

1. Matching [20 pts]

Choose the **best** term for each definition.

1. _____ Declares a variable in Java whose value cannot be changed
 2. _____ A violation of the rules of the programming language
 3. _____ Appending one String to another
 4. _____ The contents of a .class file, the equivalent of machine language for the Java virtual machine
 5. _____ A piece of text appearing in the program source which is intended as an explanation to people reading the code—it is ignored by the compiler
 6. _____ A word that has special meaning in a programming language and cannot be used by the programmer as the name of a variable or method
 7. _____ A blueprint for data type, from which objects can be made
 8. _____ Using a loop to perform similar operations multiple times
 9. _____ A Java program that executes embedded in another application like a web browser
 10. _____ An example of a fully-qualified name in Java
- A. Strings
 - B. Syntax Error
 - C. Reserved Word
 - D. Feedback
 - E. Applet
 - F. Bytecode
 - G. final
 - H. concatenation
 - I. class
 - J. Inheritance
 - K. java.lang.Math
 - L. Repetition
 - M. Return value
 - N. Iteration
 - O. Comment

2. Simple Applet [16 pts]

Consider the following Applet code.

API Excerpt

```
class Graphics
    public void fillRect(int x, int, y, int w, int h)
    public void drawLine(int x1, int y1, int x2, int y2)
    public void setColor(Color c) //sets the drawing color
    public void drawString(String s, int x, int y)

public void paint(Graphics page) {
    setBackground(Color.white);
    page.setColor(Color.blue);
    page.fillRect(50, 50, 100, 100);
    page.drawLine(50, 50, 150, 150);
    page.drawLine(50, 150, 150, 50);
    page.setColor(Color.black);
    page.drawString("Top Gun!", 200, 100);
} //end paint method
```

- 8 (a) The figure drawn in this applet is
- a blue square
 - a blue square with two white lines drawn horizontally through it
 - a blue square with two white lines drawn diagonally through it
 - a blue square with two white lines drawn vertically through it
 - a white square with two blue lines drawn vertically through it
- 8 (b) The String "Top Gun!" is drawn
- above the box
 - to the left of the box
 - to the right of the box
 - below the box
 - inside the box

3. String Tracing [12 pts]

What is the output of the following code?

```
public class Tracing {
    public static void main (String [] Neil){
        String test = "Michael.Vick@gmail.com";
        char c = test.charAt(7);
        switch(c){
            case 'L': System.out.println("Good job");
                break;
            case '.': System.out.println("Are you sure?");
            case 'l': System.out.println("Nice throw!");
            default: System.out.println("Michael Vick.. Who's Michael Vick???");
        } //end switch
        System.out.println(test.length());
        String newTest = new String(test.replace('.', '_'));
        System.out.println(test);
        if(test.length() > 100 && test.length() < 0){
            System.out.println("You scored!");
        } else if(test.length() > 100 || test.length() > 0){
            System.out.println("touchdown!");
        } else{
            System.out.println("Else what?");
        } //end if-else
    } //end main method
} //end class def
```

OUTPUT:

4. Expression evaluation [16 pts]

What is the value of the following expressions?

4 (a) $10 - 7 + 2 / 6 - 5 * 2$

Value:

4 (b) $((15 - 3) + (11 \% 4)) * (10 - 11.0)$

Value:

4 (c) $100.0f * 1 / 4$

Value:

4 (d) `true || ((true && false) || !false && (10<11) || ('a' >= 'a'))`

Value:

5. Coding [10 pts]

Write the class 'Student' and include the main method. In the main prompt the user for his/her age and print it to the screen. Hint: The Keyboard method readInt() may be useful for inputing the age.

6. Loop Coding [10 pts]

Fill in the method below so that when called, it prints a triangle of '*' based on the parameter received. For instance:

```
(4)      (6)
****      *
***       **
**        ***
*         ****
          *****
          *
```

```
public void printTri(int count) {
    //your code in here
```

```
}
```

7. BONUS [5 pts]

Fill in the code. The program should print to the console only character 'G','g','T','t' from the String strn.

Example: If the String strn is: "Georigia Tech." The output should be: "GT"

If the String strn is: "Got it" The output should be: "GtT"

```
public class Bonus{

    public static void main (String [] BobWaters){
        System.out.print("Please enter a String");
        String strn = Keyboard.readString();
        //Fill in the code

    }
}
```