

4)

PA.

We observe: change in single bit of plain text, effects

Avalanche effect - means small change in plain text ~~text~~ should create significant change in ciphertext

DES is has been proved to be strong with regard to this property.

Plain \rightarrow 0000 0000 0000 0000

Cipher \rightarrow 4789 FD47 CE 82 ASF1

Plain \rightarrow 0000 0000 0000 0001

Cipher \rightarrow 0A4E D5C1 5A63 FEA3

Key used is same

key = 2213 4512 987A
BB23

Although, the two plain text differ only in 1 bit,

ciphertext block differs a lot / significantly.