Assignment-2

EE1205 : Signals and Systems
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I. Question 11.9.1 (5)

Write the first five terms of the sequence whose n^{th} term is : $a_n = (-1)^{n-1}5^{n+1}$.

II. Solution

The n^{th} term of sequence is: $a_n = (-1)^{n-1}5^{n+1}$
On substituting n = 0, 1, 2, 3 and 4, we get the first five terms as,

1st term : $a_0 = (-1)^{0-1}5^{0+1} = -5$
2nd term : $a_1 = (-1)^{1-1}5^{1+1} = 25$
3rd term : $a_2 = (-1)^{2-1}5^{2+1} = -125$
4th term : $a_3 = (-1)^{3-1}5^{3+1} = 625$
5th term : $a_4 = (-1)^{4-1}5^{4+1} = -3,125$

Hence, the required terms are -5, 25, –125, 625, –3125 .