UNIVERSITY
— OF —
JOHANNESBURG

FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

DEPARTMENT	:	ACADEMIC SUPPORT UNIT
PROGRAMME	:	FOUNDATION COURSE
SUBJECT	:	OPERATIONS MANAGEMENT 1A (BPJ1A00)
DATE	:	27 NOVEMBER 2017 EXAMINATION
DURATION	:	2 HOURS (8:30H – 10:30H)
TOTAL MARKS	:	100 MARKS
EXAMINER	:	MS E N-ANYADIEGWU
MODERATOR	:	MR S MUKWAKUNGU
NUMBER OF PAGES	:	3

INSTRUCTIONS TO CANDIDATES:
- Answer ALL questions.
- Question paper must be handed in.
- This is a closed book assessment.
- Leave margins and spaces between the questions.
- Show all your calculations.
- Unless otherwise indicated, express your answers correct to one (1) decimal place.
- Where appropriate, indicate the units of your answer. (e.g. Hour, R)
- Write neatly and legibly
- NOTE: Marks will be awarded for theoretical knowledge, application of the theory and use of relevant examples.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this examination.

QUESTION 1 [30]

1.1 With the aid of a well-annotated diagram discuss in details the four stages of a product life cycle. Provide the features that characterise each stage. (20)

1.2 Discuss the *three* factors that are critical to the development of a company's long term plan. (10)

QUESTION 2 [30]

2.1 Provide *four* reasons why location planning is important. (4)

2.2 Discuss *eight* factors to consider in a region/community location decision. (16)

2.3 In relation to location decisions, explain the following terms; also provide two examples for each. (10)

   (a) Clustering

   (b) Ethics

QUESTION 3 [20]

A firm is considering three capacity alternatives: A, B, and C. Alternative A would have an annual fixed cost of R100 000 and variable costs of R22 per unit. Alternative B would have annual fixed costs of R120 000 and variable costs of R20 per unit. Alternative C would have fixed costs of R80 000 and variable costs of R30 per unit. Revenue is expected to be R50 per unit.

(3.1) Calculate the break-even quantity for each alternative; which alternative has the lowest break-even quantity? (7)

(3.2) Analyze the three alternatives to find out which alternative will produce the highest profits for an annual output of 10 000 units? (7)

(3.3) Analyze the three alternatives to find out which alternative would require the

lowest volume of output to generate an annual profit of R50 000? (6)

QUESTION 4 [20]

4.1 Discuss exhaustively the two categories of cost of quality (10)

4.2 Steven operates a bakery in Orlando East. Because of the size of the store, no new ovens can be added. At the staff meeting, one employee suggested ways to load the ovens differently so that more loaves of bread can be baked at one time, this new process will require that the ovens be loaded by hand, requiring additional man power. This is the only thing to be changed. The bakery makes 15 000 loaves per month with a labour productivity of 23 loaves per labour hour, how many workers will Steven need? (Hint: each worker works 160hours per month). (5)

4.3 What other factors can affect the company's productivity apart from labour? (5)

TOTAL MARKS [100]

END OF ASSESSMENT