

**CS 3335**  
**HW2**  
**25 points**

**Due Wednesday, Sep 14, 2022**

**Please submit a .zip file with one pdf that has all your written answers and a .c file for your answer to problem 9**

1. What is the output of the code? (4 pts)

```
int k, j = 0;
while ( j < 2 )
{
    k = 0;
    while ( k < 3)
    {
        printf( "hello\n");
        k++;
    }
    j++;
    printf("goodbye\n");
}
```

**Answer:**

```
hello
hello
hello
goodbye
hello
hello
goodbye
```

2. The body of a for loop is always executed at least once. True or false? (1pt)

**Answer: False**

3. The body of a do-while loop is always executed at least once. True or false? (1pt)

**Answer: True**

4. What is the value of someInt after control exits the following loop? (1pts)

```
someInt = 270;
while (someInt > 500)
```

someInt = someInt - 3;

- a. 270
- b. 273
- c. 497
- d. 500
- e. none of the above--this is an infinite loop

**Answer:**

**A. 270**

5. With respect to the loop in the following main function, what is missing? (1pt)

```
int main()
{
    int loopCount;
    while (loopCount <= 8)
    {
        printf("Hi");
        loopCount++;
    }
    return 0;
}
```

- a. The initialization of the loop control variable
- b. The testing of the loop control variable
- c. The incrementation of the loop control variable
- d. Nothing is missing

**Answer:**

**A. The initialization of the loop control variable**

6. What is the output of the following program? [1 pts]

```
#include <stdio.h>
int main()
{
    int i=204;
    switch (i % 5)
    {
        case 1:
            printf("Case1 ");
    }
}
```

```

        case 2:
            printf("Case2 ");
        case 3:
            printf("Case3 ");
        case 4:
            printf("Case4 ");
        default:
            printf("Default ");
    }
    return 0;
}

```

**Answer:**

**Case4 Default**

7. What is the output of: 3 pts

```

int k, j = 0;
while ( j < 4 )
{
    k = 0;
    while ( k < 4)
    {
        k++;
        if (k == 2 && j == 3)
            break;
        printf( "k=%d\n", k);
    }
    j++;
    printf("j=%d\n",j);
}

```

**Answer:**

**K=4**

**J=3**

**K=1**

**J=4**

8. What is while(1) an example of: (1pt)

- A. Loop that is never executed
- B. A selection statement
- C. An infinite loop
- D. Code that generated compilation error

**Answer:**

**A. Loop that is never executed**

9. Submit this problem as a .c file named sum\_digits.c. (12 points)

Write a program that asks the user to enter a positive integer number  $< 32000$  and then compute the sum of its digits:

**Sample input and output:**

Enter a number less than 32000: 1234

Sum of digits: 10

*Grading is:*

*1 points for submitting valid code*

*2 points comment and indentation*

*2 points for successful compilation with no warnings*

*2 points for executing on the sample input and getting correct answer on it*

*5 points for other test cases that I will make*