**Practical 6**

Write a program to perform encryption and decryption using Playfair Cipher Technique

* **CODE :-**

def encryption(pt,key):

k = 0

cf=""

while k < len(pt):

i1 = k

i2 = k + 1

k = k + 2

for i in range(5):

for j in range(5):

if pt[i1] == key[i][j] or (pt[0] =='J' and key[i][j] == 'I'):

r1=i

c1=j

elif pt[i2] == key[i][j] or (pt[1] =='J' and key[i][j] == 'I'):

r2=i

c2=j

if r1 == r2 :

cf = cf + key[r1][(c1+1)%5] + key[r1][(c2+1)%5]

elif c1 == c2 :

cf = cf + key[(r1+1)%5][c1] + key[(r2+1)%5][c1]

else:

cf = cf + key[r1][c2] + key[r2][c1]

return cf

def decryption(cf,key):

pt=" "

k = 0

while k < len(cf):

i1 = k

i2 = k + 1

k = k + 2

for i in range(5):

for j in range(5):

if cf[i1] == key[i][j] or (cf[0] =='J' and key[i][j] == 'I'):

r1=i

c1=j

elif cf[i2] == key[i][j] or (cf[1] =='J' and key[i][j] == 'I'):

r2=i

c2=j

if r1 == r2 :

pt = pt + key[r1][(c1-1)%5] + key[r1][(c2-1)%5]

elif c1 == c2 :

pt = pt + key[(r1-1)%5][c1] + key[(r2-1)%5][c1]

else:

pt = pt + key[r1][c2] + key[r2][c1]

return pt

keymatrix = [['M','O','N','A','R'],

['C','H','Y','B','D'],

['E','F','G','I','K'],

['L','P','Q','S','T'],

['U','V','W','X','Z']]

for i in range(5):

for j in range(5):

print(keymatrix[i][j], end = " ")

print()

pt = input("Enter Plain Text = ")

cf = encryption(pt,keymatrix)

print("cipher text = ",cf)

var = decryption(cf,keymatrix)

print("Plain text = ",var)

* **OUTPUT :-**

