CSE110 Review Questions (Solutions)

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1 Data Types

Question 1 Give the output of the following program:

```java
public class Example {
        public static void main(String[] args) {
                int y = 2, z = 1;
                z = y * 2;
                System.out.print(y + z);
        }
}
```

Answer: 6. This is because y is 2, and 2*2 is stored in z. Now, z=4, and y is the same value (2). Therefore, 4+2 = 6.

Question 2 Consider the following program:

```java
public class Example {
        public static void main(String[] args) {
                String str = new String("Arizona state university");
                char ch1 = str.toLowerCase().toUpperCase().charAt(0);
                char ch2 = str.toUpperCase().charAt(8);
                char ch3 = str.toUpperCase().charAt(str.length() - 1);
                System.out.println("character 1 is: " + ch1);
                System.out.println("character 2 is: " + ch2);
                System.out.println("character 3 is: " + ch3);
        }
}
```

What will be the output?
character 1 is: A
character 2 is: S
character 3 is: Y

Question 3 Consider the following program:

```java
public class Example {
        public static void main(String[] args) {
                int num1 = 4, num2 = 5;
                System.out.println("4" + "5");
                System.out.println(num1 + num2);
                System.out.println("num1" + "num2");
                System.out.println(4+5);
        }
}
```

What will be the output?
Answer:
45
9
num1num2
9

Question 4 Which of the following invokes the method length() of the object str and stores the result in val of type int?

```
a) int val = str.length();
b) int val = length.str();
c) int val = length().str;
d) int val = length(str);
```

Answer: A

Question 5 Evaluate each of the following expressions.

```
String s = "Programming is Fun";
String t = "Workshop is cool";
a) System.out.println(s.charAt(0) + t.substring(3, 4));
b) System.out.println(t.substring(7));
```

Answers:
a) Pk
b) p is cool

Question 6 Evaluate each of the following expressions.

```
int j = 11;
int k = 3;
String s = "Ford Rivers";
a) j / k
b) j % k
c) s.substring(1, 5)
d) s.length()
e) s.charAt(3)
```

Answers:
a) 3
b) 2
c) ord
d) 11
e) d

Question 7 True or False? The type char is a primitive data type. Answer: True

Question 8 True or False? The type String is a primitive data type. Answer: False

Question 9 Write a Java program that asks the user for the radius of a circle and finds the area of the circle.
Answer:

```
import java.util.Scanner;
public class Circle {
        public static void main(String[] args) {
```

```
                final double PI = 3.14159;
                Scanner scan = new Scanner(System.in);
                System.out.println("Enter radius: ");
                double radius = scan.nextDouble();
                double area = PI * radius * radius;
                System.out.println("The area is: " + area);
        }
}
```

Question 10 Write a Java program that prompts the user to enter 2 integers. Print the smaller of the 2 integers.
Answer:

```
import java.util.Scanner;
public class Smaller {
        public static void main(String[] args) {
                Scanner scan = new Scanner(System.in);
                System.out.println("Enter 2 integers:");
                int a = scan.nextInt();
                int b = scan.nextInt();
                System.out.println("The smaller integer is " + Math.min(a, b));
        }
}
```

Question 11 Write the output of the following program:

```
public class Question {
        public static void main(String[] args) {
                String str = "hello";
                System.out.println("abcdef".substring(1, 3));
                System.out.println("pizza".length());
                System.out.println(str.replace('h', 'm'));
                System.out.println("hamburger".substring(0, 3));
                System.out.println(str.charAt(1));
                System.out.println(str.equals("hello"));
                System.out.println("pizza".toUpperCase());
                System.out.println(Math.pow(2, 4));
                double num4 = Math.sqrt(16);
                System.out.println(num4);
        }
}
```

Answers:
bc
5
mello
ham
e
true
PIZZA
16.0
4.0

Question 12 Write the output of the following program:

3

```java
public class Question {
        public static void main(String[] args) {
                String s1 = new String("Clinton, Hillary");
                String s2 = new String("Obama, Barack");
                System.out.println(s1.charAt(2));
                System.out.println(s1.charAt(s1.length() - 1));
                System.out.println(s2.toUpperCase());
                System.out.println(s2.substring(s2.indexOf(",") + 2, s2.length()));
        }
}
```

Answers:
i
y
OBAMA, BARACK
Barack

Question 13 What value is contained in the integer variable length after the following statements are executed?

```java
length = 5;
length += 3;
length = length * 2;
```

Answer: 16

Question 14 What is the result of 2/4 when evaluated in Java? Why? Answer: 0. It is an integer division.