



Daffodil International University

Department of Software Engineering
Faculty of Science & Information Technology
Final Examination, Summer 2025

Course Code: SE 312; Course Title: Software Quality Assurance & Testing

Teachers & Sections: MNA, KMH, CP, FF, RRB, MTM (40A - 40I)

Time: 2:00 Hrs

Marks: 40

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. #include <stdio.h>
int main() {
    int number, i = 1, sum = 0, result = 1;
    printf("Enter a positive integer: ");
    scanf("%d", &number);
    if (number > 0) {
        printf("Input is valid.\n");
        while (i <= number) { ✓
            printf("Current number: %d\n", i);
            if (i % 2 == 0) {
                sum += i;
                printf("Added %d to sum.\n", i);
            }
            i++;
        }
        printf("Sum of even numbers from 1 to %d is: %d\n", number, sum);
    }
    else {
        printf("You entered a negative number!\n");
        printf(".....Performing a different calculation...\n");
        while (i >= number) { ✓
            printf("Current number: %d\n", number);
            number = -number;
            if (number != 0) { ✓
                printf("Now Current Number : %d\n", number);
            }
            else{ ✓
                printf("You choose Zero!");
            } ✓
        }
        printf("Program ended.\n");
        return 0;
    }
}
```

a)	Inspect the above code and Draw Control Flow Graph (CFG).	[Marks-5]	CLO-3 Level-3
b)	Calculate Cyclomatic Complexity of the program.	[Marks-5]	
c)	Prepare the list of independent paths that are required to cover the CFG.	[Marks-5]	
d)	Generate Test cases according to the independent paths for the above program.	[Marks-5]	
2.	A software company is developing an online ticket booking system. During the testing phase, several defects were reported, tracked, fixed, and re-tested before final deployment. Illustrate and explain the Bug Life Cycle with a proper diagram.	[Marks-5]	CLO-4 Level-3

