**END TERM 1-2023**

**MATHEMATICS PAPER 2 (121/2)**

 **FORM FOUR**

 **TIME: 2 ½ HOURS**

|  |  |  |  |
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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | Capacity of container  | M1M1A1 | Volume of container |
| **Total**  | **3** |
|  | Last term | M1M1A1 | Expressions for and  |
| **Total** | **3** |
|  |  | M1M1A1 | Removal of square rootCollection of terms in x A0 if ± missing  |
| **Total**  | **3** |
|  |  | M1A1 |  |
| **Total** | **2** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  |  | B1B1M1A1 | cm∠TOP |
| **Total** | **4** |
|  |  | M1A1M1A1 |  |
| **Total**  | **4** |
|  |  | M1M1A1 |  |
| **Total** | **3** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | Amount borrowedTotal instalmentsLet the rate of interest be per month | M1M1M1A1 |  |
| **Total** | **3** |
|  | 1. Phase angle
2. Period
 | B1B1 |  |
| **Total** | **3** |
|  | Hence  | B1B1B1 |  |
| **Total** | **3** |
|  |  | P1C1M1A1 |  |
| **Total** | **4** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  |  | M1M1A1 |  |
| **Total** | **3** |
|  |  | B1B1B1B1 | Bisecting line ABArc radius 2 cm and centre CBisecting angle CDALocating and shading the region  |
| **Total** | **4** |
|  |  | M1M1A1 | Absolute error in the perimeterExpression for percentage errorAccept  |
| **Total** | **3** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
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 | M1M1M1A1 | All logarithms 🗸🗸 addition and subtraction of logarithms🗸 multiplication of logarithms by 2 and division by 3A0 if < 4 decimal places |
| **Total**  | **4** |
|  |  | M1M1A1 |  |
| **Total**  | **3** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Height |  |  |  |  |  |
| 3.0 – 3.9 | 3 | 3.45 |  |  |  |
| 4.0 – 4.9 | 5 | 4.45 |  |  |  |
| 5.0 – 5.9 | 7 | 5.45 |  |  |  |
| 6.0 – 6.9 | 8 | 6.45 |  |  |  |
| 7.0 – 7.9 | 5 | 7.45 |  |  |  |
| 8.0 – 8.9 | 2 | 8.45 |  |  |  |
|  | 30 |  |  |  |  |

1. Standard deviation
2. (i) Ogive

 (ii) Range of height between the 20th and 80th percentilesRange | B1B1B1B1M1A1B1B1B1B1 |  All 🗸All 🗸All 🗸All 🗸AxesCurveIdentification of the percentiles from ogive  |
|  | **Total** | **10** |  |



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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Taxable income
2. PAYE
3. Net Salary
 | M1A1M1M1M1M1A1M1M1A1 | First 2 bandsSecond 2 bandsLast band |
| **Total** | **10** |
|  | 1. (i)

(ii)  1. (i) Value of

    Either (discriminate) Or (ii) Perimeter Dimension metres by metres   | M1M1A1M1M1A1B1M1 |  |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Coordinates of triangle

2b=6Hence 1. (i) Triangles

(ii) Shear, invariant1. (i) triangle drawn

(ii) Matrix, Matrix= | M1A1, B1B1, B1B1B1M1M1A1 |  |
| **Total** | **10** |



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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Table
2. Graphs

1. Using graphs to
2. find the values of for which:
3. determine the values of for which:

and  | B2P1C1P1C1L1B1B1B1 | All values correct (B1 at least 5 values correct)Line drawnAll values 🗸 |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Awuor
2. Annual increment
3. Sum after 11 years
4. Wasonga
 | M1M1A1M1M1A1M1A1M1A1 |  |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. DG and ABCD

Consider ΔGKD1. ABGH and ABCD

Consider ΔGKB1. Volume
 | M1M1A1M1M1A1M1A1M1, A1 |  |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | Either or 1. Area by trapezium rule

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Shaded area 1. Area by integration
 | M1A1M1M1M1, A1M1M1M1A1 |  |
| **Total** | **10** |