



# FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

2014 SUPPLEMENTARY EXAMINATION

## DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

**PROGRAMME:** ND MANAGEMENT SERVICES  
ND OPERATIONS MANAGEMENT

**MODULE** ORGANISATIONAL EFFECTIVENESS 1B

**CODE** OEF11B2

**DATE** : SUMMER SSA EXAMINATION 2014  
1 DECEMBER 2012

**DURATION** : (SESSION 1) 08:00 - 11:00

**TOTAL MARKS** 100

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**EXAMINER** MS TM. NEMARUMANE

**INTERNAL MODERATOR** MR V. LUKONGA

**NUMBER OF PAGES** 6 PAGES

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### **INSTRUCTIONS TO CANDIDATES:**

- There are five question asked
- Question papers must be handed in.
- Round off to the second decimal place
- This is a closed book assessment.
- Read the questions carefully and answer only what is asked.
- Number your answers clearly.
- Write neatly and legibly.
- Structure your answers by using appropriate headings and sub-headings.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

**QUESTION 1**

- 1.1 In the process of setting standards it may be necessary to use work measurement. Discuss any five reasons for using work measurement. (10)
- 1.2 Define Time Study and Explain the Basic Time Study Equipment (10)
- [20]**
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**QUESTION 2**

- 2.1 Discuss the 8 steps in sequence, involved in making a time study. (16)
- 2.2 List and explain any four types of elements. (4)
- [20]**
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**QUESTION 3**

- 3.1 There are seven steps involved in designing a form, with this in mind, provide details of the seven steps and further provide practical examples for your answer. (14)
- 3.2 Explain the three factors consisted in form control. (6)
- [20]**
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**QUESTION 4**

Calculate the Ratings for the following Observed times:

| Element no | Rating | Observed Time | Element no | Rating | Observed Time |
|------------|--------|---------------|------------|--------|---------------|
| 1          |        | 37.64         | 1          |        | 40.63         |
| 2          |        | 37.83         | 2          |        | 40.82         |
| 3          |        | 40.23         | 3          |        | 43.17         |
| 4          |        | 40.38         | 4          |        | 43.31         |
| 5          |        | 40.52         | 5          |        | 43.49         |
|            |        |               |            |        |               |
| 1          |        | 49.61         | 1          |        | 34.69         |
| 2          |        | 49.78         | 2          |        | 34.89         |
| 3          |        | 51.98         | 3          |        | 37.24         |
| 4          |        | 52.38         | 4          |        | 37.39         |
| 5          |        | 52.56         | 5          |        | 37.54         |

**[10]**

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**QUESTION 5**

The 6<sup>th</sup> Element is a foreign element.

5.1 Use the provided FORMS/SHEETS to calculate the following:

- 5.1.1 Total Basic Time (3)
  - 5.1.2 Element basic time (6)
  - 5.1.3 Total Representative Basic Time (6)
  - 5.1.4 Allowances (6)
  - 5.1.5 Standard Time & Allowed Time in standard hours (7)
- 5.2 Explain standard time that you attained from your calculations (2)

**Allowances**

Personal needs Allowance 2.1 %

Fatigue allowance 1.3 %

Tool maintenance Allowance 3.1%

Delay allowance 1.2 %

Policy allowance 2.4 %

Work Contingency allowance 1.7 %

[30]

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**Total Marks [100]**

|                      |  |
|----------------------|--|
| Surname and Initials |  |
| Students Number      |  |

**OBSERVATION SHEET**

|                      |                |                           |                             |
|----------------------|----------------|---------------------------|-----------------------------|
| DEPARTMENT;          | Time Finished  | TEBS                      | DATE (yy/mm/dd)             |
| DIVISION;            |                | + TEAS                    | OPERATION NO;               |
| MACHINE DESCRIPTION; | - Time Started | +Obs Time OF all elements | TAKEN BY;                   |
| WORKER: / f          | m              |                           | Elapsed time                |
|                      | = Elapsed Time | = RT                      | Recorded Time               |
|                      |                |                           | Watch Error (ET-RT/ET *100) |

|                       |       |
|-----------------------|-------|
| Element Break Points; | TEBS; |
|                       | TEAS; |
|                       |       |
|                       |       |
|                       |       |
|                       |       |

| Elem no | Rating | Obs Time | Basic Time | Total Basic Time | Elem no | Rating | Obs Time | Basic Time | Total Basic Time |
|---------|--------|----------|------------|------------------|---------|--------|----------|------------|------------------|
| 1       | 100    | 30.01    |            |                  | 1       | 90     | 41.23    |            |                  |
| 2       | 110    | 36.10    |            |                  | 2       | 95     | 40.30    |            |                  |
| 3       | 90     | 41.50    |            |                  | 3       | 100    | 39.90    |            |                  |
| 4       | 120    | 43.90    |            |                  | 4       | 110    | 38.23    |            |                  |
| 5       | 95     | 35.60    |            |                  | 5       | 120    | 42.30    |            |                  |
| 6       |        |          |            |                  | 6       | 110    | 38.50    |            |                  |
| 1       | 95     | 43.20    |            |                  | 1       | 100    | 33.78    |            |                  |
| 2       | 100    | 44.90    |            |                  | 2       | 95     | 37.12    |            |                  |
| 3       | 110    | 45.60    |            |                  | 3       | 120    | 41.23    |            |                  |
| 4       | 100    | 41.43    |            |                  | 4       | 110    | 44.44    |            |                  |
| 5       | 120    | 50.10    |            |                  | 5       | 100    | 45.17    |            |                  |
| 6       | 95     | 46.30    |            |                  | 6       | 90     | 46.12    |            |                  |
| 1       | 110    | 51.23    |            |                  | 1       | 100    | 45.63    |            |                  |
| 2       | 100    | 45.60    |            |                  | 2       | 100    | 46.17    |            |                  |
| 3       | 110    | 44.50    |            |                  | 3       | 110    | 45.98    |            |                  |
| 4       | 120    | 39.71    |            |                  | 4       | 120    | 44.89    |            |                  |
| 5       | 90     | 43.15    |            |                  | 5       | 95     | 47.13    |            |                  |
| 6       | 95     | 48.13    |            |                  | 6       |        |          |            |                  |



**SUMMARY SHEET**

|                             |  |
|-----------------------------|--|
| <b>Surname and Initials</b> |  |
| <b>Students Number</b>      |  |

| Elm no                                 | Type of element | Element Description | Volume | Frequ ency | Element Repres Basic Time |
|----------------------------------------|-----------------|---------------------|--------|------------|---------------------------|
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
|                                        |                 |                     |        |            |                           |
| <b>TOTAL REPRESENTATIVE BASIC TIME</b> |                 |                     |        |            |                           |
| <i>Personal needs Allowance</i>        |                 |                     |        |            |                           |
| <i>Fatigue Allowance</i>               |                 |                     |        |            |                           |
| <i>Rest Allowance</i>                  |                 |                     |        |            |                           |
| <b>BASIC WORK CONTENT</b>              |                 |                     |        |            |                           |
| <i>Work Contingency Allowance</i>      |                 |                     |        |            |                           |
| <i>Tool Maintenance Allowance</i>      |                 |                     |        |            |                           |
| <i>Working Allowance</i>               |                 |                     |        |            |                           |
| <b>TOTAL BASIC WORK CONTENT</b>        |                 |                     |        |            |                           |
| <i>Delay Allowance</i>                 |                 |                     |        |            |                           |
| <b>STANDARD TIME</b>                   |                 |                     |        |            |                           |
| <i>Policy Allowance</i>                |                 |                     |        |            |                           |
| <b>ALLOWED TIME</b>                    |                 |                     |        |            |                           |
| <b>ALLOWED TIME (STD. MIN)</b>         |                 |                     |        |            |                           |
| <b>ALLOWED TIME (STD. HR)</b>          |                 |                     |        |            |                           |