*Note: when these questions mention 'aliases', that means two object variables that reference the same object

multiple choice

5.1 The `this` reference refers to

a. the currently executing object

b. the first parameter in a method

c. the current class

d. a reference that doesn't point to any object

e. the object that called the current method

5.2 Which of the following should be used for an object reference variable that does not refer to any object?

a. `this`

b. `static`

c. `null`

d. `0`

e. `-1`

5.3 Which of the following expressions can be used to test whether two objects, `o1` and `o2`, are aliases of each other?

a. `o1 == o2`

b. `o1.equals(o2)`

c. `o2.equals(o1)`

d. `o1.compareTo(o2) == 0`

e. `o1.compareTo(o2) != 0`

5.4 Which of the following reserved words is used in the class header of a class that implements an interface?

a. `interface`

b. `implements`

c. `abstract`

d. `void`

e. `final`

5.5 Which of the following is often static?

a. local variables

b. all instance variables

c. parameters to methods

d. object reference variables

e. constants

5.7 A class that implements an interface must implement which methods of the interface?

a. only those that return a value

b. only those that are not abstract

c. only those that are marked with the word "required"

d. the class is not required to implement any methods

e. all methods must be implemented

5.8 Given the declarations

```
String s1 = "James Gosling";
String s2 = "James Gosling";
```

which of the following statements is true?

a. `s1` and `s2` are aliases of each other

b. `s1 == s2` is true

c. `s1 < s2` because capital letters come before lowercase in the Unicode character set

d. `s1.equals(s2)` is true

e. `s1` and `s2` are the same because they have the same number of characters

5.9 A method that does not have an implementation

a. is not allowed by the Java compiler

b. takes no parameters and returns the integer 0

c. is a static method

d. is a null method

e. is an abstract method

5.10 What is output by the following code?

```
String word1 = "blue";
String word2 = "red";
String word3 = "green";
word2 = word3;
word1 = word3;
word3 = word1;
System.out.println(word1 + " " + word2 + " " + word3);
```

a. blue red green

b. green green blue

c. blue blue blue

d. green green green

e. red red blue

true/false

5.1 A reference variable that does not currently point to an object is called a `null` reference.

5.2 The `this` reference lets an object refer to iself.

5.3 Two objects are aliases of each other if they are equal using the `equals` method.

5.4 The == operator and the `equals` method do the same thing for all objects.

5.5 When an object is passed to a method, what is actually passed is a reference to that object.

5.6 Static variables and methods are accessed through a class rather than through an instance of a class.

5.7 A static method may use instance variables in the same class.

5.8 Constructors may not be static.

5.9 Constants may be declared in interfaces.

5.10 A class may implement more than one interface.