# Short Answer Questions:

## Easy basics

1. What are the four integer types?

Int, long, short, unsigned

1. What are the other primitive types?

Boolean, char, double, float

1. What are the numeric operations?

+, -, \*, /, %

1. What is the increment and decrement operator?

++

--

1. What do you use to convert a value of one type into another?

casting

1. What are the three types of Errors and describe how each occur **[6 marks]**?

Runtime – occur during execution of program

Syntax – detected by compilers during compiling

logic – result in incorrect results but no error thrown

1. The two most common (at this point) options for obtaining input are?

JOptionPane, Scanner

1. What is narrowing a type?

Casting a variable with large range to a variable of a smaller range (must be performed explicitly)

1. Which statements can be used for control decisions on a switch expression(type)?

Char, byte, short or int

1. Assuming that x is 1, show the result of the following Boolean expressions.
   1. (true) && (3 > 4) (false)
   2. !(x > 0) && (x > 0)(false)
   3. (x > 0) ||(x < 0) (true)
   4. (x !=0) || ( x==0) (true)
   5. (x >=0) || (x < 0) (true)
   6. (x!=1) == !(x == 1) (true)
2. Which type of loop should you use if the statements inside the loop must be executed at least once? Do-while
3. Is the example showing an *initial-action* iteration or an *action-after-each* iteration **for (int**  I = 1; I < 100; **System.out.println(i), I++);** ? action after each iteration
4. What is the **return** type of a **main**  method? (void)
5. How do you declare and create an array?

Declare: datatype[] arrayVar; creating: arrayVar = new datatype[arraysize] OR datatype[] arrayVar = new datatype[arraysize];

1. How do you access elements of an array?

arrayVar[indexNumber]

1. What is the keyword **break** for? What is the keyword  **continue** for? Will the following program terminate? If so, give the output.

**int** balance = 1000;

**while (true) {**

**if** (balance < 9) break;

balance = balance – 9;

}

System.out.println(“Balance is “ + balance);

Break is used to exit the current loop. Continue breaks from current iteration but continues loop. The program will terminate and balance = 1

1. How many times is the loop body repeated? What is the printout of the loop?

**int**  **i = 1;**

**while** (**i** > 10)

**if**((i++) % 2 == 0)**System.out.println(i);**

**The loop is not executed**

1. What is the array index type? What is the lowest index?

Index type is int, lowest is 0

1. Explain the differences between method overloading and method overriding

Overriding overrides the parent method. Overloading provides two different methods that can be called depending on the parameters

Method overloading defines methods of the same name in a class.

Method overriding modifies the methods that are defined in the super classes.)

1. Explain the difference between AWTGUI components, such as **java.awt.Button,**  and Swing components, such as **javax.swing.JButton**

**Heavyweight vs lightweight**

1. How do you create a colour? What is wrong about creating a **Color** You can add a using **newColor(400, 200, 300)**? Which of two colours is darker,  **newColor(10,0,0)** or  **new Color(200, 0, 0)?**

300 and 400 are out of range. New color 10 is darker because smaller values are darker

1. What is the default layout manager for a **JPanel ?** How do uo add a component to a **JPanel?**

**FlowLayout. Components are added directly to Jpanel??**

## Getting to Grade 12 material:

# True/False Questions/ One word:

1. Strings have a different equality assignment than characters. T
2. The relational operators (<, <=, ==, !=, >, >=) work with numbers and characters, and yield a numerical value F
3. The braces enclosing the loop body can be omitted only if the loop body contains one or no statement T
4. This statement will work F

**for (int** I = 0; I ‘ 10; i++);

**{**

**System.out.println**(“I is “ + i);

**}**

1. A call to a method with a **void** return type is always a statement itself, but a call to a value-returning method is always a component of an expression. T
2. Every element in an array has the same type T
3. The array size is fixed after it is created F
4. The elements in an array must be of primitive data type T
5. When an array is passed to a method, a new array is created and passed to the method.
6. A subclass is a subset of a superclass.
7. When invoking a constructor from a subclass, its superclass’s no-arg constructor is always invoked.
8. You can override a private method defined in a superclass.
9. You can override a static method defined in a superclass.
10. You can add a button to a frame
11. You can add a frame to a panel
12. You can add a panel to a frame.
13. You can add any number of components to a panel of a frame.
14. You can derive a class from **JButton, JPanel, JFrame,**  or **JApplet**

# Find the Errors:

## Numeric Data Types:

**public class**  test {

**public void** main(string{ }args) {

**int** i;

**int** k = 100.0;

**int** j = I + 1;

// intentional blank line

System.out.println(**”J is “** + j + “ **and**

**k is “** + k);

}

}

Answer:

## Loops

1. **public class** Test{
2. **public void** main(String[ ] args) {
3. **for (int** I = 0; i<10; i++);
4. sum+=1;
6. **if** (i < j);
7. System.out.println(i)
8. **else**
9. System.out.println(j);
11. **while** (j < 10);
12. {
13. j++;
14. };
16. **do** {
17. j++;
18. } **while** (j < 10)
19. }
20. }

# Multiple Choice:

# Definitions:

1. Give an example of each Boolean Operator

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Truth Table Operator | P1 | P2 | together | Example: |
| Table operator not ! | False |  | True | !(1 > 0) if **false**, because (**(1 > 0)** |
| Table operator not && | False | True | P1 && p2 = False |  |
| Table operator not && | True | True | P1 && ps = True |  |
| Table operator not || | False | True | P1 || P2 = True |  |
| Table operator not || | True | True | P1 || P2 = True |  |
| Table operator not ^ | False | True | P1 || P2 = True |  |

**ANSWER:**