**Question**

Calculate the distinct elements for a given stream and hash function using **Flajolet–Martin algorithm.**

**Data stream - 1,3,2,1,2,3,4,3,1,2,3,1**

**Hash function – 6x+1 mod 5**

**Solution –**

Number of trailing zeros -

h(1)=2=010=1

h(3)=4=100=2

h(2)=3=011=0

h(1)=2=010=1

h(2)=3=011=0

h(3)=4 =100 =2

h(4)=0=000=0

h(3)=4=100=2

h(1)=2=010=1

h(2)=3=011=0

h(3)= 4 =100 =2

h(1)=2=010=1

largest trailing zero i.e. 2 is ‘r’.

number of distinct elements in a stream = 2^r

2^2 = 4.