

Encryption:  $C = P^e \pmod{n} \rightarrow$  Cipher Text

Decryption:  $P = C^d \pmod{n}$

\* Two prime number (Large)  $p$  &  $q$

\*  $n = p \times q$ ;  $z = (p-1) \times (q-1)$

\*  $d$  relatively prime to  $z$

\*  $e$  such that  $\Rightarrow e \times d \pmod{z} = 1$

\* public key:  $(e, n)$

\* private key:  $(d, n)$

\* For Coding  $\rightarrow$

\* Input: Text (Capital P)

$\downarrow$   
number (output — show)

\* Input: # of bits for the large prime #  
min (50 ...)

\* Output: public key & private key

\* output: Encrypted msg

\* Output: Decrypted msg

$\rightarrow$  plain text

\* Cryptography note; its application