**Step 1**

Compute

**Step 2**

Encrypt

Modular Exponentiation

|  |  |  |
| --- | --- | --- |
| a | e | n |
| 12345 | 53 | 33017 |
|  |  |  |
| 12345 | 53 | 12345 |
| 25570 | 26 |  |
| 22266 | 13 | 7245 |
| 24501 | 6 |  |
| 16924 | 3 | 22259 |
| 32318 | 1 | 24983 |

**Step 3**

Compute

**Step 4**

Compute :

Greatest Common Denominator

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| a | b | q | r | s | t |
| 32640 | 53 | 615 | 45 | -20 | 12317 |
| 53 | 45 | 1 | 8 | 17 | -20 |
| 45 | 8 | 5 | 5 | -3 | 17 |
| 8 | 5 | 1 | 3 | 2 | -3 |
| 5 | 3 | 1 | 2 | -1 | 2 |
| 3 | 2 | 1 | 1 | 1 | -1 |
| 2 | 1 | 2 | 0 | 0 | 1 |
| 1 | 0 |  |  | 1 | 0 |

**Step 5**

Decrypt :

Modular Exponentiation

|  |  |  |
| --- | --- | --- |
| c | d | n |
| 24983 | 12317 | 33017 |
|  |  |  |
| 24983 | 12317 | 24983 |
| 29938 | 6158 |  |
| 4362 | 3079 | 19746 |
| 9252 | 1539 | 6931 |
| 19440 | 769 | 29280 |
| 1018 | 384 |  |
| 12797 | 192 |  |
| 31906 | 96 |  |
| 12692 | 48 |  |
| 29938 | 24 |  |
| 4362 | 12 |  |
| 9252 | 6 |  |
| 19440 | 3 | 23137 |
| 1018 | 1 | 12345 |