Homework # 5
(Due: 12/06/2021   )

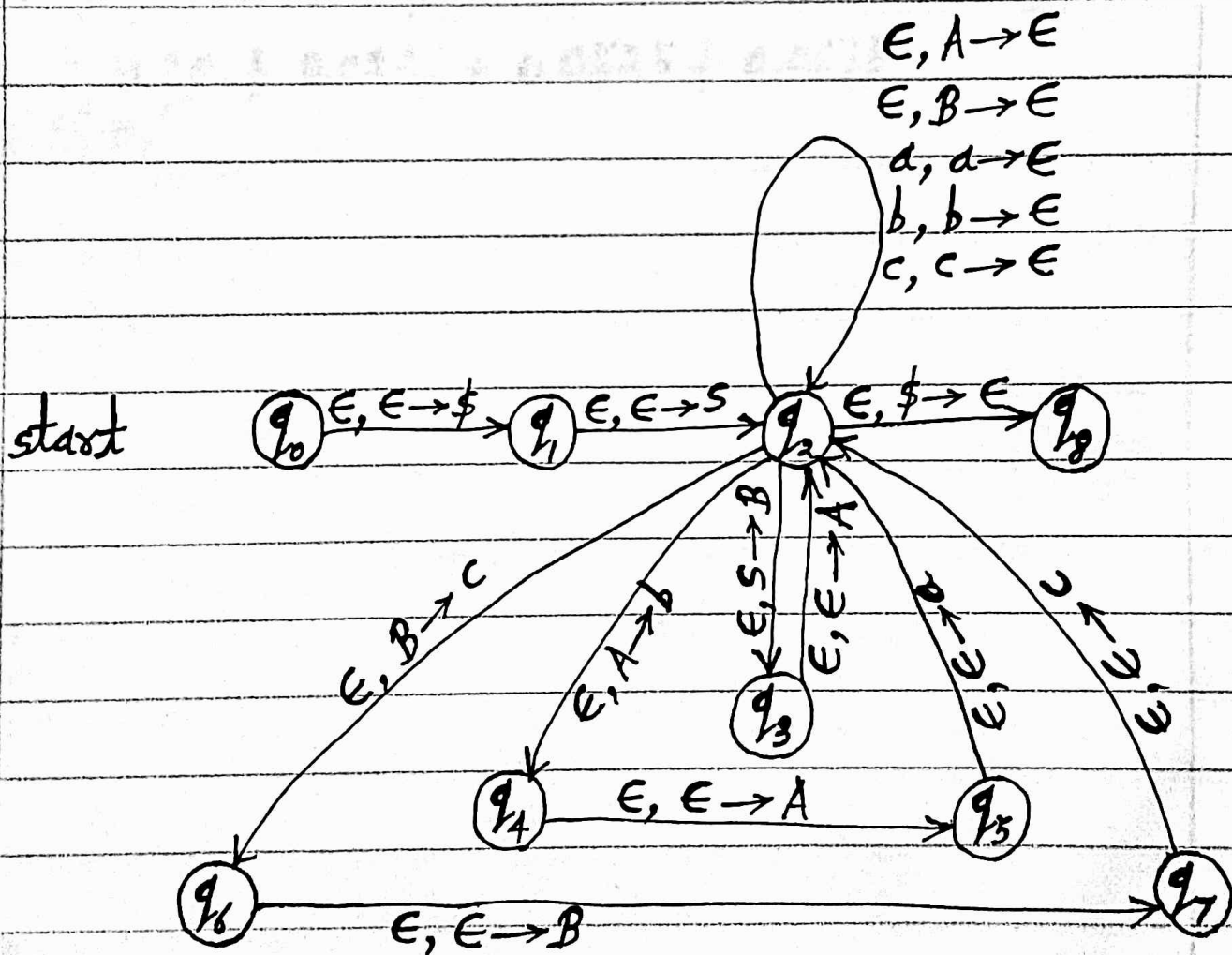GROUP NUMBER: 33

Group Members		
Name	SBU ID	% Contribution
SAURABH JAYESH PAREKH	114356444	100

Task 1 (a)

$$a, \epsilon \to a$$
$$a, b \to \epsilon$$
$$c, \epsilon \to \epsilon$$

start $\longrightarrow q_0$ $\epsilon, \epsilon \to \$$ q_1 $\epsilon, \$ \to \epsilon$ q_3

$\epsilon, \epsilon \to b$
$\epsilon, a \to \epsilon$

$b, \epsilon \to b$
$b, a \to \epsilon$

q_2

(b)

$$\epsilon, A \to \epsilon$$
$$\epsilon, B \to \epsilon$$
$$a, a \to \epsilon$$
$$b, b \to \epsilon$$
$$c, c \to \epsilon$$

start q_0 $\epsilon, \epsilon \to \$$ q_1 $\epsilon, \epsilon \to S$ q_2 $\epsilon, \$ \to \epsilon$ q_8

$\epsilon, B \to c$
$\epsilon, A \to b$
$\epsilon, S \to B$
$\epsilon, \epsilon \to A$
$\epsilon, \epsilon \to a$
$\epsilon, \epsilon \to c$

q_3

q_4 $\epsilon, \epsilon \to A$ q_5

q_6 $\epsilon, \epsilon \to B$ q_7

(a)
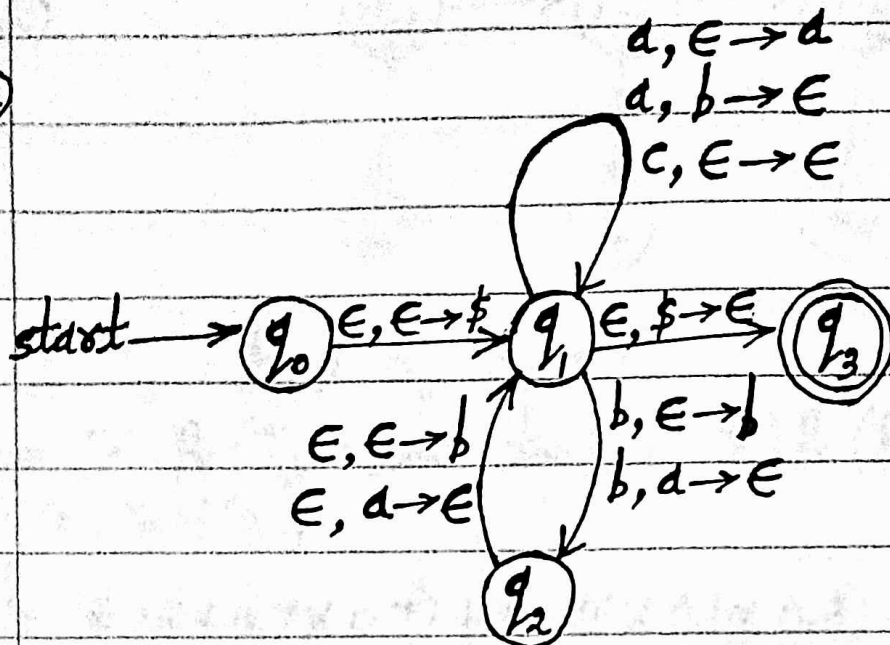
$S \rightarrow PQR$

$P \rightarrow PaA \mid PbB \mid \epsilon$

$BQ \rightarrow bQB$

$AQ \rightarrow aQA$

$Aa \rightarrow aA$

$Ab \rightarrow bA$

$Ba \rightarrow aB$

$Bb \rightarrow bB$

$AR \rightarrow Ra$

$BR \rightarrow Rb$

$Q \rightarrow \epsilon$

$R \rightarrow \epsilon$