



# Daffodil International University

Faculty of Science & Information Technology

Department of Computer Science & Engineering

Mid Examination, Spring 2025

Course Code: CSE331, Course Title: Compiler Design

Level: 4 Term: 1 Batch: 61

Time: 01:30 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)	$S \rightarrow D M Y$ $D \rightarrow N N$ $M \rightarrow \text{july}$ $Y \rightarrow N N N N$ $N \rightarrow 3   6   2   0   4$  For the input string: "36 july 2024", determine whether the CFG is ambiguous or not.	[5]	CO1
2.	a)	<pre>float Calc (float a, float b float c, int x){     float ans, char ch=c;     ans = a*x+b*x+c /* this is second statement*/     return ans; }</pre> Describe the phases of a compiler for the second statement of the given function.	[5]	CO1
	b)	Find the errors in the above code 2(a) and explain how panic mode method can recover from the errors.	[5]	
3.	a)	A smart travel management system is being developed to track the journeys of three travelers: A, B, and C, as they travel towards Cox's Bazar. The system will use a Finite State Machine (FSM) to model their movement through various locations.  Travel Routes & Constraints Traveler A starts from Dhaka and follows this route: ● Dhaka $\rightarrow P \rightarrow Q \rightarrow R \rightarrow$ Cox's Bazar  Traveler B also starts from Dhaka but takes a different route: ● Dhaka $\rightarrow M \rightarrow N \rightarrow Q \rightarrow R \rightarrow$ Cox's Bazar  Traveler C starts from Feni and follows this route: ● Feni $\rightarrow R \rightarrow N \rightarrow$ Cox's Bazar $\rightarrow$ Teknaf  Design an FSM diagram that accurately models these travel paths.	[5]	CO1
	b)	If the 3(a) FSM is an NFA, convert it into a DFA.	[5]	