**Organization and Architecture Computer**

**Assignment**



By

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Q = 10

M = 12

|  |  |  |
| --- | --- | --- |
| A | Q | M |
| 0000 | 1010 | 1100 |
| 0000 | 0101 | 1100 |
| 1100 | 0101 | 1100 |
| 0110 | 0010 | 1100 |
| 0011 | 0001 | 1100 |
| 1111 | 0001 | 1100 |
| 0111 | 1000 | 1100 |

Q = -10

M = 12

|  |  |  |  |
| --- | --- | --- | --- |
| A | Q | Q1 | M |
| 0000 | 0110 | 0 | 1100 |
| Count = 4 | | | |
| 0000 | 0011 | 0 | 1100 |
| Count = 3 | | | |
| 0100 | 0011 | 0 | 1100 |
| 0010 | 0001 | 1 | 1100 |
| Count = 2 | | | |
| 0001 | 0000 | 1 | 1100 |
| Count = 1 | | | |
| 1101 | 0000 | 1 | 1100 |
| 1110 | 1000 | 0 | 1100 |

Q = -10

M = -12

|  |  |  |  |
| --- | --- | --- | --- |
| A | Q | Q1 | M |
| 0000 | 0110 | 0 | 0100 |
| Count = 4 | | | |
| 0000 | 0011 | 0 | 0100 |
| Count = 3 | | | |
| 1100 | 0011 | 0 | 0100 |
| 1110 | 0001 | 1 | 0100 |
| Count = 2 | | | |
| 1111 | 0000 | 1 | 0100 |
| Count = 1 | | | |
| 0011 | 0000 | 1 | 0100 |
| 0001 | 1000 | 0 | 0100 |

Representing the number below with 32-bit floating point

A. 1110.011101

B. 100000.010001

1110.011101 => 1.110 0111 01 X 200011 = 0 1000 0010 110011101

00000000000000

100000.010001 => 1.00000010001 X 20101 = 0 1000 0100 010001

000000000000