**MECS JOINT EXAMINATION**

**TERM 1 APRIL 2023**

**MATHEMATICS**

Form 4

Paper 2

**MARKING SCHEME**

**SECTION I**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **WORKING** | **MARKS** | **GUIDELINES** |
|  |  | M1  M1  M1  A1 |  |
|  |  | 4 |  |
|  |  | B1  M1  A1 |  |
|  |  | 3 |  |
|  |  | M1  A1 |  |
|  |  | 2 |  |
|  |  | M1  M1  A1 |  |
|  |  | 3 |  |
|  |  | M1  A1  B1 |  |
|  |  | 3 |  |
|  | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | y  x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 1 | 0 | 1 | 2 | 3 | 4 | 5 | | 2 | 2 | 1 | 0 | 1 | 2 | 3 | 4 | | 3 | 3 | 2 | 1 | 0 | 1 | 2 | 3 | | 4 | 4 | 3 | 2 | 1 | 0 | 1 | 2 | | 5 | 5 | 4 | 3 | 2 | 1 | 0 | 1 | | 6 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |   P | B1  B1  B1 | Table |
|  |  | 3 |  |
|  | =0 | M1  M1  A1 | determinant = 0  both values✓ |
|  |  | 3 |  |
|  | 1. Centre   =   1. Equation of circle       Equation | B1  M1  M1  A1 | for ✓coordinates of centre |
|  |  | 3 |  |
|  |  | M1  M1  A1 |  |
|  |  | 3 |  |
|  |  | M1  M1  A1 |  |
|  |  | 3 |  |
|  |  | M1  M1  A1 |  |
|  |  | 3 |  |
|  |  | B1  B1  B1 |  |
|  |  | 3 |  |
|  |  | B1  B1  B1 |  |
|  |  | 3 |  |
|  | =  (2dp) | M1  A1  B1 |  |
|  |  | 3 |  |
|  | SLABS: | M1  M1  M1  A1 |  |
|  |  | 4 |  |
|  | and | B1  M1  A1 |  |
|  |  | 3 |  |

**SECTION II**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Comparing the coefficients**  c) | B1  B1  B1  M1  M1  M1  A1  B1  B1  B1 |  |
|  |  | 10 |  |
|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |  |  |  |  |  | 225 |  | |  |  |  |  |  | 100 |  | |  |  |  |  |  | 25 |  | |  |  |  |  |  | 0 |  | |  |  |  |  |  | 25 |  | |  |  |  |  |  | 100 |  | |  |  |  |  |  | 225 |  | |  |  |  |  |  |  |  |  1. 50th student | B1  B1  B1  B1  M1  A1  M1  A1  M1  A1 |  |
|  |  | 10 |  |
|  | , | B2  M1  M1  M1  M1  A1  M1  M1  A1 |  |
|  |  | 10 |  |
|  | 1. (i) | B1  M1  A1  M1  M1  A1  M1  A1  B1  B1 |  |
|  |  | 10 |  |
|  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | X | 0° | 30° | 60° | 90° | 120° | 150° | 180° | 210° | 240° | 270° | 300° | 330° | 360° | | -cos x | -1 | -- 0.87 | -0.5 | 0 | 0.5 | 0.87 | 1 | 0.87 | 0.5 | 0 | -0.5 | -0.87 | -1 | | Sin ( x - 30°) | -0.5 | 0 | 0.5 | 0.87 | 1 | 0.87 | 0.5 | 0 | -0.5 | -0.87 | -1 | -0.87 | -0.5 |   mso64470 | B2  M1  S1  P2  C2  B1 B1  B1 |  |
|  |  | 10 |  |
|  |  | M1  A1  M1A1  M1A1  M1  A1  M1A1 |  |
|  |  | 10 |  |
|  | ) | M1  A1  M1  A1  M1  A1  M1  A1  M1  A1 |  |
|  |  | 10 |  |
|  | C:\Documents and Settings\Exam\Local Settings\Temporary Internet Files\Content.MSO\2B8B768A.jpg | B1  B1  B1  B1  M1  A1  B1  M1  A1  B1 | Coordinates  ABCD  **A'B'C'D'**  **Describe transformation**  **A''B''C''D''**  **Describing transformation** |
|  |  | 10 |  |