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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Mid Examination, Summer 2025
Course Code: CSE331, Course Title: Compiler Design
Level: 3 Term: 3 Batch: 62

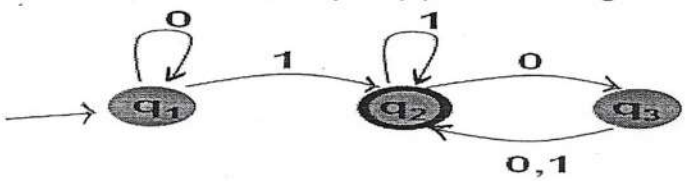
Time: 01:30 Hrs **Marks: 25**

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)*	**Consider a grammar designed to parse simplified time formats:** $T \rightarrow H : M$ $H \rightarrow N \mid N\,N$ $M \rightarrow N\,N$ $N \rightarrow 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8 \mid 9$ Determine whether the grammar is ambiguous for the input string- **1 : 23**	[5]	CO1

2.	*a)*	`flaot newSal(flaot B_Sal, Exp, Edu, KPI, Er_T)`
		`  float b1=b2=b3=b4=0.4,`
		`nSal = B_Sal+b1*Exp+b2*Edu+b3*Sex+b4*KPI+e.Er_T*0.3  //3nd stat.`
		`return nSal,`
		Describe the phases of a compiler for the 3rd statement of the given function.
			[6]	CO1

	b)	**Find** the errors in the above code 2(a) and **explain** how panic mode method can recover from the errors.	[4]	
3.	*a)*	Using the given transition diagram (TD), explain the five components (5-tuple) of the Finite State Machine (FSM). Additionally, identify whether the FSM is deterministic or non-deterministic, and justify your reasoning. 	[6]	CO1
	b)	Analyze the given grammar for **Left Factoring** and modify it to eliminate any occurrences while preserving its structure. *E → edu | edu.bd | edu.com | diu.edu | diu.bd | diu | educate | education | educated | twinkle | humpty | dumpty*	[4]	