Name: Priyanka, Stu id: 20179, CS572(blockchain)

Answer: F

abcdefghijklmnopqrstuvwxyz1234567890

Possible number of keys: 36

$2^4 = 16$, $2^5 = 32$

36 > 32 > 16

➔ So, the Caesar cipher key size is 5

Answer: G

In symmetric key cryptography, each pair of communicating parties needs a unique key to ensure secure communication. For N people, the number of unique pairs can be calculated using the combination formula C(N,2) which is given by:

C(N,2) = N(N-1)/2

This means we need N(N−1)/2 symmetric keys for N people to communicate securely with one another. Each pair of individuals would share one key, allowing them to communicate privately.

For example: If we have n=6

6(6-1)/2= 15 that means we need 15 symmetric keys for 6 people to communicate with one another.

Question:14

Original	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
Maps to																										
Shifted	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q

If K = 9

- o Scenario I
  The messages sent and receive

Cipher text sent and received	What is the plain text?
kxxt	Book
bcdmnwc	student
rwbcadlcxa	instruction

bnldarch	security
sjej	java

- What is the key?

K=9