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Q4

Ans⇒

```
import math, random
def func OTP():
  x = "0123456789"
  OTP = " "
  for i in range (16):
  OTP = OTP + x [math.floor (random. random ()*10)]
  return OTP
if __name__ == "__main__":
  Print("OTP of 16 digit:", func OTP())
```

Output
OTP of 16 digits : 212 956 5775135770

Q3

Ans

```python
def generateKey(string, key):
    key = list(key)
    if len(string) == len(key):
        return(key)
    else:
        for i in range(len(string) - len(key)):
            key.append(key[i % len(key)])
    return("". join(key))

def encryption(string, key):
    encrypt_text = []
    for i in range(len(string)):

        x = (ord(string[i]) + ord(key[i])) % 26
        x = x + ord('A')
        encrypt_text.append(chr(x))
    return("". join(encrypt_text))


def decryption(encrypt_text, key):
    original_text = []
    for i in range(len(encrypt_text)):
        x = (ord(encrypt_text[i]) - ord(key[i])) % 26
        x = x + ord('A')

    original_text.append(chr(x))
    return("". join(original_text))
if __name__ == "__main__":
```

```
S = "Cryptography"
String = S.upper()
Keyword = "Monarchy"
Key = generateKey(String, Keyword)
encrypt_text = encryption(String, Key)
Print("Encrypted text is :", encrypt_text)
Print("Original / Decrypted Text :", decryption(encrypt_text, Key))
```

```
df encrypt (string, shift):
    cipher = "
    for char in string:
        if char == ' ':
            cipher = cipher + char
        elif char.isupper():
            cipher = cipher + chr((ord(char) + shift - 65) % 26 + 65)
        else:
            cipher = cipher + chr((ord(char) + shift - 97) % 26 + 97)
return cipher

text = "Attack from North"
S = 3
Print ("Original string :", text)
Print ("after encryption :", encrypt(text, S))
```

```
df decrypt (string, shift):
    Plain = "
    for char in string:
        if char == ' ':
            Plain = plain + char
        elif char.isupper():
            Plain = plain + chr((ord(char) - shift - 65) % 26 + 65)
        else
            Plain = plain + chr((ord(char) - shift - 97) % 26 + 97)
return plain
```

```
text = encrypt (text, s)
s = 3
Print("after decryption ", decrypt (text, s))
```

Output –

Original string : Attack from North
after encryption : Dwwdfn iurp Qruwk
after decryption : Attack from North.