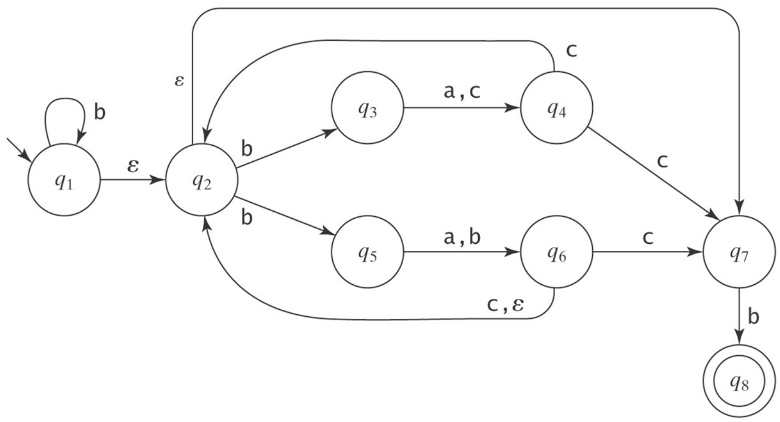
Name:____ Grade:_____<-- instructor use

1. Show an NDFSM for the language
   $L = \{w \in \{0, 1\}^* : w$ is the binary encoding of a positive integer that is divisible by 16 or is odd$\}$

2. For this NDFSM for $b^* (b(a \cup c)c \cup b(a \cup b) (c \cup \varepsilon))^* b$:



What are the values of eps?

$eps(q1) =$ $eps(q2) =$

$eps(q3) =$ $eps(q4) =$

$eps(q5) =$ $eps(q6) =$

$eps(q7) =$ $eps(q8) =$

3. Trace the simulation of this machine with input ***bbacb***.

4. Show the creation of the first few states of an equivalent DFSM.

5. Given a language L, two strings w and x in Σ_L* are indistinguishable with respect to L, written $w \approx_L x$, iff

   (English statement):

   (first-order logic statement):

6. Show that $\approx_L$ is an equivalence relation

7. Tell your instructor about anything from today's session (or from the course so far) that you found confusing or still have a question about. If none, please write "None".