



Student Name:

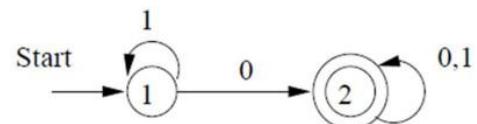
Academic ID:

Group:

1. Choose all the correct answer.

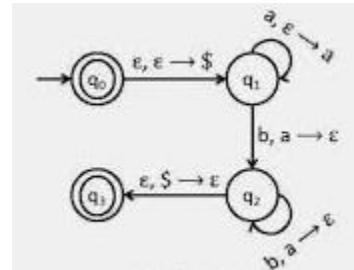
i. The shown state diagram is rejecting string

- A. “1000”
- B. “0001”
- C. “0000”
- D. “1111”

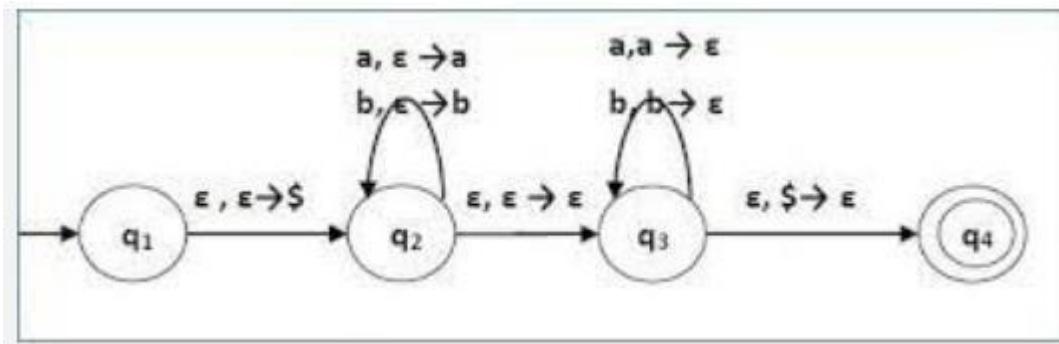


ii. Which of the following languages describes the shown PDA correctly?

- A. $L = \{a^{2n}b^n : n \geq 1\}$.
- B. $L = \{a^n b^{2n} : n \geq 1\}$.
- C. $L = \{a^n b^n : n \geq 1\}$.
- D. $L = \{a^{2n}b^{2n} : n \geq 1\}$.



2. Given the PDA shown in the figure



a. Find the function of the shown PDA.

b. Does the shown PDA accept string “abaab”? (with steps)

c. Does the shown PDA reject string “abba”? (with steps)

3. Find CFG for Give a context-free grammar that generates the following language over $\{0, 1\}^*$: $L = \{w|w \text{ contains more 1s than 0s}\}$

4. Design a TM as an Adder.
5. Convert FA shown in Fig. 1 into RE and RG.

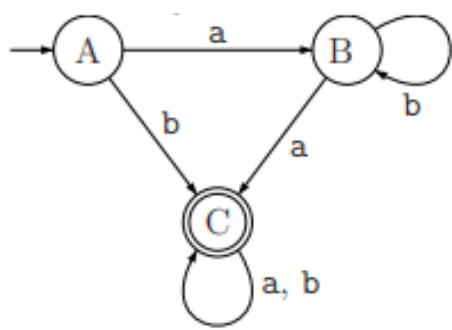


Figure 1

6.