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| **QUESTION 2** | | |
| **Code** | **Points to score** | **Marks** |
| A1  A2  A3  A4 | Value of θ: 55o ≤ θ ≤ 62o , 0 decimal places, check from the trace 1 + ½  Value of d: 55o ≤ d ≤ 62o , 0 decimal places, check from the trace 1 + ½  Substitution into W = 180o - θ - d  Value of W: 58o ≤ W ≤ 62o , correctly calculated, 0 decimal places 1 + ½ | 1½  1½  ½  1½ |
|  |  | **5** |
| B1  B2  B3  B4  B5 | Columnar table of x,α β and α + β @¼.  Units for the columns: (cm), (o), (o), (o) @¼  Values of α decreasing: 34o – 11o @½  Values of β increasing: 9o – 34o @1  Values of (α + β) correctly calculated @¼ | 1  1  4  8  2 |
|  | 3424483 | **16** |
| C1  C2  C3  C4  C5  C6 | Title of the graph: *A graph of (α + β) against x*  Axes: Each axis drawn with an arrow in the increasing +ve direction of the  plotted quantity. Each labeled with the quantity together with its unit. @½  Scales: Uniform, each spanning at least ½ pg, demarcations marked, starting values  indicated ………... ½ + ½  Plotting: Each point plotted as exactly as possible with a sharp pencil using  a dot or cross (no shading), a star is not acceptable. @½  Best curve with a minimum  Value of m correctly read and 39o ≤ m ≤ 41o ⇒ 1 + ½ | ½  1  1  4  2  1½ |
|  |  | **10** |
| D1  D2 | Substitution into μ sin ½W = sin ½(W + m)  N correctly calculated and 1.50 ≤ n ≤ 1.60 to 1 or 2 decimal places | ½  1½ |
|  |  | **2** |
| ***Total = 33*** | | |