Assignment 2

The Due date for the following assignment has passed. As per our departmental policy, we cannot consider this assignment.

1. Read the following program. Assume variables a, b, c, d, e, f, g, and h have been declared.

```c
int main()
{
    int a = 5;
    int b = 10;
    int c = a + b;
    int d = c * 2;
    int e = d / 2;
    int f = e - 1;
    int g = f % 3;
    int h = g + 4;
    return 0;
}
```

What will be the output of the program?

- A: 53
- B: 37
- C: 14
- D: 11
- E: None of the above

2. The output of the program is an error due to an arithmetic operation not being performed correctly.

3. It is a common implementation which of the following operations is used to check whether the return address is corrupted or not.

   - A: XOR
   - B: AND
   - C: OR
   - D: NOT
   - E: None of the above

4. You are using the return address to verify that the program is executing correctly. You suspect the verification code to be incorrect. You observe the code is this: `g = (a & b) | (c & d) & 0x01`, what will happen?

   - A: The program will crash at runtime
   - B: The program will execute correctly
   - C: The program will execute incorrectly
   - D: None of the above
   - E: The program will not execute

5. Which of the following flags do you have to use to disable stack smashing?

   - A: -z
   - B: -F
   - C: -S
   - D: -M
   - E: None of the above

6. Why is the power of an instruction?

   - A: It allows for a simplified instruction set
   - B: It allows for a more complex instruction set
   - C: It allows for a faster instruction set
   - D: It allows for a slower instruction set
   - E: None of the above

7. The following program uses only int and float as arguments:

```c
#include <stdio.h>

int main()
{
    int a = 10;
    float b = 20.5;
    printf("%d %f\n", a, b);
    return 0;
}
```

Arguments can be provided to get in the following ways:

- A: g++ -o output output.c
- B: g++ -o output input.c
- C: g++ input.c -o output
- D: g++ input.c -o output
- E: None of the above

8. What is a primitive data type?

   - A: Variable
   - B: Array
   - C: Pointer
   - D: Structure
   - E: None of the above

9. What is the expected output of the code?

```c
int main()
{
    int a = 10;
    int b = 20;
    printf("%d %d\n", a, b);
    return 0;
}
```

- A: 10 20
- B: 20 10
- C: 0 0
- D: None of the above
- E: None of the above

10. What is the compiler's job?

   - A: It allows the program to be compiled
   - B: It allows the program to be executed
   - C: It allows the program to be printed
   - D: It allows the program to be stored
   - E: None of the above

11. Why is the compiler important?

   - A: It allows the program to be compiled
   - B: It allows the program to be executed
   - C: It allows the program to be printed
   - D: It allows the program to be stored
   - E: None of the above

12. Why are the non-secure data and secure implementations of this attack we can prevent all forms of return-oriented attacks?

- A: True
- B: False
- C: None of the above
- D: None of the above
- E: None of the above