**SAVEETHA SCHOOL OF ENGINEERING**

SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**LIST OF EXPERIMENTS**

COURSE CODE : CSA13

COURSE NAME : THEORY OF COMPUTATION

1. Write a C program to simulate a Deterministic Finite Automata (DFA) for the given language representing strings that start with a and end with a
2. Write a C program to simulate a Deterministic Finite Automata (DFA) for the given language representing strings that start with 0 and end with 1
3. Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

S → 0A1 A → 0A | 1A | ε

1. Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

S → 0S0 | 1S1 | 0 | 1 | ε

1. Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

S → 0S0 | A A → 1A | ε

1. Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

S → 0S1 | ε

1. Write a C program to check whether a given string belongs to the language defined by a Context Free Grammar (CFG)

S → A101A, A → 0A | 1A | ε

1. Write a C program to simulate a Non-Deterministic Finite Automata (NFA) for the given language representing strings that start with b and end with a
2. Write a C program to simulate a Non-Deterministic Finite Automata (NFA) for the given languagerepresenting strings that start with o and end with 1
3. Write a C program to find ε -closure for all the states in a Non-Deterministic Finite Automata (NFA) with ε -moves.
4. Write a C program to find ε -closure for all the states in a Non-Deterministic Finite Automata (NFA) with ε -moves.
5. Design Deterministic Finite Automata using simulator to accept the input string “a” ,”ac”,and ”bac”.
6. Design Push Down Automata using simulator to accept the input string aabb
7. Design Push Down Automata using simulator to accept the input string anb2n
8. Design Turing Machine using simulator over the set {a,b} to accept the input string anbn
9. Design Turing Machine using simulator over the set {a,b} to accept the input string anb2n
10. Design Turing Machine using simulator to accept the input string for odd length of Palindrome over the set {a,b}.
11. Design Turing Machine using simulator to accept the input string ww over input alphabets ∑ = {a, b}
12. Design Turing Machine using simulator to perform addition of ‘aa’ and ‘aaa’
13. Design Turing Machine using simulator to perform subtraction of aaa-aa
14. Design Deterministic Finite Automata using simulator to accept even number of a’s.
15. Design Deterministic Finite Automata using simulator to accept odd number of a’s
16. Design Deterministic Finite Automata using simulator to accept the string the end with ab over set {a,b)

W= aaabab

1. Design Deterministic Finite Automata using simulator to accept the string having ‘ab’ as substring over the set {a,b}
2. Draw a Deterministic Finite Automata for the language accepting strings ending with ‘abba’ over input alphabets ∑ = {a, b}

1. Design Turing Machine using simulator to accept the input string for even length Palindrome
2. Design Turing Machine using simulator to accept the input string wcw over set {a,b)
3. Design DFA using simulator to accept the string the end with ab over set {a,b)

W= abbaabab

1. Design Deterministic Finite Automata using simulator to accept the input string “bc” ,”c”,and ”bcaaa”.
2. Draw a Deterministic Finite Automata for the language accepting strings ending with ’01’ over input alphabets ∑ = {0, 1}.
3. Design Push Down Automata using simulator to accept the input string anbn over input alphabets ∑ = {0, 1}.
4. Design Turing Machine using simulator to perform string comparison where w={aba aba}
5. Design Turing Machine using simulator to accept all palindrome strings of all length over the set {a,b}.
6. Draw a Deterministic Finite Automata that accepts a language L over input alphabets ∑ = {0, 1} such that L is the set of all strings starting with ’00’.
7. Design Deterministic Finite Automata using simulator to accept strings in which a’s always appear tripled over input {a,b}
8. Design Non Deterministic Finite Automata using simulator to accept the string the start with a and end with b over set {a,b} and check W= abaab is accepted or not.
9. Design Non Deterministic Finite Automata using simulator to accept the string that start and end with different symbols over the input {a,b}.
10. Design Push Down Automata to represent the language L ={W/W belongs to (a+b)\* and na(w)>nb(w) where na(w)=Number of a’s in w, nb(w)=Number of b’s in w.
11. Design DFA using simulator to accept the string the end with abc over set {a,b,c)

W= abbaababc

1. Design Push Down Automata to represent the language L ={W/W belongs to (a+b)\* and na(w)=nb(w) where na(w)=Number of a’s in w, nb(w)=Number of b’s in w.

INTERNAL EXAMINER EXTERNAL EXAMINER