



UNIVERSITY  
OF  
JOHANNESBURG

**FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT  
EXAM**

**DEPARTMENT** : **QUALITY AND OPERATIONS MANAGEMENT**  
**MODULE** : **OPERATIONS MANAGEMENT 1B**  
**CODE** : **BPJ1B00/BPJ1BY1**  
**DATE** : **27 NOVEMBER 2017**  
**DURATION** : **3 HOURS**  
**TIME** : **08:30 – 11:30**  
**TOTAL MARKS** : **100**

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**ASSESSOR** : **MS K MUSHAVHANAMADI**

**INTERNAL MODERATOR:** **MS J MHLANGA**

**NUMBER OF PAGES** : **3 PAGES**

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**INSTRUCTIONS TO CANDIDATES:**

- Answer ALL questions.
- This is a closed book assessment.
- Leave margins and spaces between all questions.
- 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 assessment.

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**SECTION A: FORECASTING**

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**29 MARKS**

1. What is the forecast for July based on a weighted moving average applied to the following past demand data and using the weights: 4, 3, 2 (largest weight is for most recent data)? (7)

Jan.	Feb.	March.	April.	May.	Jun
37	36	40	42	47	43

2. A management analyst is using exponential smoothing to predict merchandise returns at an upscale branch of a department store chain. Given an actual number of returns of 154 items in the most recent period completed, a forecast of 172 items for that period, and a smoothing constant of 0.3, what is the forecast for the next period? How would the forecast be changed if the smoothing constant were 0.6? (5)

3. Weekly sales of copy paper at Cubicle Suppliers are in the table below. Compute a three-period moving average and a four-period moving average for weeks 5, 6, and 7. Compute MAD for each forecast. Which model is more accurate? Forecast week 8 with the more accurate method. (17)

Week	Sales (cases)
1	17
2	21
3	27
4	31
5	19
6	17
7	21

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**SECTION B: JUST IN TIME**

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**32 MARKS**

1. Discuss the goals of JIT partnerships (12)
2. Briefly discuss 5Ss? Why does the list of the 5Ss sometimes have seven elements? (20)

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**SECTION C: LAYOUT STRATEGIES**

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**14 MARKS**

1. Identify the seven fundamental layout strategies. Describe the use of each one very briefly. (14)

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**SECTION D: SUPPLYCHAIN MANAGEMENT**

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**15 MARKS**

1. How are outsourcing and vertical integration related? Can a single firm successfully do both? (15)

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**SECTION E: MAINTENANCE AND RELIABILITY**

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**10 MARKS**

1. Explain the Implementation of Preventive Maintenance (10)

**GOOD LUCK!!!**