

## **GENERAL EDUCATION AND TRAINING CERTIFICATE**

## **NQF LEVEL 1**

## **ABET LEVEL 4 SITE-BASED ASSESSMENT**

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| **LEARNING AREA** | **:** | **MATHEMATICS AND MATHEMATICAL SCIENCES** |
| **CODE** | **:** | **MMSC4** |
| **TASK** | **:** | **ASSIGNMENT** |
| **DURATION** | **:** | **TWO WEEKS** |
| **MARKS** | **:** | **50** |

**This assessment task consists of 6 pages and 1 addendum.**

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| **INSTRUCTIONS AND INFORMATION** |  |  |

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| 1. | Answer ALL the questions in the ANSWER BOOK. |  |  |

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| 2. | Calculators may be used unless stated otherwise. |  |  |

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| 3. | Show ALL your calculations. |  |  |

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| 4. | Write legible and present your work clearly. |  |  |

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| **QUESTION 1** |  |  |

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| 1.1 | Choose the correct word/number/equation from those given in brackets. Write only the word/number/equation next to the question number (1.1.1–1.1.3) in the ANSWER BOOK. |  |  |

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|  | 1.1.1 | The gradient of the line defined by is equal to (-2; 2) |  |  |

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|  | 1.1.2 | The graph below is a/an (increasing; decreasing) graph. |  |  |

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|  | 1.1.3 | The graph of line are (parallel; perpendicular) to the one another. (3 × 1) |  | (3) |

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| 1.2 | The dimensions of the Olympic swimming pool are shown in the diagram below. The pool has a uniform depth. |  |  |

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| 50 *m*  25 *m* |  |  |

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|  | 1.2.1 | The total capacity of the Olympic pool is 1 875 000 *litres*.  What is the volume of the pool in cubic *metres*? |  |  |

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|  | 1.2.2 | Determine the depth of the pool in *metres*. |  |  |

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|  | 1.2.3 | The space around the pool is paved by paving blocks. The uniform width of paved area is 2 *metres*.  Calculate the area of the paved area around the pool.  (3 × 2) |  | (6) |

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| 1.3 | In 2012 Chad le Clos one of the best South African swimmers won the world competition in London by completing the 200 metre butterfly in *minute* and seconds in London.  Round off the time to the nearest second and then calculate the average speed Chad swam for the race in *m/sec*.  Round off the answer to TWO decimal places. |  | (3)  **[12]** |

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| **QUESTION 2** |  |  |

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| 2.1 | Given below M,N ,O, P,Q and R are the VERTICES of FIGURE A. |  |  |

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|  |  | **FIGURE A**  **N**  **O**  **P**  **Q**  **R**  **M**  -1  -2  -3  -4  -5  0  1  2  3  4  **X**  1  2  3  4  5  6  7  8  9  **Y** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  | 2.1.1 | Identify the co-ordinates of the VERTICES and from FIGURE A. |  |  |

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|  | 2.1.2 | Identify the co-ordinates of the image and if FIGURE A is translated units to the right and 3 units upwards. |  |  |

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|  | 2.1.3 | If the co-ordinates of and are ( and respectively, describe the transformation that took place on FIGURE A.  (3 × 2) |  | (6) |

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|  | 2.1.4 | Using the grid given in QUESTION 2.1, rotate FIGURE A, 180clock- wise. Use (0; 0) as the centre of rotation, then give the co-ordinates of the image point |  | (4) |

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|  | 2.1.5 | FIGURE A is increased by a scale factor of 2. Use ADDENDUM (attached) to calculate the perimeter of the new figure .  Submit the ADDENDUM (attached) with the ANSWER BOOK. |  | (2) |

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|  | 2.1.6 | Determine the numerical value of the area of FIGURE A: Area of increased figure. |  | (2)  **[14]** |

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| **QUESTION 3** |  |  |

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| 3.1 | Given the following expression: |  |  |

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|  | 3.1.1 | Simplify the above expression and write it in descending order of degree. |  | (2) |

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|  | 3.1.2 | What type of expression is in QUESTION 3.1.1? |  | (1) |

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|  | 3.1.3 | What is the constant term in simplified expression? |  | (1) |

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|  | 3.1.4 | Calculate the value of the expression if . |  | (3) |

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| 3.2 | The formula converts degrees Fahrenheit to Degrees Celsius.  Determine the following: |  |  |

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|  | 3.2.1 | How many Degrees Celsius will equal ? |  | (2) |

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|  | 3.2.2 | How many Degrees Fahrenheit will equal |  | (3) |

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|  | 3.2.3 | Calculate: if is the same temperature as (2. |  | (3) |

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| 3.3 | Jane is 35 years younger than her mother. Ten years from now her mother will be twice her age. |  |  |

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|  | 3.3.1 | If Jane is years old, how old is her mother now, in terms of? |  |  |

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|  | 3.3.2 | How old, in terms of , will Jane be in 15 years' time? |  |  |

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|  | 3.3.3 | Write an expression for twice Jane's age in 15 years' time. |  |  |

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|  | 3.3.4 | Use the answer in QUESTION 3.3.1 to write an expression for her mother's age in 20 years' time.  (4 × 1) |  | (4) |

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| 3.4 | Draw the diagrams for the following inequalities. |  |  |

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|  | 3.4.1 |  |  | (2) |

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|  | 3.4.2 |  |  | (2) |

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| 3.5 | Determine the equation of the following line:  4 |  | (1)  **[24]** |

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|  | **TOTAL:** |  | **50** |

**ADDENDUM**

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| **NAME AND SURNAME:** |  |

**QUESTION 2.1.5**

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