

DTU/2K16/ML/13

Q 7) Use the Vigenere cipher with the word 'leg' 'LEG' to encipher the message 'EXPLANATION'.

Ans 7)

Plaintext      E    X    P    L    A    N    A    T    I    O    N

value          4      23   15   11   0   13   0   19   8   14   13

Key            L      E      G      L      E      G      L      E      G      L      E

$K_i$             11      4      6      11   4   6   11   4   6   11   4

$C_i = (P_i + K_i) \pmod{26}$     15      1      21   22   4   19   11   23   14   25   17

C              P          B    V    W    E    T    L    X    O    Z    R

This is the encrypted message:

P B V W E T L X O Z R

DTU/2K16/ML/13

Q 8) Use the Playfair cipher to encipher the message "The key is hidden under the door Pad". The secret key can be made using the word "GUIDANCE".

$K, key = \begin{bmatrix} G & U & I & D & A \\ N & C & E & B & F \\ H & K & L & M & O \\ P & Q & R & S & T \\ V & W & X & Y & Z \end{bmatrix}$

P = THE KEY IS HIDDEN UNDER THE DOOR PAD

i) Adding 'x' between similar characters

THE KEY IS HIDDEN UNDER THE DOOR PAD

ii) Padding extra 'x' to make it even length and splitting in 2

THE KEY IS HIDDEN UNDER THE DOOR PAD

iii) Now, applying Playfair cipher.

PO CL BX DR LH IV IB CH BG LX PO BI LZ LT TG IY

This is the encrypted message.