

## **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** |
| **TOOL** | **:** | **PROJECT** |
| **DURATION** | **:** | **3 WEEKS** |
| **MARKS** | **:** | **50** |

**This assessment tool consists 5 of pages.**

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| **INSTRUCTIONS AND INFORMATION** |  |  |

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| 1. | This task is set on US ID7448 and US ID7464. |  |  |

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| 2. | This task must be completed over a period of 3 weeks. |  |  |

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| 3. | It is important that a class discussion be held and the progress of the learners is monitored at regular intervals. |  |  |

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| 4. | ACTIVITY 1 is marked using a RUBRIC and ACTIVITY 2 is marked using a MEMORANDUM. |  |  |

**QUESTION 1**

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| Marking rubric for QUESTION 1.1–1.4 |  |  |

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| **Act** | **CRITERIA** | **LEVEL** | | | | **MARK** |
|  | | **MARKS**  **0** | **MARKS**  **1–2** | **MARKS**  **3–4** | **MARKS**  **5** |  |
| 1.1 | Relevant pictures with designs of Fibonacci sequence pasted or coloured | No picture, pasted on the A4 or cardboard | Pictures not relevant to Fibonacci sequence | More than two relevant pictures pasted with design shows the design of Fibonacci sequence | Four relevant pictures and clear pictures showing the designs of Fibonacci sequences pasted or coloured. |  |
|  | | **MARK**  **0 – 1** | **MARKS**  **2** | **MARK**  **3** | **MARKS**  **4** |  |
| 1.2 | Explanation relevant to the pictures pasted or traced pictures of Fibonacci sequence | No explanation made based on Fibonacci sequence. | Less explanation about the pictures with relevance to Fibonacci sequence | Explaining more about the pictures relevant to Fibonacci sequence | Clear understanding of picture and Fibonacci sequence |  |
| 1.3 | Definition of the Fibonacci sequence | | **MARK**  **0–1** | **MARK**  **2–3** | **MARKS**  **4** |  |
|  | | | No definition/no example | Definition with 1 example | Definition with 3 examples |  |
| 1.4 | Extending the first 15 terms of Fibonacci sequence, using the correct ratio. | **MARKS**  **0** | **MARKS**  **1–2** | **MARKS**  **3–5** | **MARKS**  **6** |  |
| No terms, or using the correct ratio. | Less than 6 terms or using the correct ratio. | More than 6 terms and dividing by previous term to get the correct term | Extending of all 15 Fibonacci sequence terms and dividing by previous term and to get the correct term. |  |
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**QUESTION 2**

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| 2.1 | C:\Users\NGOBENI TA\Desktop\MMSC1.jpg |  |  |

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|  | 2.1.1 | Completion of 5 rows |  | (5) |

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|  | 2.1.2 | Each number in the Pascal triangle is the sum of the two numbers above it OR  Each term is the sum of the previous two terms. | Correct explanation |  | (2) |

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|  | 2.1.3 | In every row, each number is repeated twice, except the middle number. | 1  Correct explanation |  | (2) |

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|  |  | Diagonal of natural number  Diagonal of triangular numbers  Diagonal of Fibonacci numbers |  | (3) |

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|  |  | Colouring odd numbers  Colouring even numbers |  | (2) |

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|  | 2.1.4 | Triangular numbers are numbers that can be arranged in an equilateral triangle.  **OR**  Triangular numbers are number obtained by adding all positive integers less than or equal to the given positive integers.  **OR**  Any series Of numbers obtained when we add natural numbers from the next term e.g. | Any correct relevant explanation | (2) |

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|  | 2.1.5 | Answer in ADDENDUM A (attached). | Each Correct diagonal lines showing natural, triangular and Fibonacci numbers | (3) |

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|  | 2.1.6 |  | Correct substitution  Correct answer | (2) |

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|  | 2.1.7 | Colouring is in ADDENDUM A.  Colouring odd numbers  Colouring even numbers  The pattern formed is made up of parts that are the same shape as the larger shape, and these in turn are made of up of parts of the same shape and continually repeating. | Colouring of odd numbers  Colouring of even numbers  Correct explanation | (4)  **[20]** |

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