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Daffodil International University
Faculty of Science & Information Technology
Department of Software Engineering
QUIZ-1, Summer 2026
Course Code: SE314; Course Title: Computer Algorithm Design & Analysis
Sections: 44B & Teacher: AS

Time: 30 Minutes **Marks: 15**

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

1. Analyze the essential characteristics that define a good algorithm and Calculate the time complexity and space complexity of the given algorithm- **int sum(int A[], int n)** **{** **int sum = 0, i;** **for(i = 0; i < n; i++)** **sum = sum + A[i];** **return sum;** **}**	5
2. Differentiate between **Big Oh (O)** and **Big Omega (Ω)** notation. An algorithm has a running time function: $f(n)=5n+3$ Determine the asymptotic upper bound of the function using **Big-O notation**. Justify your answer.	5
3. An e-commerce platform stores the prices (in BDT) of newly added products: 1250, 850, 1999, 450, 750, 2200, 1500, 999 To improve search efficiency, the system first breaks the collection into smaller sections, organizes each section, and then combines them to create one fully ordered list. Illustrate the complete sorting process and provide the final ordered prices.	5