TOPIC

Computers – Section IV – Question 2

QUESTION

$(25.375)_{10}$ is most nearly

(A) $(10011.011)_2$
(B) $(11001.110)_2$
(C) $(11001.011)_2$
(D) $(10011.110)_2$

HINT

Do the conversion of the integer part and the fractional part separately.

SOLUTION

	Quotient	Remainder
25/2	12	$1 = a_0$
12/2	6	$0 = a_1$
6/2	3	$0 = a_2$
3/2	1	$1 = a_3$
1/2	0	$1 = a_4$

$$(25)_{10} = (a_4 a_3 a_2 a_1 a_0)_2 = (11001)_2$$

	Number	Number after decimal	Number before decimal
0.375×2	0.75	0.75	$0 = a_{-1}$
0.75×2	1.5	0.5	$1 = a_{-2}$
0.5×2	1.0	0.0	$1 = a_{-3}$

$$(0.375)_{10} \cong (0.011)_2$$
$$(25.375)_{10} = (11001.011)_2$$

ANSWER

(C)

CONTRIBUTOR

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