FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

DEPARTMENT	:	ACADEMIC SUPPORT UNIT
PROGRAMME	:	FOUNDATION COURSE
SUBJECT	:	OPERATIONS MANAGEMENT 1A (BPJ1A00)
DATE	:	SUMMER SSA EXAMINATION 2015 9 DECEMBER 2015
DURATION	:	(SESSION 2) 11:30 - 14:30
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 What is productivity? Discuss three types of productivity measures, and show using examples the computation of these three measures of productivity. (9)

1.2 List at least six different inputs to a named transformation process of your Choice. (8)

1.3 What are the two major classifications of input resources, provide two examples for each. (6)

1.4 Discuss in details the four stages of a product life cycle. (15)

1.5 Discuss the three factors that are critical to the development of a company's long term plan. (12)

QUESTION 2 [10]

Naomi operates a bakery in Kempton Park. 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 1 500 loaves per month with a labour productivity of 2,344 loaves per labour hour, how many workers will Naomi need? (Hint: each worker works 160hours per month).

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 [10]

4.1 The utilization of a machine is 50%. The machine has a design capacity of 70 units per hour and an effective capacity of 60 units per hour. Find the efficiency of the machine. (6)

4.2 What is the fundamental distinction between design capacity and effective capacity? (4)

QUESTION 5 [24]

5.1.1 Provide *two* reasons why location planning is important. (2)

5.1.2 Discuss *seven* factors to consider in a region/community location decision. (14)

5.2 Discuss exhaustively the two categories of cost of quality (8)

QUESTION 6: ANSWER TRUE OR FALSE [6]

1. An organisation's mission statement is its broad statement of purpose.

2. Once an organisation's mission has been decided upon each functional area within the firm determines its own supporting mission.

3. Operations strategies are implemented in the same way in all types of organisations.

4. An organisations behaviour will be optimised if each of its departments optimises their behaviours independently.

5. A firm whose research and development department generates many ideas for new products is the best example of competing on low-cost leadership.

6. Delivery reliability is best described as a company that delivers more frequently than its competitors

---

END OF ASSESSMENT

TOTAL MARKS [100]