



Daffodil International University
Faculty of Science & Information Technology
Mid-Term Exam Examination, Fall 2023
Course Code: CSE331: Course Title: Compiler Design
Level: L3 Term: T2 Batch: 58

Time: 1.5 Hrs
Marks: 25

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)	<pre>#include <iostream> using namespace std; int main() { int first, second, sum; cin >> first >> second; sum = first + second; cout << first << " + " << second << " = " << sum; return 0; }</pre> Explain which translator should be used between compiler and interpreter for the given source code	[5]	CO1
	b)	Identify the typical order in which the phases of a compiler are executed, and why is this order important for the overall compilation process. Use the given expression to construct the front end phases of the compiler. Total = 25/100*Quiz+25/100*Mid+50/100*Final	[5]	
2	a)	Consider the following CFG and answer the following question. $S \rightarrow a \mid aAb \mid abSb$ $A \rightarrow aAAb \mid bS$ Explain if the above mentioned CFG is ambiguous or not, and give proper justification. You may use "aababbb" as input string to test the ambiguousness.	[5]	CO1
3	a)	Consider the given regular expression $[ab + (b + aa)b^*a]$ and convert it to ϵ -NFA and write the 5 tuples for the ϵ -NFA.	[5]	CO1
	b)	Fig 1: FSM Identify if the given FSM is deterministic. If not then convert it into a deterministic FSM.	[5]	