UNIVERSITY OF JOHANNESBURG

FACULTY OF SCIENCE

DEPARTMENT OF QUALITY & OPERATIONS MANAGEMENT
DEPARTMENT OF FOOD TECHNOLOGY
NATIONAL DIPLOMA IN FOOD TECHNOLOGY

MODULE FTN3BFP
FOOD PRODUCTION III
CAMPUS **DFC**

DECEMBER EXAMINATION 2016

DATE: 21/ 11/ 2016 **TIME: 08:00 AM**

ASSESSORS **DR. B. DLAMINI**
MR N.S. MADONSELA

INTERNAL MODERATOR **MS D. MATCALFE**
DR P. KHOLOPANE

EXTERNAL MODERATOR **PROFESSOR D. KRUGER**

DURATION: 2 HOURS **TOTAL MARKS: 100**

NUMBER OF PAGES: 4 PAGES.

INSTRUCTIONS:

THIS QUESTION PAPER CONSISTS OF **TWO** SECTIONS: **SECTION A**: OPERATIONS MANAGEMENT AND **SECTION B**: FOOD LEGISLATION.

1. Answer ALL questions.
2. Ensure your student number appears on all material you submit.
3. Questions may be answered in any sequence but **sub-sections must be answered together.**
4. Calculators are permitted (Only one per student)

REQUIREMENTS: 2 ANSWER SCRIPTS PER STUDENT (1 PER SECTION)

SECTION A: OPERATION MANAGEMENT (ASSESSOR: MR N.S. MADONSELA)

INSTRUCTIONS:

1. Answer in a separate examination book and clearly mark 'OPERATIONS MANAGEMENT'.
2. Round off to three decimal places**.**

QUESTION 1

1.1 How would you describe the reasons domestic business operations decide to change to some form of international operation. (12)

1.2 Quality function deployment (QFD) refers to both (1) determining what will satisfy the customer and (2) translating those customer desires into the target design. One of the tools of QFD is the house of quality. How would you build the house of quality? (14)

1.3 Can you explain three reasons why quality is important? (6)

1.4 The manager of Sara James Bakery now needs to increase production of the increasingly popular *Deluxe roll*. For a good capacity decision, what would you recommend for capacity considerations? (8)

[40 MARKS]

QUESTION 2

The weights of boxes of Nutrific cereal are sampled each hour from a mass production. The production manager wants to set control limits that include 95.82% of the sample. Therefore, determine the control limits, plot the control chart and indicate the samples that are out of control.

Sample	Weight of sample ounces
1	17
2	13
3	16
4	16
5	15
6	14
7	17
8	18
9	15
10	16

[20 MARKS]

SECTION B: LEGISLATION (ASSESSOR: DR B.C. DLAMINI)

QUESTION 1

a) The declaration of allergenic substances in food has become important nowadays. Define an allergen and discuss the requirements for labelling of common and uncommon allergens as stipulated in R. 146 of 2010. (10)

b) Define vegetarianism and discuss the requirements of the Regulations Relating to the Labelling and Advertising of Foodstuffs (R 146 of 2010) on making vegetarian claims. (5)

[15 MARKS]

QUESTION 2

Current developments in global food safety has resulted in the introduction of private food safety standards. Give your understanding of private food safety standards and briefly discuss two such standards.

[10 MARKS]

QUESTION 3

Write summaries of the following Acts/ or Regulations and indicate the government department that is responsible for its administration.

a) Meat Safety Act (Act 40 of 2000) (5)

b) Agricultural Product Standard Act (Act 119 of 1990) (5)

c) Regulations Relating to the Reduction of Sodium in Certain Foodstuffs and Related Matters (R. 214 of 2013) (5)

[15 MARKS]

TOTAL MARKS: 100

Formulae Sheet

Equation: $F_t = F_{t-1} + \alpha(A_{t-1} - F_{t-1})$

Where

F_t = new forecast
F_{t-1} = previous forecast
α = smoothing (or weighting) constant ($0 \leq \alpha \leq 1$)
A_{t-1}= previous period's to derive demand

$$\check{y} = a + bx$$

$$b = \frac{\sum xy - n\bar{x}\check{y}}{x^2 - nx^2}$$

$$a = \check{y} - b\bar{x}$$

$$S_{yx} = \frac{\sqrt{\sum y2 - a\sum y - b\sum xy}}{n - 2}$$

$$\text{Upper control limit (UCL)} = \bar{\bar{x}} + z\sigma_{\bar{x}}$$

$$\text{Lower control limit (LCL)} = \bar{\bar{x}} - z\sigma_{\bar{x}}$$

$$\text{Lower control limit } (LCL_R) = D_3\bar{R}$$

$$\text{Upper control limit } (UCL_R) = D_4\bar{R}$$