

MULTIPLE CHOICE

- Which of the following is *not* a Java keyword?
 - import
 - static
 - public
 - void
 - none of the above, all are Java keywords
- A file containing Java code has the header:

```
public class Question
```

The file in which the source code must be stored is:
 - Question.class
 - Question.java
 - Program.java
 - classQuestion.java
 - none of the above
- The keyword “static”, when used within a method definition, indicates that the method
 - requires an object to be invoked
 - cannot be invoked
 - does not require an object to be invoked
 - is not valid
 - none of the above
- In object-oriented design, an object is composed of
 - methods
 - variables
 - attributes and behaviours
 - variables and constants
 - none of the above
- The instance variables of an object should be initialized by the
 - constructor
 - creator
 - initializer
 - declarer
 - none of the above
- An accessor method
 - is a static method
 - changes the value of an instance variable
 - must invoke the constructor
 - any of the above
 - none of the above
- What is the output of the following code segment?

```
int s = 10;
int b = 8;
int value;
if (s < b) value = s;
else if (s > b) value = b;
else value = 0;
System.out.println(value);
```

 - 10
 - 8
 - 0
 - 18
 - none of the above
- Identity equivalence implies state equivalence; that is, when one has identity equivalence, one also has state equivalence.
 - true
 - false
 - only true for integers
 - only false for integers
 - none of the above
- An array is best described as
 - a garbage collection algorithm
 - a collection of data items of the same type
 - a simple variable
 - data items of different types stored in the same memory location
 - a way of mixing primitive types and reference types
- What does the Java statement:

```
Car rental = new Car();
```

most likely do?
 - declares a reference variable of type Car called `rental`
 - creates a Car object and initializes it using the constructor that takes no parameters
 - nothing; statement is syntactically incorrect.
 - declares a reference variable of type `rental` call Car
 - none of the above
- A method that returns a value must contain the following keyword:
 - void
 - return
 - break
 - public
 - none of the above

Short Questions

1. Write a `for` statement that can be used to loop over the decades of the 20th century (i.e. 1900, 1910, ..., 1990).
2. One wishes to output the contents of an integer variable `num` if it has a value between 30 and 40, inclusive. Write an `if` statement and appropriate conditions that would accomplish this?
3. Assign the boolean variables `a`, `b`, and `c` values of `true` and `false`, which make the following Boolean expression evaluate to `true`:

```
(a || (!b && c)) || (!a && !c) || !b || (b && c)
```

4. Consider the following class definition and then answer the questions that follow.

```
public class Counter {
    private int counter;
    private int ops;

    public Counter() {
        counter = 0; ops = 1;
    }

    public int getCounter() {
        return counter;
    }

    public int getOps() {
        return ops;
    }

    public void setCounter(int value){
        ops++;
        counter = value;
    }

    public void increment(){
        ops++;
        counter++;
    }

    public void decrement(){
        ops++;
        counter--;
    }
}
```

- 4.a. What is an example of an accessor method in class `C`?
- 4.b. What is an example of a mutator method in class `C`?
- 4.c. Write a constructor for the `Counter` class that takes a single parameter `n` and sets `counter` to that value and `ops` to 1.
- 4.d. Write a method for the `Counter` class that will increment `counter` by 2 and `ops` by 1 and returns the new value of `counter`.