



FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

SUPPLEMENTARY EXAMINATION 2017

<u>PROGRAMME</u>	BTECH: QUALITY
<u>MODULE</u>	CONTINUAL QUALITY IMPROVEMENT IV
<u>CODE</u>	CQI 44-2
<u>DATE</u>	09 JANUARY 2017
<u>DURATION</u>	3 HOURS
<u>TIME</u>	08:00 – 11:00
<u>TOTAL MARKS</u>	100

<u>ASSESSOR</u>	MR N MADONSELA
<u>INTERNAL MODERATOR</u>	DR N SUKDEO
<u>EXTERNAL MODERATOR</u>	MR A INDERLAL

<u>NUMBER OF PAGES</u>	3 PAGES
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INSTRUCTIONS TO CANDIDATES:

- Please answer all questions.
- Calculators are allowed
- Question papers must not be handed in.
- This is a closed book assessment.
- Read the questions carefully and answer only what is asked.
- Number your answers clearly.
- Write neatly and legibly.
- Structure your answers by using appropriate headings and sub-headings.
- The general University of Johannesburg policies, procedures and rules pertaining to written exam apply.

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CASE STUDY

THE MONSTRO

You are quality manager for the Computer Division of Monstro Systems, Inc., a large electronics company. The Computer Division was once BRANE, an independent company which Monstro acquired in order to enter the computer business. Shortly after BRANE became a division of Monstro, the general manager (the former owner) resigned. He was replaced by Mr. Grady, who had been head of Monstro's Semiconductor Division. Soon thereafter, Mr. Grady brought you, his former quality manager, into the Computer Division. It became your job to introduce an appropriate quality system. During the past three years, you have done an heroic job of improving quality of components purchased from suppliers, of setting up process controls to improve Production Department performance, and of setting up inspection and test procedures. There is agreement that what goes out the door now does meet the specifications. But you are hearing news of a field problem--downtime of the computers. Apparently, the causes are due to field operating conditions being different from factory test conditions. Also, to fix these troubles would require engineering changes in the product specifications, in the test equipment, and in the test specifications. It is not clear whether the downtime of Monstro's computers is any worse than that of competitors, but your Sales Department is unhappy anyhow. The main pressure has been on the Engineering Department to find ways to improve the product. The engineers have already come up with some design changes. However, the factory has been dragging its feet on making these changes effective ("it will increase our costs and slow down our deliveries"). The Customer Services Department is also dragging its feet on making these changes effective (Our budget can't handle so many changes"). Last week you attended a seminar on Management of Quality. Some of the experts there, as well as other attendees, argued that a quality manager should take the initiative to coordinate the work of all departments in all reliability matters. At that time, it sounded like a good idea for the company (and, incidentally, for the importance of your own department). Now that you are back in your office, taking the initiative gives you some pause. Actually, no one has invited you to get into this downtime problem. Moreover, it's a mess and looks like someone will be in trouble before it is straightened out. So you sense that, if you take the initiative to get into this arena, you could become one of the casualties.

QUESTION 1

- 1.1 According to the case study you are required to introduce an appropriate quality system. Can you explain what is meant by the term strategic quality management? (6)
- 1.2 How would you develop an effective quality risk assessment and plan the assessment? (16)
- 1.3 The case study shows differing departmental perspectives on addressing this problem. How would you address these challenges to ensure that all departments are on board? (6)
- 1.4 How would apply the Malcolm Baldrige National Quality Awards Criteria to improve overall performance of Monstro company (14)
- 1.5 Experts believe that market research in quality ("Voice of the customer") is imperative to evaluate marketing actions.
- a) What cardinal questions would you ask? (12)
- b) In conducting market research, what principles will form your basic? (12)
- 1.6 Finally, you have developed the strategies, how would explain the role of leadership to implement the strategies? (10)

[76 MARKS]

QUESTION 2 [THEORY]

- 2.1 Ski Boards, Inc., wants to adopt the design and development as a process technique. Can you explain the several key issues emerging when design and development is viewed as a process? (10)
- 2.2 What approaches would you use to improve a design? (14)

[24 MARKS]

[TOTAL MARKS 100]