training others. d. All of the above e. None of the above	4

3	3. Shigeo Shingo once said "5S should be applied everywhere in the world, except in the home". What is the likely reason for him to have made this statement? a. In 5S when "Sorting", we would remove unused/unwanted items. In the home, this could be a sentimental issue or perhaps costly if one day it is needed again. b. His wife was an artist and required freedom of expression without constraints. c. He was merely testing his audience to fully understand 5S d. It is a "work versus life balance" issue e. People need exercise, so we should not make the home efficient	4

4	4. What is an important element for building learning into a quality assurance system? • Time to detect • Time to correct • Quality of the feedback / Information • None of above • All of the above	4
5	5. Below are 2 scenarios of 3 interactive constraints: For scenario 1, the capability of each of the three processes is either 6 or 14 per hour with equal probability of each, giving an average of 10 per hour. For scenario 2, the capability A & C is kept at either 6 or 14 per hour with equal probability of each, whilst process B's variability improved with capability either 8 or 12 per hour but also giving an average of 10 hour. • The average system output has already been calculated at 7.0 per hour for each scenario.  Why has the <u>average of the system remained the same</u> despite the improvement, if we know that the average of a system is heavily dependent on the magnitude of the variation of its components?	4

	a) Each process only runs 50% of the time b) The average of a system is dependent on the constraint c) The system does not improve if we reduce the variation of only one process d) There is an error in the calculation above e) None of the above	

6	6. The chart below shows a 3-stage process from A to B to C. The process receives an order to produce 1000 units. In order to improve this situation, your improvement manager changed the batch size from 1000 units to 100 units. Before Improvement (Left) After Improvement (Right)  This is a classic application of Just-in-time and/or Lean thinking, but what <u>cannot</u> be concluded from the improved scenario above: I. Smaller batches and reduced inventory II. Faster Throughput/Lead time III. There are more changeovers IV. The constraint gets utilised sooner V. Lower inventory reduces other wastes (e.g. waiting) Select the most appropriate answer: a) (i) and (ii) b) (iv) and (v) c) (iii) d) (iv) e) (v)	4
7	7. Which of the following best describes the results of total quality control? a) Statistical tests of production identify sources of defects. b) The number of inspection stations is decreased in the production process. c) The product is made right the first time. d) The cost of scrap and rework is below budget. e) All of the above	4

8	8. Which has the most impact on quality? a) Quality at source / Self Inspection b) The Quality Control Function c) Production Planning d) Final Inspection e) None of the above	4
9	9. What is the main purpose of 5S? a) To Clean and Organise b) To create a pleasant working environment c) To make work easier d) To speed up changeovers and work e) To put everything in its place	4
10	10. Hoshin Kanri ensures that the strategic goals of a company drive progress and action at every level within that company. Which is true? (a) It eliminates the waste that comes from inconsistent direction and poor communication. (b) It is both a top-down and bottom-up approach (c) It helps with Performance Management (d) It is essentially a goal alignment and goal attainment process (e) All of the above	4

Examination 2 - Part B

		Total
B	**Part B: Long Questions [20 each] – choose any three (3). (1000 word-limit each)**	60
B1	Your cake business has taken off and you now supply more than 100 cakes per week to 5 retail stores in the city. Due to the availability of shelf space, the retailers have given you additional types of cake to produce and provided you with monthly orders, which have been aggregated to help you:	20

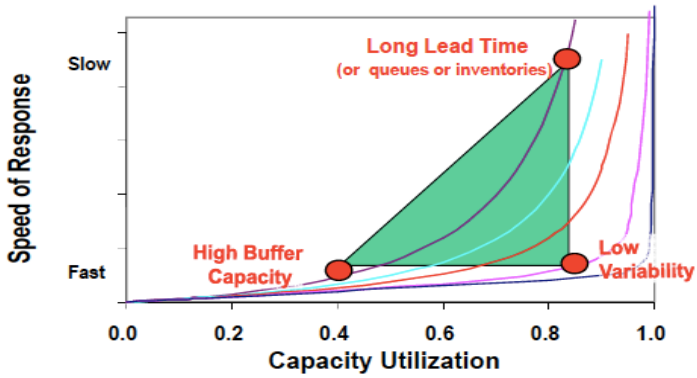
Choc	172
Banana	100
Milk Tart	60
Blue Berry	20
Melba	16
Swiss	12
Pecan	8
Oat	4
Raspberry	4
Black	4
Total	400

- It takes 45 minutes per cake in the oven (which is your constraint) where you can only do 1 cake at a time. So, 0.75hrs x 400 = 300 hours oven time.
- It takes 1 hour to change from one type of cake to another, so doing these in the batches shown would require 9 changeovers.

(a) How would you plan your production? (what principles would you use?)
(b) What are the implications to the retailers?
(c) What changes would you suggest?

B2	Kingman's Equation has been called 'The Equation of Lean'. Switzerland has fewer but longer trains as they claim this would increase punctuality and decrease delays? Explain this using the triangle of basic choices below. What would be compromised by following this approach?	20

Triangle of Basic Choices



B3	Why are hospitals a good example of the importance of 5S? • Using the pictures below describe your answer by considering: i. The 5S process itself applied to the environment ii. Discipline iii. Cleaning Efficiency iv. Making Work Easy • Why do 5S implementations fail?  	20
B4	Describe a major change event in your career using the Kotter Model to describe the effectiveness of the change (i.e. assess each stage). What would you have done differently?	20
B5	"The answer was given by Ford and Ohno. Through their work they, decisively, proved that contrary to the common belief, striving to constantly activate all resources all the time is not a recipe for effective operations". How does this support the approach put forward by Eli Goldratt in the Theory of Constraints? Provide arguments that Ford, Ohno and Goldratt has similar thoughts about the subject. (refer to the article by Eli Goldratt: "Standing on the shoulders of giants")	20