



Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering

Final Examination, Fall 2024

Course Code: CSE331, Course Title: Compiler Design

Level: 4 Term: 1 Batch: 60

Time: 01:30 Hrs

Marks: 40

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	a)	Considering the following expression show the task for each phase (up to Semantic Analysis) of compiler: $increment = gross * rate + 40$	[5]	CO1
	b)	Identify the specific error from the following code: <pre>#include<stdio.h> int main{ innt a[2]={2,4,6}, b=1; sum = a[b]+b printf("Rasalt is: %f, sum); return b; }</pre>	[3]	
	c)	Explain how the panic mode recovery would handle the syntax error 1(b).	[2]	
2.	a)	Consider the following CFG-1 and answer the following question. <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>$P \rightarrow ABCD$ $A \rightarrow aA \mid cC \mid oD \mid iC$ $B \rightarrow ov \mid ovC$ $C \rightarrow id \mid id-D \mid \epsilon$ $D \rightarrow 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8 \mid 9$</p> <p style="text-align: center;">< CFG-1</p> </div>	[5]	
	b)	Consider the following grammar. If there is Left Recursion then eliminate it. $A \rightarrow Ba \mid c$ $B \rightarrow Cb \mid Ad$ $C \rightarrow Ae \mid f$	[3]	

3. a) Convert the following NFA in Fig.1 into a DFA using subset construction method.

[5]

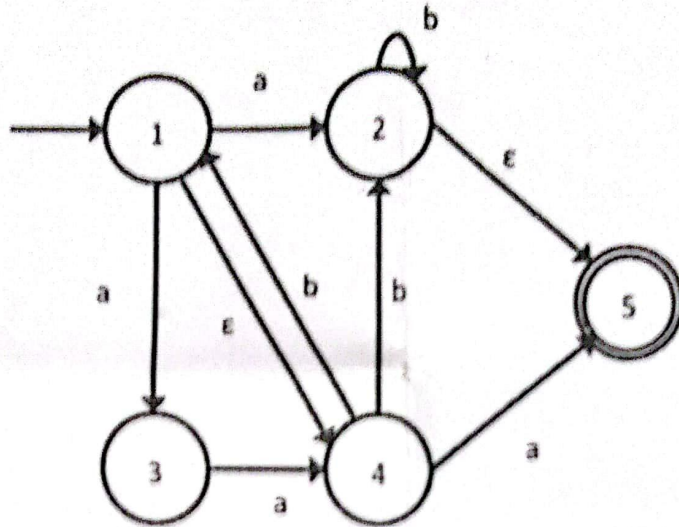


Fig. 1. NFA for Q3(a)

b) Write down the formal definition of Finite Automata? Justify the statement briefly – “Every DFA is a NFA, but not the vice versa”.

[2]