

**Note: Answer five questions only**

**Q1/** decipher the following cipher text, which are used two methods for encipherment process, first method is keyword method and the key word ="cryptographic system" and second method is transposition method and the key is= 3142, and the cipher text that obtained = "k d f f k x y n c x g a "

(14 marks)

**Q2/**the security of a substitution cipher generally increase with the key length. In a running – key cipher; give complete examples that show the running key cipher work.

(14 marks)

**Q3/**Decipher the following cipher text=333, where the secret key= {2, 3, 6, 13, 27, 52}, and u=105, w=31 using hard knapsack method.

(14 marks)

**Q4/**Define block cipher, stream cipher and explain the advantage and disadvantage for each one in details

(14 marks)

**Q5/** Decipher the following cipher text which was enciphered using Beaufort cipher text with key= ART,

Cipher text= CDZ ORQ WRH SZA AHP

(14 marks)

**Q6/**Encipher the following message using affine transformation method, where the keys that used are:

Additive key=20, multiplication key=7, the message is "good luck to all"

(14 marks)