COMP - Semantic Analysis I (MIEIC - Compilers - 2021)

* This form will record your name, please fill your name.

1. Select the codes for which you expect that javac (the java compiler) reports a semantic error (assume that the methods are part of well-formed Java classes:

(a)
```java
int f1(int A[]) {
    int i = -1;
    return A[i];
}
```
(b)
```java
int f2(boolean b) {
    int c;
    if(b) {
        c=1;
    } else {
        c=2;
    }
    return c;
}
```
(c)
```java
int f3(int A[]) {
    int b=1;
    int c;
    while(b < 20) {
        c=b;
        b++;
    }
    return c;
}
```
(1 Point)

☐ (a)

☐ (b)

☐ (c)

2. Select the codes for which you expect that javac (the java compiler) reports a semantic error (assume that the methods are part of well-formed Java classes:

(a)
```java
int f4(int b) {
    int c;
    if(b>1)
        if(b<10) c=1;
        else c = 2;
    else c=2;
    return c;
}
```
(b)
```java
int f5(int b) {
    int c;
    if(b>1) {
        if(b<10) c=1;
        if(b>=10) c = 2;
    } else c=2;
    return c;
}
```
(c)
```java
int f6(int b) {
    int c;
    if(b>1)
        if(b<10) c=1;
        else
            if(b==3) c = 2;
        else
            if(b==2) c = 4;
            else c = 5;
    else c=2;
    return c;
}
```
(1 Point)

○ (a)

○ (b)

○ (c)

3. Select the option regarding the result of the semantic analysis of the following Java method:

1. public static void main(String args[]) {
2.   int d1, d2;
3.   int a= 5;
4.   int b=2;
5.   double c =2d;
6.
7.   d1 = (int) (a*b*c);
8.   d2 = (int) a*b*c;
9.   System.out.println("d1: "+d1+"\n");
10.   System.out.println("d2: "+d2+"\n");
11. }
(1 Point)

◯ The code is semantically correct

◯ There is a semantic error in line 7

◯ There is a semantic error in line 8

4. Select the option regarding the following Java statement:

long a = 140737488355328;
(1 Point)

◯ The code is correct;

◯ The code has a semantic error because the integer cannot be represented as a long

◯ The code has a syntactic error because the integer cannot be represented as a long

◯ The code has a semantic error because the integer cannot be represented as an int

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