Assignment-2
EE1205 : Signals and Systems
Indian Institute of Technology Hyderabad

Chirag Garg
(EE23BTECH11206)

I. QUESTION 11.9.1 (5)

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

II. SOLUTION

Parameter	Value	Description
$x(0)$	-5	First term of G.P.
r	-5	Common ratio of G.P.

TABLE 0
GIVEN PARAMETERS

The Z-transform of a sequence $x(n)$ is given by:

$$x(n) = (-1)^{n-1}5^{n+1}u(n) \qquad (1)$$

$$X(Z) = \frac{-5z}{z+5}; \qquad (2)$$

This result is valid for R.O.C.

$$|z| > 5 \qquad (3)$$

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

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

Sequence: x[n] = (-1)^(n-1) * 5^(n+1)