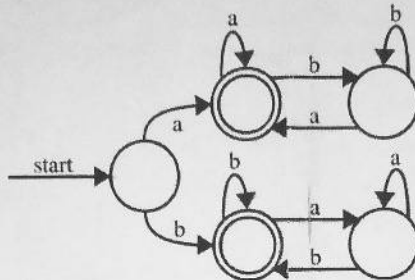


b) What is the language of the following Deterministic Finite Automata?



(CLO2) Construct grammar and model for different languages

Q. 4

[4 Marks]

Prove that:

$$L((a + b)c) = L(ac + bc)$$

Q.5

[2.5 + 2.5 = 5 Marks]

i. Show that the grammar

$$S \rightarrow aSbS \mid bSaS \mid \epsilon$$

is ambiguous.

ii. Eliminate useless productions from

$$S \rightarrow a \mid aA \mid B \mid C$$

$$A \rightarrow aB \mid \epsilon$$

$$B \rightarrow Aa$$

$$C \rightarrow cCD$$

$$D \rightarrow ddd$$

Q.6

[5 Marks]

Reduce the given CFG with Productions given by

$$S \rightarrow abSb \mid a \mid aAb \quad \text{and}$$

$$A \rightarrow bS \mid aAAb$$

to Chomsky Normal Form (CNF).

THE END