INT201, Assignment 1

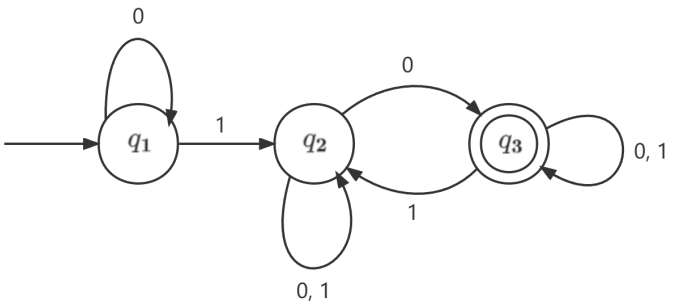
**Question 1**

For the following language over the alphabet $\Sigma = \{a, b\}$, give a DFA that recognizes the language. (Give both a drawing and symbolic description (5-tuple specification) for the DFA) (**30 marks**)

$E = \{w \in \Sigma^* |$ w begins with b and ends with $a\}$

**Question 2**

Convert the given NFA to its corresponding DFA. (**20 marks**)




**Question 3**

Convert the regular expression $(00)^*(11)$ into an NFA. (**20 marks**)

**Question 4**

Use Pumping Lemma to prove that the following language $A_1$ is not regular. (**30 marks**)

$A_1 = \{www | w \in \{a, b\}^*\}$