UNIVERSITY OF JOHANNESBURG

FACULTY OF MANAGEMENT

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

SUPPLEMENTARY EXAMINATION

PROGRAMME	:	**DIPLOMA** **OPERATIONS MANAGEMENT** **MANAGEMENT SERVICES** **TRANSPORTATION MANAGEMENT**
SUBJECT	:	**OPERATIONS MANAGEMENT 1A**
CODE	:	**OPM11A1/BPJ11A1**
DATE	:	**18TH JULY 2018**
DURATION	:	**3 HOURS**
TIME	:	**11H30 – 14H30**
TOTAL MARKS	:	**100**
WEIGHTS	:	**50%**
EXAMINER(S)	:	**M. SILASE**
(Internal) MODERATOR	:	**MR S. MOKOELE**
NUMBER OF PAGES	:	**2 PAGES (including cover page)**

INSTRUCTIONS TO CANDIDATES:

- Answer ALL questions.
- 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 two (2) decimal places.
- Where appropriate, indicate the units of your answer. (e.g. Hour, R)
- Number your answers clearly.
- Write neatly and legibly
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

SECTION A – SHORT ANSWER — 40 MARKS

1. Identify and explain the four basic global operations strategies. (6)
2. Describe the three forecasting time horizons and at least two instances for their use. (9)
3. Identify the reasons a local company would like to go global. (6)
4. State any five of the benefits of implementing group technology. (5)
5. Identify any five major concepts of TQM. (5)
6. Name the tools of process analysis and design. (4)
7. Identify five factors that affect location decisions at the site level. (5)

SECTION B – PROBLEMS — 60 MARKS

1. Data collected on the yearly registrations for Six Sigma seminar at the Quality College are shown in the following table:

Year	1	2	3	4	5	6	7	8	9	10	11
Registrations (000)	4	6	4	5	10	8	7	9	12	14	15

a) Develop a 3-year moving average to forecast registrations from year 4 to year 12.
b) Estimate demand again for years 4 to 12 with a 3-year weighted moving average in which registrations in the most recent year are given a weight of 0.6, and the other 2 years are given a weight of 0.2 each.

(18)

2. Marlboro Steel Mill has implemented several programs to improve its productivity. They have asked you to evaluate the firm's productivity by comparing this year's performance with last year's. The following data are available:

	Last Year	This Year
Output	10500 units	12100 units
Labour Hours	12000 @ R10 per hr	13200 @ R12 per hr
Materials	7600 kg @ R5 per kg	8250 kg @ R4 per kg
Capital	R83000	R88000

Compute the productivity as well as the changes in following:

a) Labour
b) Utilities
c) Capital
d) Multifactor (Use three decimal places)

(32)

3.

SEASON	1	2	3	4
Winter	1,400	1,200	1,000	900
Spring	1,500	1,400	1,600	1,500
Summer	1,000	2,100	2,000	1,900
Fall	600	750	650	500

Compute seasonal indices using all of the data. (10)