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Section → A
Sem → 6
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Subject → Inf Cyber Security

Question - 3

Plain text → Cryptography   key → Monarchy

```
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 cipherText (String , key);
    cipher - text = []

    for i in range (len(string));
        x = (ord (string [i]) + ord (key [i])
            '/. 26
        X += ord ('A')
```

```python
        cipher_text.append(chr(x))
    return ("".join(cipher_text))

def originalText(cipher_text, key):
    orig_text = []
    for i in range(len(cipher_text)):
        x = (ord(cipher_text[i]) - ord(key[i]) + 26) % 26
        x += ord('A')
        orig_text.append(chr(x))
    return ("".join(orig_text))

# driver code
if __name__ == "__main__":
    String = "cyptography"
    key word = "monarchy"
    key = generate key(String, keyword)
    cipher_text = cipherText(String, key)
    print("ciphertext : ", cipher_text)
    print("original / Decrypted Text : ",
          originalText(cipher_text, key))
```

Question-4

OTP

```
import math, random

def generate OTP():

    digits = "0123456789"
    OTP = ""

    for i in range(4):
        OTP += digit (math. floor (random. random
                                   () + 10)]

        return OTP


if __name__ == "__main__":
    print ("OTP of 4 digit:", generate OTP ())
```

Question-5

```python
text = "Attach from North

def encrypt (text, s):
    result = ""

    for i in range (len (text)):
        char = text [i]
        if (char . isupper ()):
            result += chr ((ord (char) + s - 65) %
                    26 + 65)
        else:
            result += chr (( ord (char) + s - 97) %. 26 + 97)
    return result

text = "Attack from north"
s = 3

print ("text: " + text)
print (" shift: " + str (s))
print (" apher : " + encrypt (text, s))

def decrypt (text, s):
    result = ""

    for i in range (len (text)):
```
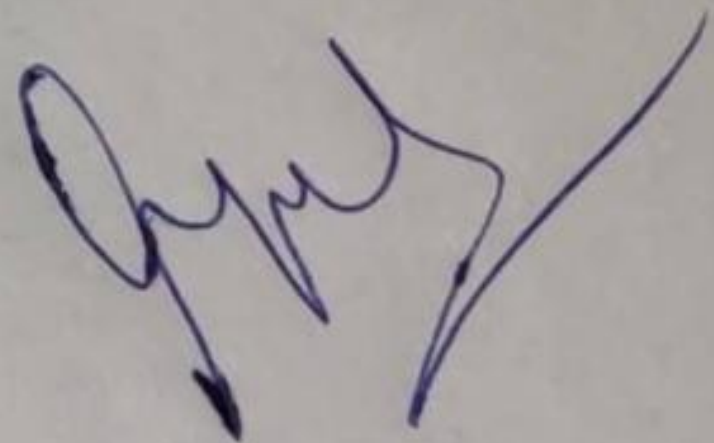
```python
char = text[i]
if (char.isupper()):
    result += chr((ord(char) - s - 65) % 26 + 65)
else:
    result += chr((ord(char) - s - 97) % 26 + 97)

return result

text = "Attack from north"

s = 3

print("cipher:" + decrypt(text, s))
print('shift:' + str(s))
print("text:" + text)
```