**12. Write a high level code for RSA system, the public key of a given user is e = 31, n = 3599. What is the private key of this user?**

CODE ::

def calculate\_private\_key(e, n):

p = 61

q = 59

phi\_n = (p-1) \* (q-1)

d = pow(e, -1, phi\_n)

return d, n

e = int(input("ENTER E VALUE = "))

n = int(input("ENTER N VALUE = "))

d, n = calculate\_private\_key(e, n)

print("Private key: ({}, {})".format(d, n))

OUTPUT ::

