**Lab 4**

**Programming Fundamentals (CS-130-01)**

**CS 130-01 Fall 2021 Total=100**

Select the best possible answer and write it down:

Multiple Choice questions (count=15): **15x4=60 points**

1. **Which assignment statement declares 32 bits?**
2. Int
3. float
4. double
5. short
6. long

Ans:

1. **Which assignment statement declares 8 bits?**
   1. Int
   2. float
   3. double
   4. short
   5. long

Ans: byte

1. **Which of these statements declares a constant in Java?**
   1. final
   2. const
   3. void
   4. **static**

Ans:

1. **Which statement is correct for importing the Scanner class?**
   1. import java.util.Scanner;
   2. import java.util.scanner;
   3. import scanner;
   4. import java.lang.Scanner;

Ans:

1. **Which of the following lines is a properly formatted comment in Java?**
   1. // This is a comment
   2. /\* This is a comment \*/
   3. #This is a comment
   4. Both a and b

Ans:

1. **Java is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ language. (Check all that apply)**
   1. a procedural
   2. functional
   3. object-oriented
   4. imperative
   5. scripting

Ans:

1. **Which of the following is an example of an invalid assignment or declaration statement?**
   1. int age = 30;
   2. int money, dollars = 0, cents = 0;
   3. int years = 1; months = 12; days = 365;
   4. int length, meters, centimeters, millimeters.
   5. none of the above

Ans:

1. **Java has two basic kinds of numeric values: \_\_\_\_\_\_\_\_\_\_\_\_\_, which have no fractional part, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which do.**
   1. shorts, longs
   2. doubles, floating points
   3. characters, bytes
   4. integers, floating points
   5. integers, longs

Ans:

1. **A syntax error is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
   1. a logical error
   2. a compile-time error
   3. a run-time error
   4. a bug
   5. an exception

Ans:

1. **Which of the following will is considered a logical error?**
   1. forgetting a semicolon at the end of a programming statement
   2. typing a curly bracket when you should have typed a parenthesis
   3. multiplying two numbers when you meant to add them
   4. dividing by zero
   5. misspelling an identifier

Ans:

1. **The Java compiler translates Java source code into \_\_\_\_\_\_\_\_\_\_\_\_\_ .**
   1. Java bytecode
   2. C++
   3. assembly code
   4. machine code
   5. an object-oriented language

Ans:

1. **To assign a value stored in a double variable to an int variable, use**
   1. a cast operator
   2. promotion
   3. a print statements
   4. a widening conversion
   5. nothing. Java will do this automatically

Ans:

1. **Which of the following data types only allows one of two possible values to be assigned?**
   1. char
   2. int
   3. boolean
   4. float
   5. long

Ans:

1. **user types the number -12.6 in response to a prompt in a program.  Which Scanner class method should be used to read the user input as a numeric value?**
   1. nextInt()
   2. nextDouble()
   3. nextLine ()
   4. next()
   5. any of these methods would work

Ans:

1. **Consider the following snippet of code:**

**System.out.println("30 plus 25 is " + 30 + 25);**

**What is printed by this line?**

1. plus 25 is 55
2. 30 plus 25 is 30
3. 30 plus 25 is 55
4. 30 plus 25 is 3025
5. this snippet of code will result in a compiler error

Ans:

………………………………………………………………………………………………………

1. **Working with arrays at eclipse, create a new class called weight: 20 points**

0 1 2 3 4 5 6 7 8 9

Text

Description automatically generated

**weight**

1. Print (weight of the fifth person): 67
2. Change and Print weight of the third person: 200
3. Change and Print weight of the eighth person: 120
4. Print length of array

Ans:

1. Describe what is an array

Arrays are used to store multiple values in a single variable, example a list.

1. Describe what you performed in the program

The program consists in a list that is: 1. Printed. 2. Two values from the list are changed. 3. The length of the list is printed.

1. Take a screenshot of your program and paste it here.

Graphical user interface, text, application, email

Description automatically generated

1. **Working on String Methods at Eclipse by creating a class called “StringMethodsTest” 20 points**

**String phrase = "Change is inevitable";**

**String mutation1, mutation2, mutation3;**

1. **Print** the String “phrase”
2. Find out its **length**;
3. **Concatenate** with another phase “except from vending machines” and store it to **mutation 1**;
4. **Change** mutation 1 to upper case and save it to **mutation 2;**
5. **Return** **substring** from index 3 of mutation 1 and save it to **mutation 3;**
6. **Print** length, **mutation 1-3**;

Ans:

1. Write down the description of string methods

Once a String object has been created, neither its value nor its length can be changed Thus, we say that an object of the String class is *immutable.* However, several methods of the String class return new String objects that are modified versions of the original

1. Describe what you performed in the program, elaborate each of the methods (Chapter 3, Slides 22 to 26)

The program manages complexity through a series of changed that are made to a string, involving concatenation of the string with a new phrase, making this new phrase to upper case, and cutting it from substring 3 till the end.

1. Take a screenshot of your program and paste it here.

Graphical user interface, text, application

Description automatically generated