UNIVERSITY
OF
JOHANNESBURG

FACULTY OF MANAGEMENT

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

MAIN EXAMINATION

PROGRAMME	:	DIPLOMA
		OPERATIONS MANAGEMENT
		MANAGEMENT SERVICES
		TRANSPORTATION MANAGEMENT
SUBJECT	:	OPERATIONS MANAGEMENT 1A
CODE	:	OPM11A1/BPJ11A1
DATE	:	09 JUNE 2018
DURATION	:	3 HOURS
TIME	:	08H30 – 11H30
TOTAL MARKS	:	100
WEIGHTS	:	50%
EXAMINER(S)	:	M. SILASE
(Internal) MODERATOR	:	MR S. MOKOELE
NUMBER OF PAGES	:	5 PAGES

INSTRUCTIONS TO CANDIDATES:

- Answer ALL questions.
- *For section A*, in the scanner sheet provided
- 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: MULTIPLE CHOICE QUESTIONS

[20 MARKS]

Answer this section on the scanner sheets provided. Use a PENCIL and ensure that your name, student number and course appear on the sheet.

1. Operations managers perform the five elements in the management process, which are
   a. plan, direct, update, lead, and supervise
   b. accounting/finance, marketing, operations, and management
   c. organize, plan, control, staff, and manage
   d. plan, organize, staff, lead, and control
   e. plan, lead, organize, manage, and control

2. Operations management is applicable
   a. To the manufacturing sector exclusively
   b. To services exclusively
   c. Mostly to the service sector
   d. Mostly to the manufacturing sector
   e. To all firms, whether manufacturing and service

3. All of the following decisions fall within the scope of operations management except for
   a. financial analysis
   b. design of goods and processes
   c. location of facilities
   d. managing quality
   e. All of the above fall within the scope of operations management.

4. The Ten Critical Decisions of Operations Management include
   a. Layout strategy
   b. Maintenance
   c. Process and capacity design
   d. Managing quality
   e. all of the above

5. The Dulac Box plant produces 500 cypress packing boxes in two 10-hour shifts. Due to higher demand, they have decided to operate three 8-hour shifts instead. They are now able to produce 600 boxes per day. What has happened to production?
   a. It has increased by 50 sets/shift.
   b. It has increased by 37.5 sets/hr.
   c. It has increased by 20%.
   d. It has decreased by 8.3%.
   e. It has decreased by 9.1%.

6. The total of all outputs produced by the transformation process divided by the total of the inputs is
   a. utilization
   b. greater in manufacturing than in services
   c. defined only for manufacturing firms
   d. multifactor productivity
   e. none of the above

7. Which of the following is **true** about business strategies?
   a. An organization should stick with its strategy for the life of the business.
   b. All firms within an industry will adopt the same strategy.
   c. Well defined missions make strategy development much easier.
   d. Strategies are formulated independently of SWOT analysis.
   e. Organizational strategies depend on operations strategies.

8. Which of the following statements about organizational missions is **false**?
   a. They reflect a company's purpose.
   b. They indicate what a company intends to contribute to society.
   c. They are formulated after strategies are known.
   d. They define a company's reason for existence.
   e. They provide guidance for functional area missions.

9. According to the authors, which of the following strategic concepts allow firms to achieve their missions?
   a. productivity, efficiency, and quality leadership
   b. differentiation, cost leadership, and quick response
   c. differentiation, quality leadership, and quick response
   d. distinctive competency, cost leadership, and experience
   e. differentiation, distinctive competency, quality leadership, and capacity

10. The ability of an organization to produce goods or services that have some uniqueness in their characteristics is
    a. mass production
    b. time-based competition
    c. competing on productivity
    d. competing on flexibility
    e. competing on differentiation

11. Which of the following statements best characterizes delivery **reliability**?
    a. a company that always delivers on the same day of the week
    b. a company that always delivers at the promised time
    c. a company that delivers more frequently than its competitors
    d. a company that delivers faster than its competitors
    e. a company that has a computerized delivery scheduling system

12. Which of the international operations strategies uses import/export or licensing of existing products?
    a. international strategy
    b. global strategy
    c. transnational strategy
    d. multi domestic strategy
    e. none of the above

13. A forecast with a time horizon of about 3 months to 3 years is typically called a
    a. long-range forecast
    b. medium-range forecast
    c. short-range forecast
    d. weather forecast
    e. strategic forecast

14. Which of the following uses three types of participants: *decision makers, staff personnel,* and *respondents*?
    a. executive opinions
    b. sales force composites
    c. the Delphi method
    d. consumer surveys
    e. time series analysis

15. Which of the following is **not** a type of qualitative forecasting?
    a. executive opinions
    b. sales force composites
    c. consumer surveys
    d. the Delphi method
    e. moving average

16. What is the approximate forecast for May using a four-month moving average?

Nov.	Dec.	Jan.	Feb.	Mar.	April
39	36	40	42	48	46

    a. 38   b. 42   c. 43   d. 44   e. 47

17. Which time series model below assumes that demand in the next period will be equal to the most recent period's demand?
    a. naive approach
    b. moving average approach
    c. weighted moving average approach
    d. exponential smoothing approach
    e. none of the above

18. John's House of Pancakes uses a weighted moving average method to forecast pancake sales. It assigns a weight of 5 to the previous month's demand, 3 to demand two months ago, and 1 to demand three months ago. If sales amounted to 1000 pancakes in May, 2200 pancakes in June, and 3000 pancakes in July, what should be the forecast for August? (No decimal places)

    a. 2400   b. 2511   c. 2067   d. 3767   e. 1622

19. Daily demand for newspapers for the last 10 days has been as follows: 12, 13, 16, 15, 12, 18, 14, 12, 13, and 15 (yesterday). Forecast sales for the next day (today) using a two-day moving average.
    a. 14
    b. 13
    c. 15
    d. 28
    e. None of the above

20. The forecasting model that pools the opinions of a group of experts or managers is known as the
    a. sales force composition model
    b. multiple regression
    c. jury of executive opinion model
    d. consumer market survey model
    e. management coefficients model

SECTION B   **[50 MARKS]**

1. Martin Manufacturing 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:

Labour
Material
Capital
Multifactor **(Use three decimal places)**   (32)

2. 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 year 4 to 12 with a 3-year weighted moving average in which registration in the most recent year are given a weight of 2 and the other 2 years are given a weight of 1 each.   (18)

SECTION C   **[30 Marks]**

Weekly sales of copy paper at Cubicle Suppliers are in the table below.

WEEK	SALES CASES
1	17
2	21
3	27
4	31
5	19
6	17
7	21

a) Compute a forecast using two- period moving average and exponential smoothing with a smoothing constant of 0.6.   (11)

b) Establish the more accurate model using MAD error measuring technique and provide an explanation for your answer.   (19)