

# CSE 4703: Theory of Computation

## Quiz 2

Time: 20 min, Mark: 30

- Figure 1 is the state diagram of an NFA. Describe the language it accepts. Draw the diagram of the states the automata will be during the processing of input string 01011. 10

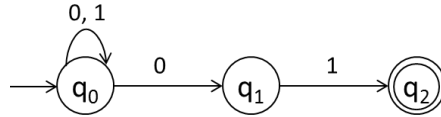


Figure 1: State diagram of an  $\epsilon$ -NFA for question 1

- Compute the  $\epsilon$ -closure of each state and convert the  $\epsilon$ -NFA of Table 1 to its equivalent DFA. 20

	$\epsilon$	a	b	c
$\rightarrow p$	$\emptyset$	$\{p\}$	$\{q\}$	$\{r\}$
q	$\{p\}$	$\{q\}$	$\{r\}$	$\emptyset$
* r	$\{q\}$	$\{r\}$	$\emptyset$	$\{p\}$

Table 1: Transition table of an  $\epsilon$ -NFA for question 2