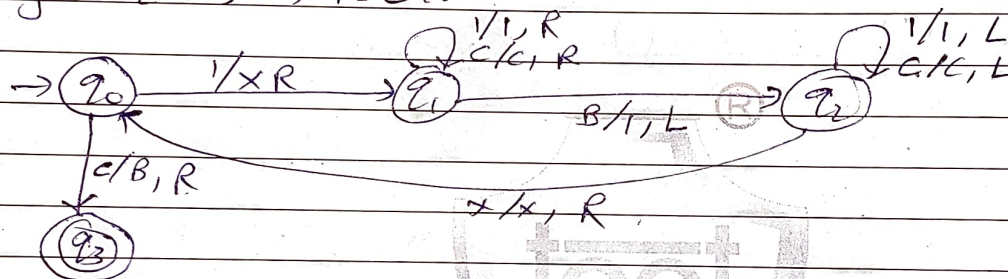


Q.1. For addition we'll follow unary format for input so \$S\$ is given as 1111 or 0000 instead of 101
 Approach :-

Use 1 to represent each bit $1 \rightarrow x$
 Last ^{blank} $n(B) \rightarrow 1$

Input format :-

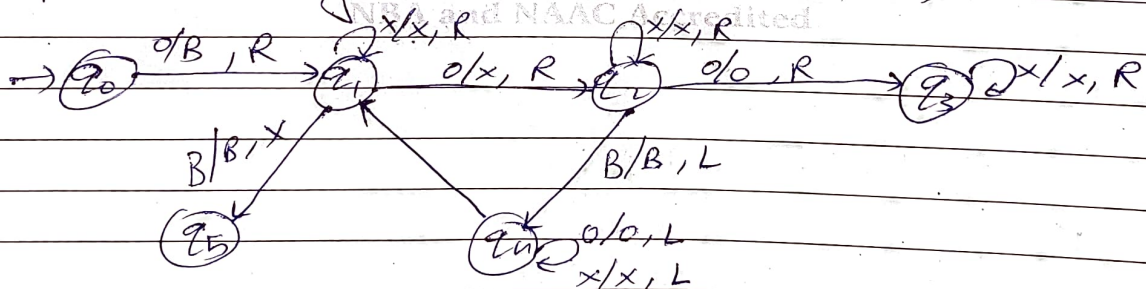
Two numbers separated by c
 Eg. $2 + 3 \rightarrow 10C11$



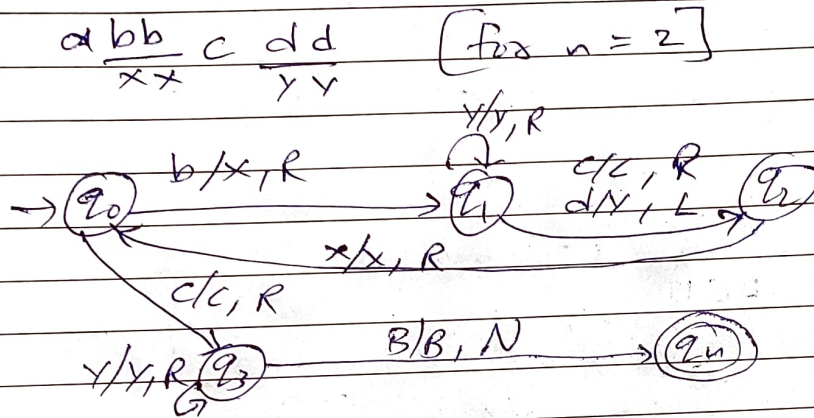
Q.2] $L = \{ 0^{2^n} \mid n \geq 0 \}$

Approach :

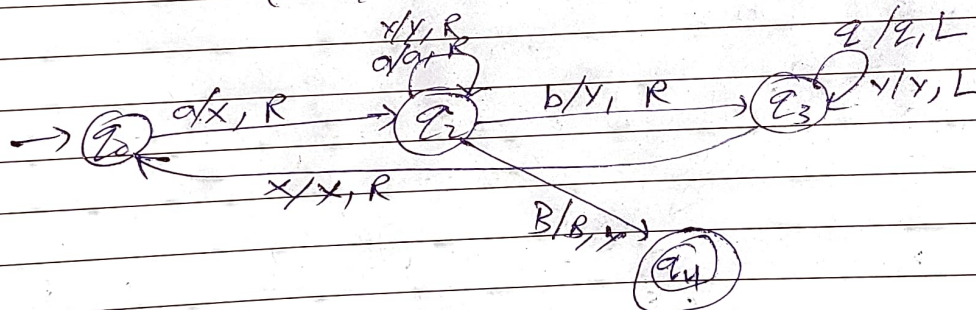
Replace first '0' with blank (B) move right
 Replace every alternate '0' with x.



Q.3. Design a T.M. to accept $ab^n cd^n$



Q.4. Design a T.M.
 $L = \{a^m b^n, n \geq 0, m > n\}$
 $L = \{a, aab, aabb, aaabb\}$

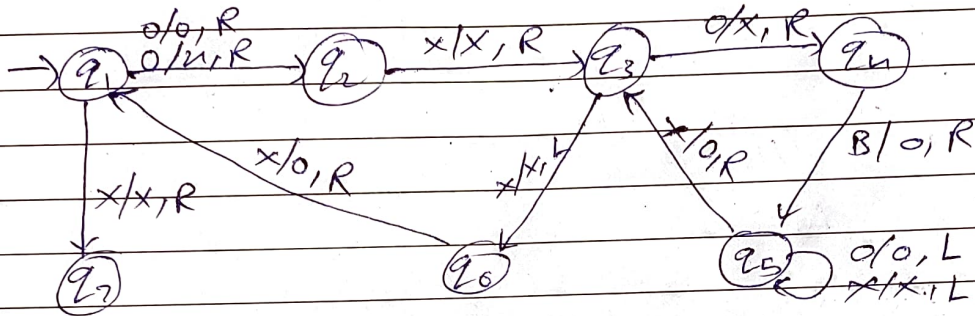


	a	a	a	b	b	State
1st pass	x	a	a	y	b	q3
	x	x	a	y	y	q3
	x	x	x	y	y	q3

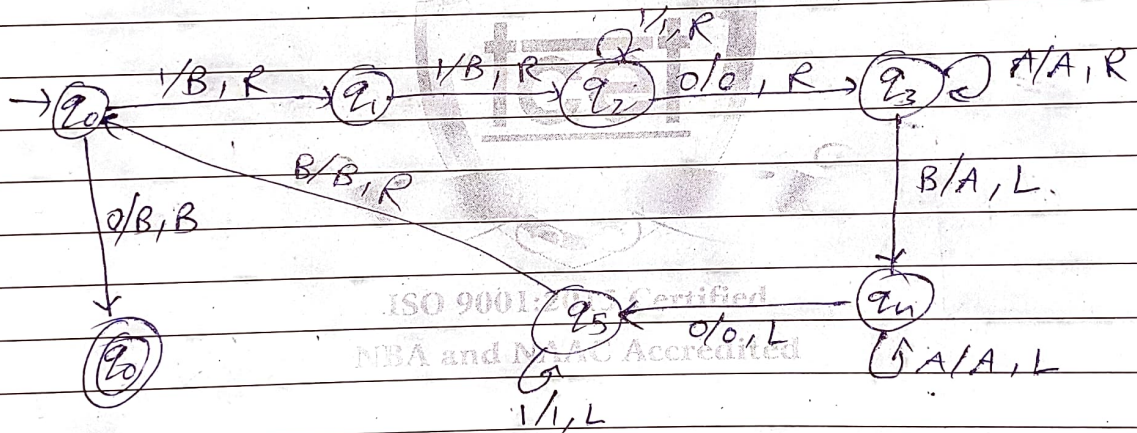
(q2)

$q_2 \rightarrow$ gets blank, string is accepted.

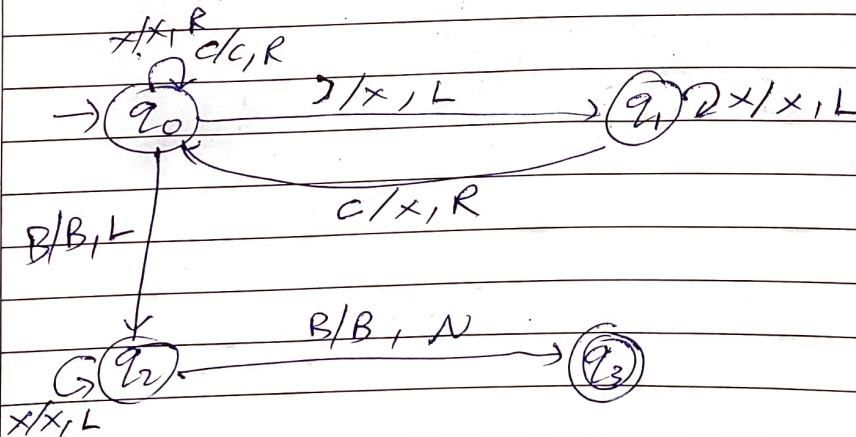
Q.6. $n! \ 0x000x000x00x0000000x0x$
 $n \ 1 \times n \quad n-1 \quad n \times n-1 \quad n-2$



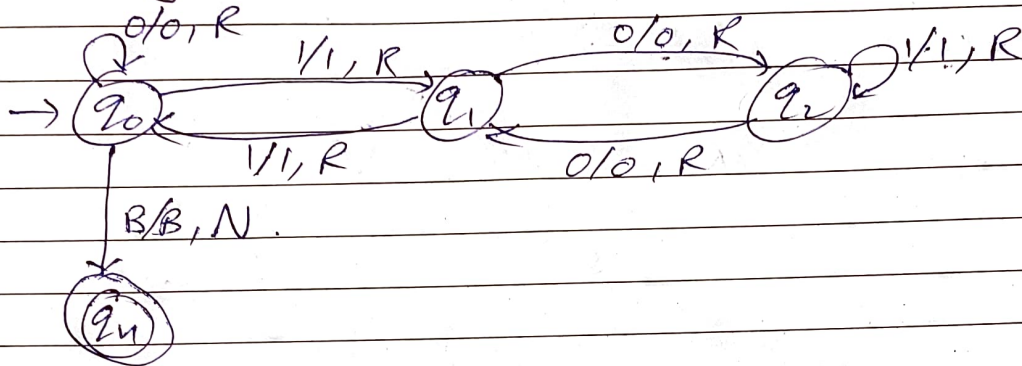
Q.7. $A^5 = AAAAA$



8.



a. Unary no. divisible by 3



10. Input be = 11C1111 GCD = 2.

