**Ques 9.** Implement product cipher transposition operation.

Ans:-

# Bharat\_Sharma CSC/20/50 Univ\_Roll\_No: 20059570040

def product\_cipher\_transposition(plaintext, key):

key\_length = len(key)

plaintext\_length = len(plaintext)

if plaintext\_length % key\_length != 0:

padding\_length = key\_length - (plaintext\_length % key\_length)

plaintext += ' ' \* padding\_length

plaintext\_length += padding\_length

blocks = [plaintext[i:i+key\_length] for i in range(0, plaintext\_length, key\_length)]

transposed\_blocks = []

for block in blocks:

transposed\_block = [None] \* key\_length

for i, j in enumerate(key):

transposed\_block[j] = block[i]

transposed\_blocks.append(''.join(transposed\_block))

ciphertext = ''.join(transposed\_blocks)

return ciphertext

if \_\_name\_\_ == "\_\_main\_\_":

plaintext = input("Enter the message : ")

key = (2, 0, 1)

ciphertext = product\_cipher\_transposition(plaintext, key)

print(ciphertext)

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