19.9.2020

CS303 Tutorial-3

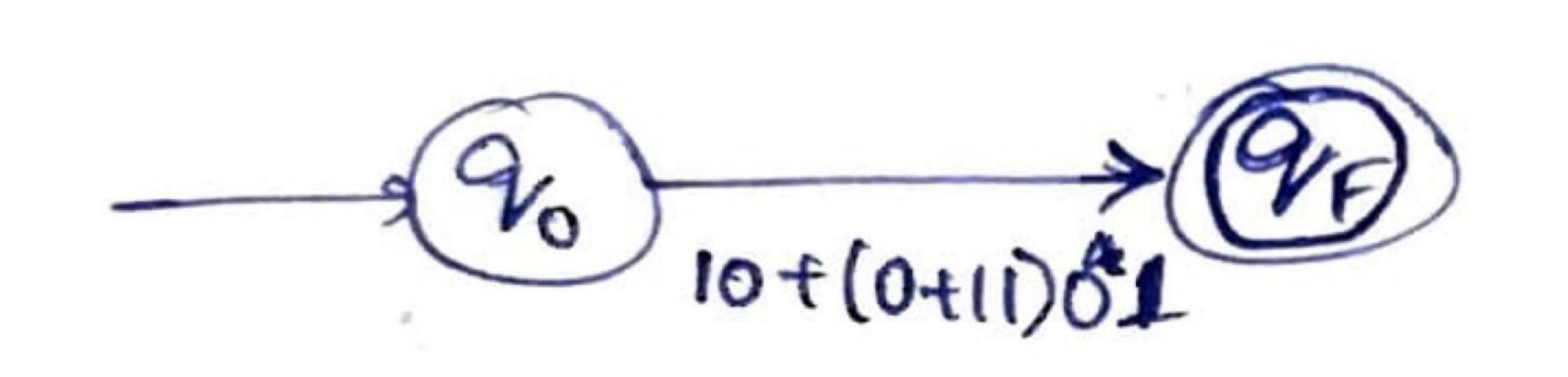
Name of Student: M. Maheeth Reddy

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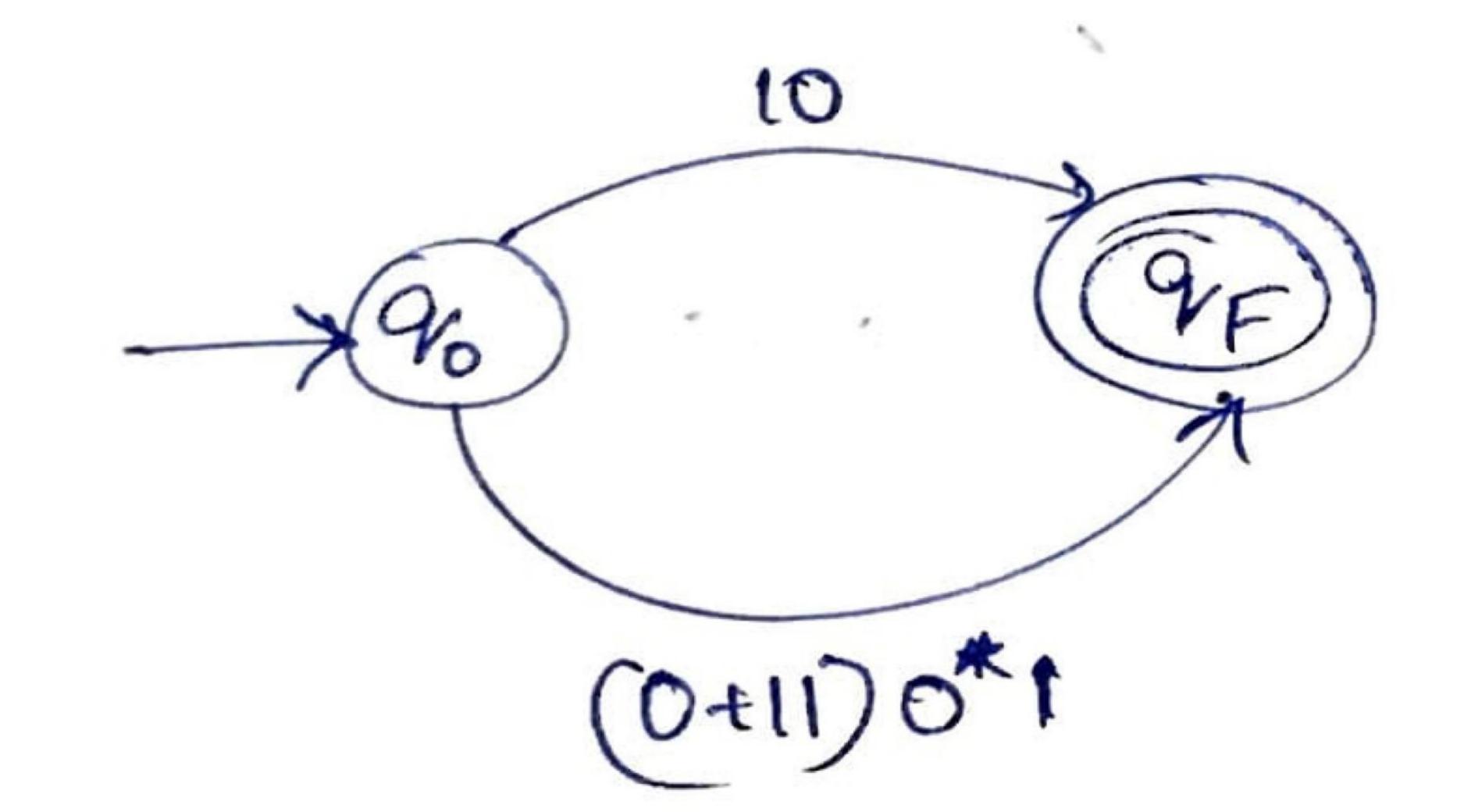
Ans 1:

Steps to draw NFA for accepting 10+ (0+11)0\*1

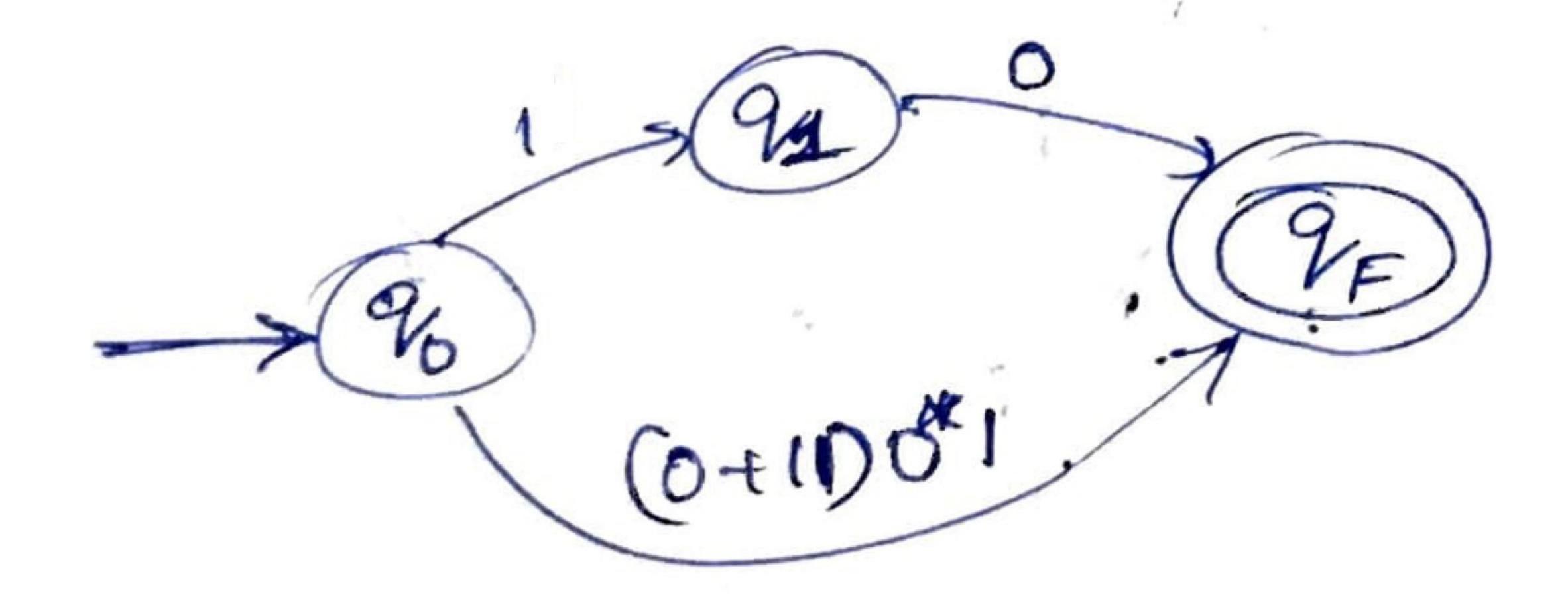
step1:



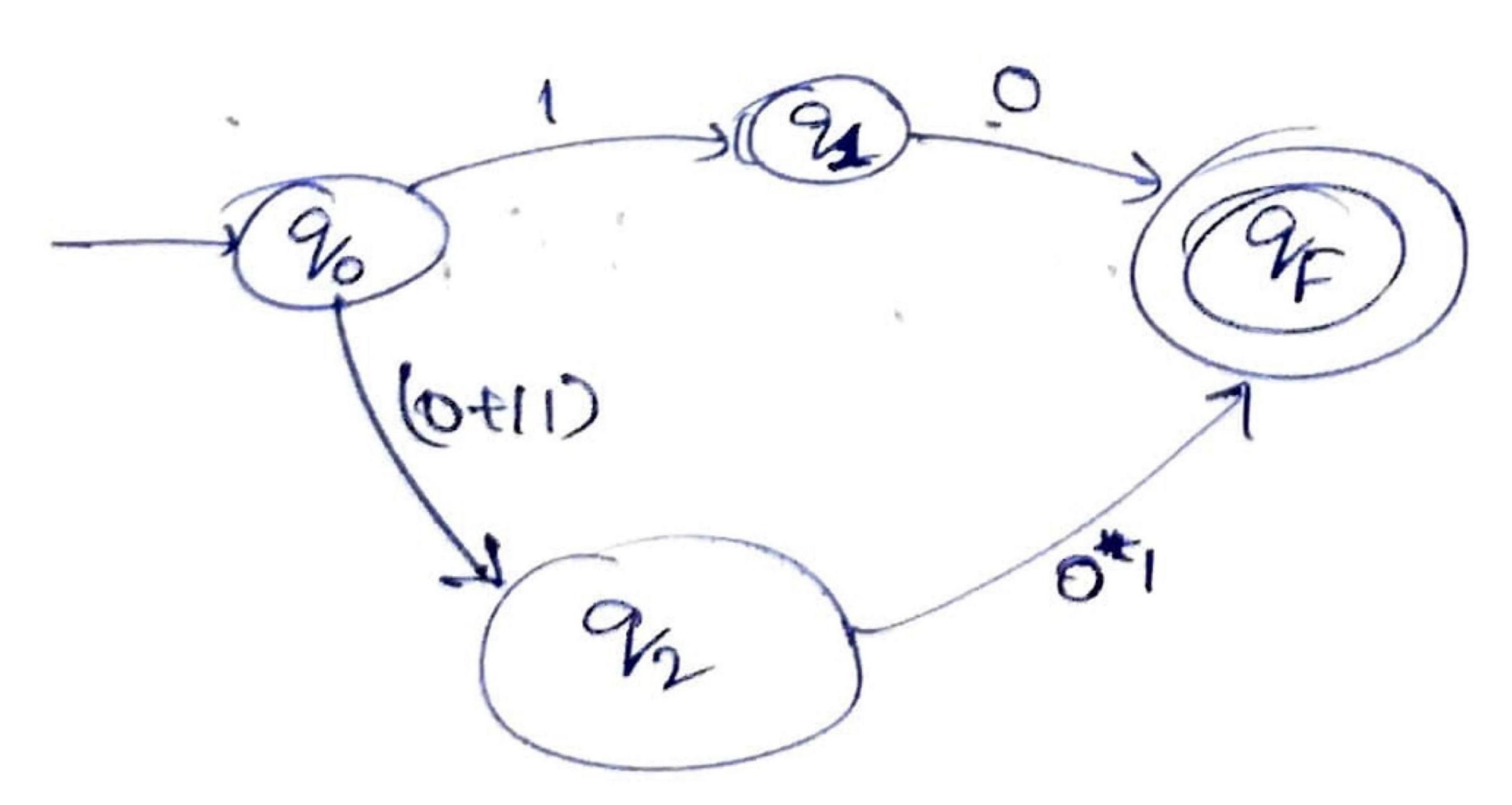
Step 2:

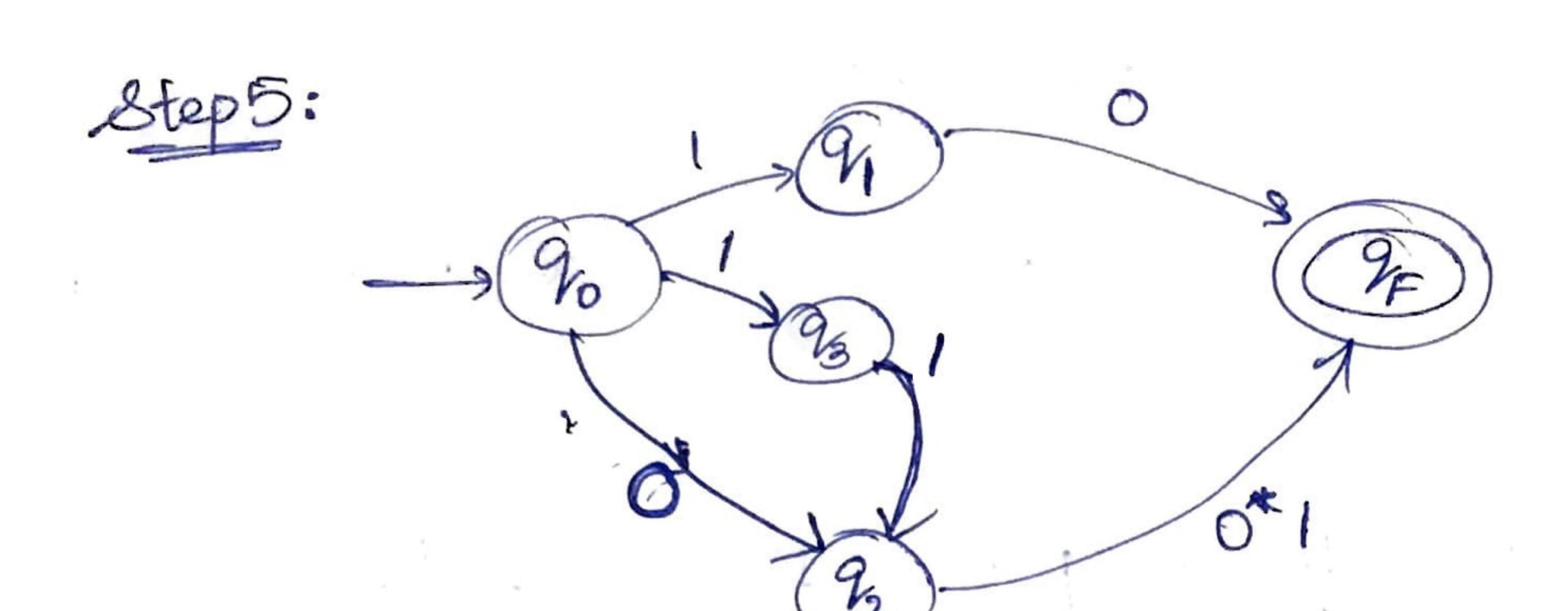


810p3:

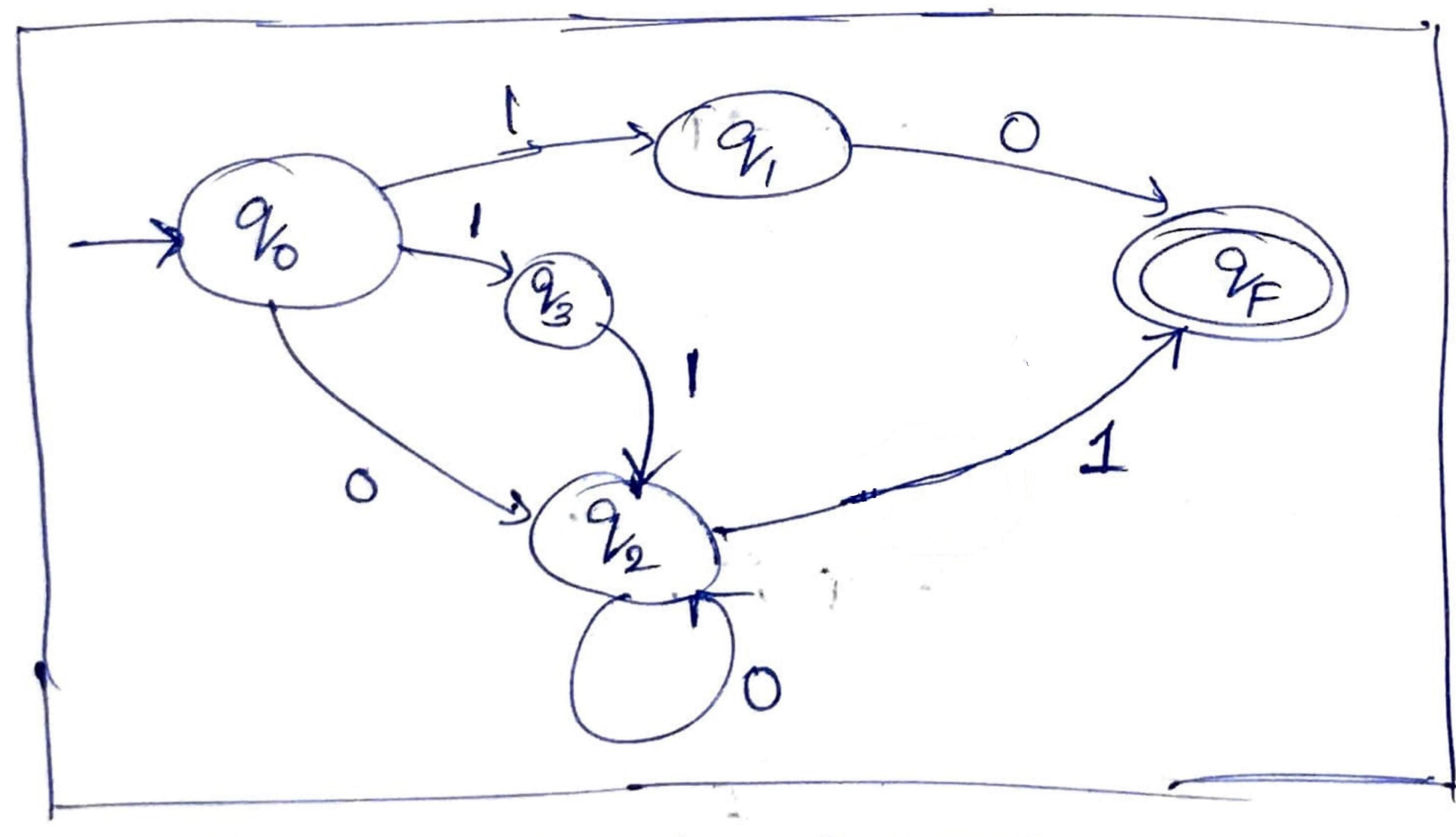


Step 4:





Step 6:



This is the final NFA

## Mns2:

The given statement is TRUE.

the know all finite languages are regular.

if is finite language, F is regular.

Fis regular languages are closed under Union operator,

LUF must be regular language

## drs 3:

The larguages  $L1 = \{\vec{a} \mid n \ge 0\}$  and  $L2 = \{\vec{b} \mid n \ge 0\}$  are singular larguages. Because, they can be expressed using the singular expressions  $\vec{a}$ ,  $\vec{b}$  respectively.

Hence, statement i) is correct because L1.L2 can be expressed using the regular expression at bt, which makes it a regular language.

Statement (ii) is using because L1.L2 = at b translates to  $Samb^n \mid m \ge 0$  and  $n \ge 0$  language. In this case m, n need not be equal. But in the given statement they are equal.

9Ans 4:

Regular grammar for the given languages are:

i) L(q) = {ambn | m >0 and n>0}

SAB

ASAAld

B-BB

ii) L(G) = {amb | m>0 and n>0}

S-3 AB

A-aAla

BBIA

iii) LCG)= {amb] m>0 and n>0}

S-AB

A-AAAA

B-368/A

ML(G) = {amb^1 m>0 and n>0}

S-AB

A-JaAla

B-3BBIA

V) L(G) = {amb/m>0 or n>0}

S-JOAB AB6

A-> aAld

B -> 6B/A