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(Information security  
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(TBC 601)

MCQ

Ans 1  $\Rightarrow$  Asymmetric key encryption with sender public key

Ans 2  $\Rightarrow$  Spyware

Ans 3  $\Rightarrow$  An authentication of an electronic record

Ans 4  $\Rightarrow$  Cyber Laws

Ans 5  $\Rightarrow$  Only an alphanumeric

Ans 6  $\Rightarrow$  Idea is same title is different

Ans 7  $\Rightarrow$  Checksum

Ans 8  $\Rightarrow$  The identity of the character is changed while its position remains unchanged.

Ans 9  $\Rightarrow$  both b and c

Ans 10  $\Rightarrow$  none

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Q5 Ans2) # Implementation of encryption & Decryption  
Using Caesar cipher

=> def encryption (Plain, text, key);

encryption = " "

for c in Plain text:

if c.isupper():

c-index = ord(c) - ord('A')

c-shifted = (c-index + key) % 26 + ord('A')

c-new = chr(c-shifted)

encrypted += c-new

def c-islower():

c-index = ord(c) - ord('a')

c-shifted = (c-index + key) % 26 + ord('a')

c-new = chr(c-shifted)

encrypted += c-new



```
def c.isdigit():
```

```
    c-new = (int(c) + key) % 10  
    encrypted += str(c-new)
```

```
else: encrypted += c
```

```
return encrypted
```

```
def decryption(ciphertext, key):
```

```
    decrypted = ""
```

```
    for c in ciphertext:
```

```
        if c.isupper():
```

```
            c-index = ord(c) - ord('A')
```

```
            c-orig-pos = (c-index - key) % 26 + ord('A')
```

```
            c-orig = chr(c-orig-pos)
```

```
            decrypted += c-orig
```

```
        elif c.islower():
```

```
            c-index = ord(c) - ord('a')
```

```
            c-orig-pos = (c-index - key) % 26 + ord('a')
```

```
            c-orig = chr(c-orig-pos)
```

```
            decrypted += c-orig
```

if c is digit(1):

$c - \text{og} = (\text{int}(c) - \text{key}) \% 10$

decrypted += str(c - og)

else:

decrypted += c

return decrypted

Plaintext = "Attack from north"

Ciphertext = encryption(plaintext, 4)

Print("Plaintext message: \n", plaintext)

Print("Encrypted Ciphertext: \n", ciphertext)

decryptedmsg = decryption(ciphertext, 4)

Print("The decrypted message is: \n", decryptedmsg)

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Q. 3 Ans =>

# Vigenere cipher

```
def generatekey(string, key):
```

```
    key = list(key)
```

```
    if len(string) == len(key):
```

```
        return key
```

```
    else:
```

```
        for i in range(len len(string) - len(key)):
```

```
            key.append(key[i % len(key)])
```

```
    return (" " * len(key))
```

# encryption

```
def cipherText(string, key):
```

```
    cipher_text = []
```

```
    for i in range(len(string)):
```

```
        n = (ord(string[i]) + ord(key[i]))
```

```
        n += ord('A')
```



```

        cipher-text.append(chr(n))
    return (" ".join(cipher-text))

# Function for decrypting
def original_text(cipher-text, key):
    orig orig-text = []
    for i in range(len(cipher-text)):
        n = (ord(cipher-text[i]) - ord(key[i]) + 26)
        % 26
        n += ord('A')
        orig orig-text.append(chr(n))
    return (" ".join(orig-text))

# Driver Code
if __name__ == '__main__':
    String = 'Cryptography'
    keyword = "mantch"
    key = generatekey(String, keyword)
    print("Cipher-text: ", cipher-text)
    print("Original/Decrypted text: ",
          original_text(cipher-text, key))

```

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Q.4 Ans  $\Rightarrow$  # import ~~library~~ random as r

# function for OTP generation

def OTPgen():

OTP = ""

for i in range(4):

OTP += str(r.randint(1,9))

Print("Your one time Password is")

Print(OTP)

OTPgen()