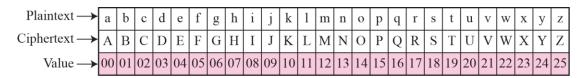
Mock Exam – As part of the seen exam pilot - for weeks 7 – 12

- 5. a) Explain the difference between Symmetric cipher and a-Symmetric cipher. [4]
 - b) Use symmetric ciphers to encrypt message "security" and decrypt message "DVLMNWZ"

[15]

The representation of characters in modulo 26 is described as follows:



The mathematical equations for encryption and decryption can be described as follows:

 $Encryption \ E_{(k)}: i \ ! \quad i+k \ mod \ 26$

Decryption $D_{(k)}$: i! i - k mod 26

i represents the messages (plaintext or cipher), k represents a symmetric key. In this case k=12.

c) The message is placed row-wise in a 2D array (in this case 3x5 matrix) starting at top left. The encrypted message is read out column-wise starting at the bottom right. Write down plaintext and encrypted messages. [6]

D	Е	F	Α	С
	Т		0	S
Т	Α	N		D