**Experiment No - 7**

**AIM:** Implementation of GSM Algorithms (A3/A5/A8).

# CODE:

from functools import reduce

Fn = 1 << 22 # globally(publically) available frame number.

def split\_n(num, n):

ones = int('0b' + '1' \* n, 2) lh = ones & num

rh = (num - lh) >> n return lh, rh

def A3(rand, key):

rand\_l, rand\_r = split\_n(rand, 64) key\_l, key\_r = split\_n(key, 64) l\_xor = rand\_l ^ key\_r

r\_xor = rand\_r ^ key\_l

final\_xor = l\_xor ^ r\_xor

res = reduce(int. xor , split\_n(final\_xor, 32)) return res

if name == ' main ':

rand\_no = 340282366920938463463374607431768211456

key = 345282366920998463463374607431768211456

print('Random Number:', rand\_no) print('Key:', key)

print('Output of A3 algorithm:', A3(rand\_no, key))

# OUTPUT :

Random Number: 340282366920938463463374607431768211456

Key: 345282366920998463463374607431768211456

Output of A3 algorithm: 3492679906