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Daffodil International University

Faculty of Science & Information Technology

Mid-Term Exam Examination, Fall 2023

Course Code: CSE331: Course Title: Compiler Design

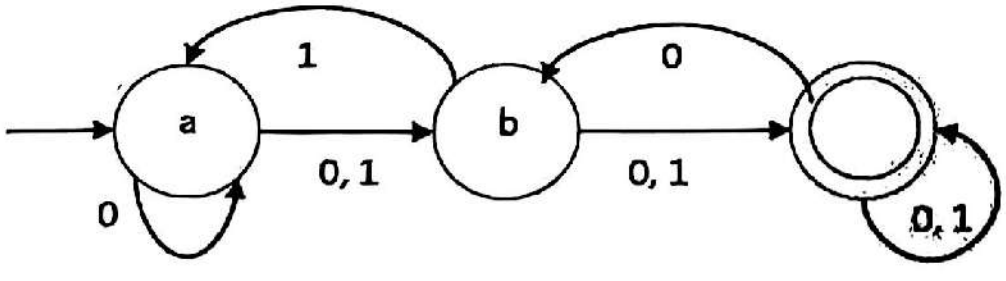
Level: L3 Term: T2 Batch: 58

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)*	#include <iostream>
		using namespace std;
		int main() {
		int first, second, sum;
		cin >> first >> second;
		sum = first + second;
		cout << first << " + " << second<< " = " << sum;
		return 0;
		}
		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 → a | aAb | abSb A → aAAb | 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 ∈-NFA and write the 5 tuples for the ∈-NFA.	[5]	CO1
	b)	 Fig 1: FSM **Identify** if the given FSM is deterministic . If not then **convert it into a** deterministic FSM.	[5]	