**Mathematics Form 4**

**Alternative A.**

**Paper 2**

**121/2**

**Marking Scheme**

|  |  |  |  |
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| **No.** | **Working** | **Marks** | **Comments** |
|  | 2. Truncated values and     Percentage | B1  B1  M1  A1 |  |
|  | **Total** | **4** |  |
|  | - sines and cosines of complimentary angles are equal  Hence | M1  M1  A1 |  |
|  | **Total** | **3** |  |
|  | 1. Phase angle | B1  B1  B1 |  |
|  | **Total** | **3** |  |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. Let                     Hence | B1  M1  A1  B1 |  |
|  | **Total** | **4** |  |
|  | Translate UW on the plane PQRS as PR  Hence the angle between PR and SQ      Obtuse angle | M1  M1  A1 |  | |
|  | **Total** | **3** |  | |
|  |  | M1  A1  B1 |  | |
|  | **Total** | **3** |  | |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | Area scale factor  Let the area of the area of ABCD be square units  square units | M1  M1, A1 |  | |
|  | **Total** | **3** |  | |
|  | P(marks with deviation)=P(AD) or P(BD) | M1  A1 |  | |
|  | **Total** | **2** |  | |
|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Station A | Jan | Feb | Mar | Apr | May | Jun | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | | B1  B1  B1 |  | |
|  | **Total** | **3** |  | |
|  |  | M1  M1, A1 |  | |
|  | **Total** | **3** |  | |
|  |  | M1  M1  A1 | A0 if ± included in the answers | |
|  | **Total** | **3** |  | |

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| **No.** | **Working** | **Marks** | **Comments** |
|  |  | B1  B1  B1 | Bisector of PS or QR  Semi-circle diameter PQ  T marked and labeled | |
|  | **Total** | **3** |  | |
|  | Centre/Mid-point  Radius = 3units | B1  M1  A1 |  | |
|  | **Total** | **3** |  | |
|  |  | B1  M1  A1 |  | |
|  | **Total** | **3** |  | |

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| **No.** | **Working** | **Marks** | **Comments** |
|  |  | B1  B1  B1 |  | |
|  | **Total** | **3** |  | |
|  | cm  Angle BOC- angle at the centre twice angle at the circumference  Shaded area  cm2 | B1  M1  A1 |  | |
|  | **Total** | **3** |  | |
|  | 1. (i) Taxable Income   (ii) Gross Tax            Gross Tax   1. Relief 2. (i)   (ii) Tax bands     |  |  | | --- | --- | | Taxable income  (Ksh. per month) | Tax Rate  (% in each Ksh.) | | Up to 15720 | 10 | | 15721 – 25220 | 15 | | 25221 – 34720 | 20 | | 334721 – 44220 | 25 | | 44221 and over | 30 |   Last band | B1  M1  M1  M1  B1  B1  M1  M1, A1 |  | |
|  | **Total** | **10** |  | |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. Scale diagram      1. (i) Bearing of Nyagot’s house from Atieno’s store.     (ii) distance between Zoe’s house and Lourine’s house  cmkm km   1. (i) Bisecting any 2 sides of triangle NZA   Labeling S  (ii) Distance from Lourine’s house to the store  cmkm | S1  B1  B1  B1  B1  B1, B1  B1  B1  B1 | Given scale used  Locating Nyagot’s house  Locating Zoe’s house  Locating Atieno’s store and completing the quadrilateral | |
|  | **Total** | **10** |  | |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. Along a parallel of latitude   Change in longitude  Distance  km  Along a great circle over the North Pole      km  Difference km  km   1. (i) Distance nm       Longitude of C West  (ii) Time difference    Time at C      hours | B1  M1  M1  M1  A1  M1  M1  A1  M1  A1 |  |
|  | **Total** | **10** |  |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. (i)         (ii)          Either (discriminate)  Or  Last term,   1. Let the common ratio be  and the first term be | B1  M1  M1  A1  B1  M1  A1  B1  M1  A1 |  |
|  | **Total** | **10** |  |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. Ogive 2. XX and YYY   Semi interquartile range ZZZZ   1. Number of students that passed from the axis   Number = 60 – B = C | B1  S2  B1  B1  B1  M1, A1  B1  M1, A1 | Appropriate scales used in both the axes  Plotting all the points  Smooth curve/ogive drawn  For both quartiles identified from the ogive |
|  | **Total** | **10** |  |
|  | 1. Volume   cm3  Capacity litres   1. Time difference 2710 hrs – 2030 hrs = 6 hours 40 minutes   minutes  litres m3  69.3 litres m3  Volume of tank m3    m2   1. Capacity of tank litres   Cost of water    Total cost for the month Ksh. | M1  M1, A1  M1  M1  M1  A1  M1  M1, A1 |  |
|  | **Total** | **10** |  |

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| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. (i) Drawings     drawn    drawn  (ii) and   1. (i) drawn   Let                Let  (ii) ***T*** – reflection along | B1  B1  B1  B1  B1  M1  A1  B1 |  |
|  | **Total** | **10** |  |
| **No.** | **Working** | **Marks** | **Comments** |
|  | 1. (i)     At initial, m/s;        (ii) At  m/s   1. (i) At maximum velocity;       (ii)      metres | M1  M1  A1  M1  A1  M1  A1  M1  M1  A1 |  |
|  | **Total** | **10** |  |