Lab 4

Programming Fundamentals (CS-130)

CS 130-02 Fall 2022 **Total=100**

1. Select the best possible answer and write it down:

A. **Which assignment statement declares 32 bits?**
   a. Int
   b. float
   c. double
   d. short
   e. long

B. **Which assignment statement declares 8 bits?**
   a. int
   b. float
   c. double
   d. short
   e. long

C. **Which of these statements declares a constant in Java?**
   a. final
   b. const
   c. void
   d. static

D. **Which statement is correct for importing the Scanner class?**
   a. import java.util.Scanner;
   b. import java.util.scanner;
   c. import scanner;
   d. import java.lang.Scanner;

E. **Which of the following lines is a properly formatted comment in Java?**
   a. // This is a comment
   b. /* This is a comment */
   c. #This is a comment
   d. Both a and b

F. **Java is _____ language.**
   a. functional
   b. object-oriented
   c. scripting

G. **Which of the following is an example of an *invalid* assignment or declaration statement?**
   a. int age = 30;
   b. int money, dollars = 0, cents = 0;
   c. int years = 1; months = 12; days = 365;
   d. int length, meters, centimeters, millimeters;
   e. none of the above

H. **Java has two basic kinds of numeric values: _____, which have no fractional part, and _____ which do.**
   a. shorts, longs
   b. doubles, floating points
   c. characters, bytes
   d. integers, floating points
   e. integers, longs

I. **A syntax error is a _____.**
   a. a logical error
   b. a compile-time error
   c. a run-time error
   d. a bug
   e. an exception

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

K. **The Java compiler translates Java source code into _____ .**
   a. Java bytecode
   b. C++
   c. assembly code
   d. machine code
   e. an object-oriented language

L. **To assign a value stored in a double variable to an int variable, use**
   a. a cast operator
   b. promotion
   c. a print statements
   d. a widening conversion
   e. nothing. Java will do this automatically

M. **Which of the following data types only allows one of two possible values to be assigned?**

a. char
b. int
c. boolean
d. float
e. long

N. **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?**

a. nextInt()
b. nextDouble()
c. nextLine ()
d. next()
e. any of these methods would work

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

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

What is printed by this line?

a. plus 25 is 55
b. 30 plus 25 is 30
c. 30 plus 25 is 55
d. 30 plus 25 is 3025
e. this snippet of code will result in a compiler error

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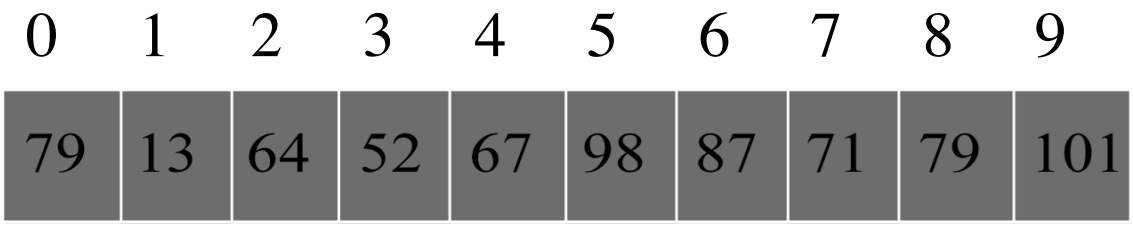
2. ^2



weight

a. Print (weight of the fifth person): 67
b. Change and Print weight of the third person: 200
c. Change and Print weight of the eighth person: 120
d. Print length of array

3. **Working on String Methods at Eclipse by creating a class called "StringMethodsTest"**

String phrase = "Change is inevitable";

String mutation1, mutation2, mutation3;

a. **Print** the String "phrase"
b. Find out its **length**;
c. **Concatenate** with another phase "except from vending machines" and store it to **mutation 1**;
d. Change mutation 1 to upper case and save it to **mutation 2;**
e. Return substring from index 3 of mutation 1 and save it to **mutation 3;**
f. **Print** length, **mutation 1-3**;

4. Generate a random number in between:
   a. 3 to 10 (including)
   b. 20 to 45 (excluding)
   c. -20 to 30 (including)

5. The quadratic formula helps us solve any quadratic equation. First, we bring the equation to the form $ax^2+bx+c=0$, where a, b, and c are coefficients. Then, we plug these coefficients in the formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

when $ax^2+bx+c=0$

a, b, c = constants, where a ≠ 0

You will have to find out two roots for x when, a=2, b=8, c=2 (use scanner class for a,b,c)