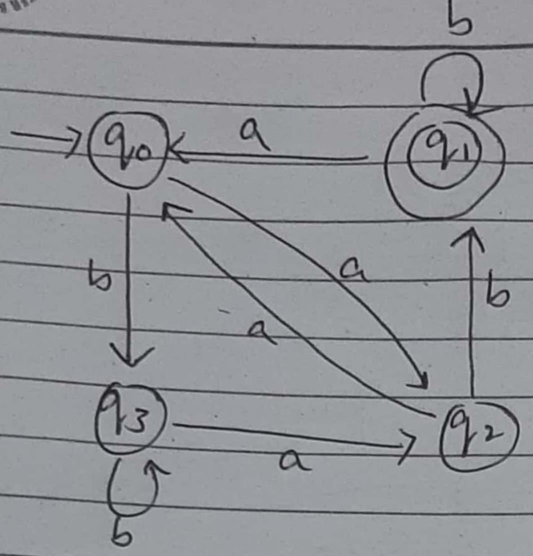
20k-0212

Continuation Sheet ____ of ____

15/25

1)



Transition Graph

	a	b
→ q0	q2	q3
q1	q0	q1
q2	q0	q1
q3	q2	q3

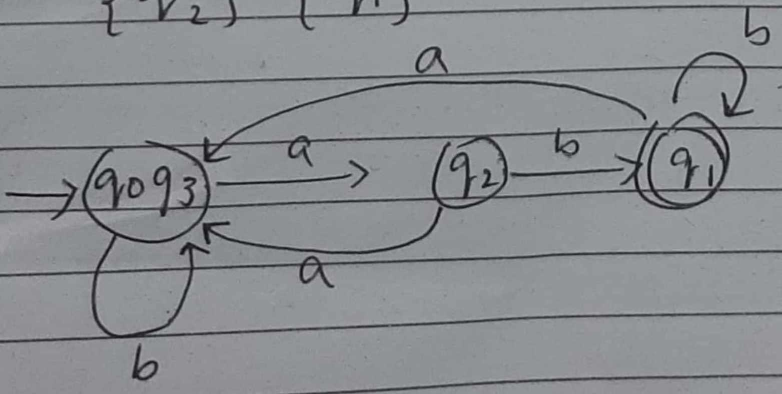
5

#1

{q0, q2, q3} {q1}

{q0, q3}

{q2} {q1}



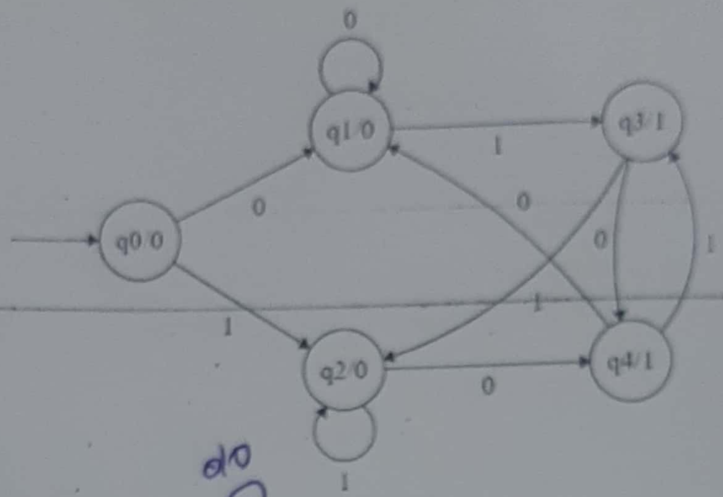
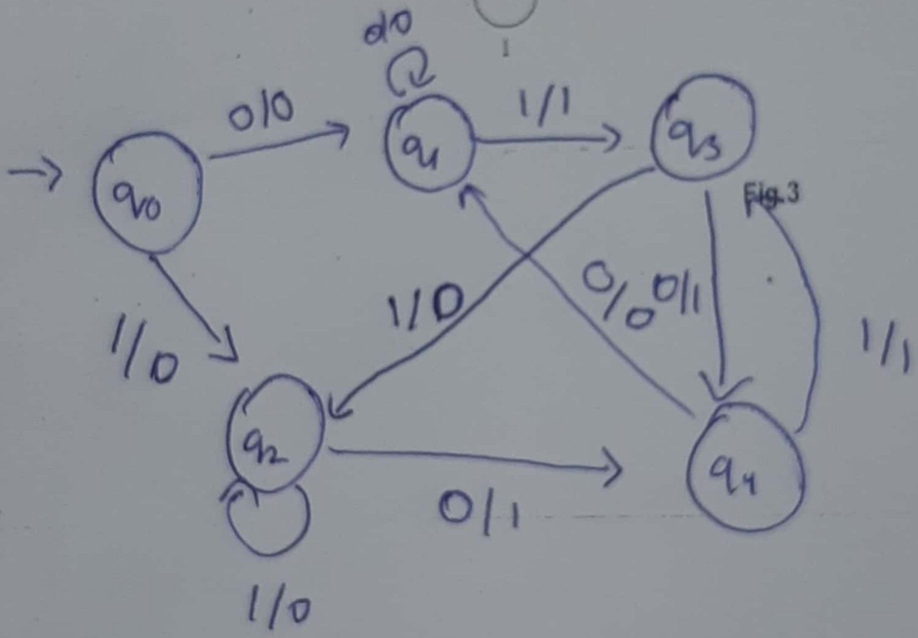
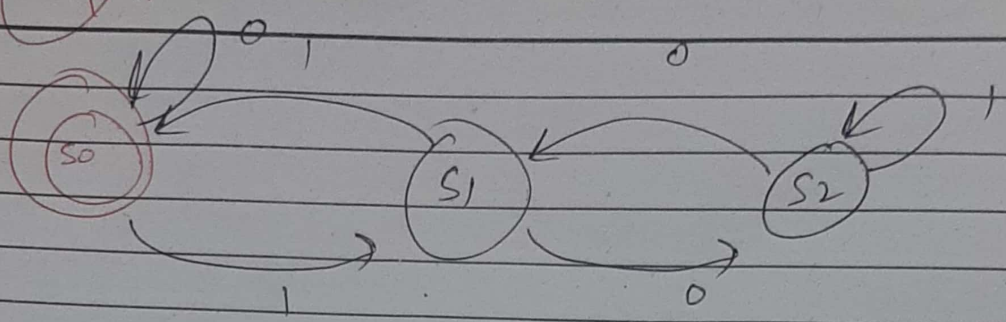


Fig.3



Q#2



~~old states~~	~~0~~	~~1~~
~~$\mp S_0 \equiv Z_1$~~	~~$S_0 \equiv Z_1$~~	~~$S_1 \equiv Z_2$~~
~~$S_2 \equiv Z$~~		
~~$S_0 \equiv Z_+$~~		

old states	0	1
$\pm S_0 \equiv S_0$	$S_0 \equiv S_0$	$S_1 \equiv S_1$
$S_1 \equiv S_1$	$S_2 \equiv S_2$	$S_0 \equiv S_0$
$S_2 \equiv S_2$	$S_1 \equiv S_1$	$S_2 \equiv S_2$

Same DFA would be generated.

Continuation Sheet ____ of ____

Q#3

www , $w \in \{a,b\}^*$

lets take $a^n b^n a^n b^n a^n b^n$.

Assume $n=4$ as pumping length.

the sample word would be.

aaaa bbbb aaaa bbbb aaaa bbbb.

let divide it into x, y, z.

$\underbrace{aa}_{x}\underbrace{aa}_{y}\underbrace{bbbb\ aaaa\ bbbb\ aaaa\ bbbb}_{z}$

$xy^0z =$ aabbbb aaaabbbb aaaabbbb

this not part of original language.

hence this is dis proof.

Part 2) ~~(aaaa)*~~ ~~aa~~ languages of this pattern which are regular.

$(aaa)^*$

$(bbb)^*$