

Term 2 – Unit 6 – Week 8

Exam 2 – Offline Version – Solution

1. Consider the following method definitions:

```
public static void mystery(int x[]) {
    System.out.println("A");
}
```

```
public static void mystery(int x) {
    System.out.println("B");
}
```

```
public static void mystery(String x) {
    System.out.println("C");
}
```

What is output by the method call, `mystery("1234" + 5)`?

- a. A b. B c. C d. CA e. CB
2. Why can the various methods of the Scanner class not be overloaded? For example instead of using `x.nextDouble()` and `y.nextInt()` to input values of different types, why can't we use a single method called `.nextValue()` to input numbers?
- a. Because Java cannot use a method's parameters to tell two overloaded methods apart
 b. Because all input and output uses the String data type
 c. Because primitive data types do not use reference values
 d. Because Java cannot use a method's return type to tell two overloaded methods apart
 e. None of the above
3. Consider the following method definitions:

```
public static void mystery(int a) {
    System.out.println("A");
}
```

```
public static void mystery(double a) {
    System.out.println("B");
}
```

```
public static void mystery(int a, double b) {
    System.out.println("C");
}
```

```
public static void mystery(double a, int b) {
    System.out.println("D");
}
```

What is output by the method call, `mystery(7.0015, 5)`?

- a. A b. B c. C d. D e. Nothing is printed - there is an error.

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4. Consider the following method definitions:

```
public static int doStuff(int a) {
    return a/2;
}

public static int doStuff(double val) {
    return (int)(val/2) + 1;
}
```

What is output by the method call, `System.out.println(doStuff(5) + doStuff(5.0))`?

- a. 3 b. 3.5 c. 4 d. 5 e. 23
5. What is output by the method call, `System.out.print(31/5)`?
- a. 6.5 b. 7 c. 6.2 d. 6 e. 6.5
6. A method that has only a header and no body must be declared ____.
- a. public
b. private
c. static
d. interface
e. abstract
7. A(n) ____ may only have abstract methods and constants, but no variables.
- a. child class
b. parent class
c. class
d. interface
e. abstract class
8. Consider the set of classes: Bingo, Chess and Game. Which would you choose to be the abstract class(es)?
- a. Chess
b. Game
c. Bingo
d. Chess and Bingo
e. all should be abstract
9. Suppose a child class has overridden a method of its parent class. What key word does the child class use to access the method in the parent class?
- a. child
b. parent
c. static
d. super
e. this

Problems 10 and 11 refer to the following class definitions:

```
public abstract class Phone {
    abstract void dial();
}

public class MobilePhone extends Phone {
```

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```

    public void dial() {
        //code not shown
    }
}

public class RotaryPhone extends Phone{
}

```

10. Which of the following statements is true?
- RotaryPhone can be instantiated.
 - MobilePhone cannot be instantiated.
 - RotaryPhone cannot be instantiated.
 - Neither can be instantiated since you cannot extend an abstract class.
 - Neither can be instantiated since they do not include constructors.
11. Which of the following statements is true?
- A Phone object can access methods in MobilePhone.
 - MobilePhone inherits from Phone.
 - RotaryPhone inherits from Phone and MobilePhone.
 - Phone can be instantiated.
 - None of the above.
12. An abstract class can contain:
- Only variables, constants, methods and abstract methods.
 - Only abstract methods and constants.
 - Only constants, methods and abstract methods.
 - Only variables and methods.
 - Only abstract methods.
13. Which of the following implements the List interface?
- Comparable
 - ArrayList
 - Double
 - String
 - Math

Questions 14 – 16 refer to the following class hierarchy:

```

public class A {
    public A () {
        System.out.print("one ");
    }

    public A (int z) {
        System.out.print("two ");
    }

    public void doStuff(int val) {
        System.out.print("six ");
    }
}

```

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```

    }

    public class B extends A {
        public B () {
            super (3);
            System.out.print("three ");
        }

        public B (int val) {
            System.out.print("four ");
        }

        public void doStuff() {
            System.out.print("five ");
        }
    }

```

14. What is printed when the following line of code is executed?

```
B b = new B();
```

- a. two three
- b. two four
- c. four two
- d. three two
- e. one four

15. What is printed when the following line of code is executed?

```
A a = new B(5);
```

- a. four
- b. one four
- c. one
- d. two
- e. four one

16. Assuming that the variable b has been instantiated as a B type object, what is printed when the following line of code is executed?

```
b.doStuff();
```

- a. six
- b. four
- c. five
- d. two
- e. three

Questions 17 – 19 refer to the Point class, which will be used to represent points in the xy-coordinate plane:

```

public class Point{
    private double x, y;

    public Point() {
        //code not shown
    }
}

```

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```

    }
    public Point(double a, double b){
        x = a;
        y = b;
    }
    // ... other methods not shown
}

```

17. Which of the following is a correct mutator method?

a.

```

public double getX() {
    return x;
}

```

b.

```

public double getX() {
    return a;
}

```

c.

```

public void setCoordinates (double a, double b) {
    x = a;
    y = b;
}

```

d.

```

public void setCoordinates (double a, double b) {
    Point p = new Point(a,b);
}

```

e. None of the above

18. The default constructor should set x and y to (0, 0) by calling the second constructor. Which of the following correctly does this?

a.

```

public Point() {
    this (0, 0);
}

```

b.

```

public Point() {
    x = a;
    y = b;
}

```

c.

```

public Point() {
    a = x;
    b = y;
}

```

d.

```

public Point(double a, double b) {
    x = a;
}

```

e.

```

public Point(double a, double b) {
    x = 0;
    y = 0;
}

```

19. Which of the following correctly implements the toString method?

a.

```

public void toString() {

```

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```
        return "x: " + x + " y: " + y;
    }
```

b.

```
public String toString() {
    System.out.println( "x: " + x + " y: " + y);
}
```

c.

```
public void toString(String s) {
    return s;
}
```

d.

```
public String toString() {
    return "x: " + x + " y: " + y;
}
```

e.

```
public void toString() {
    System.out.println( "x: " + x + " y: " + y);
}
```

20. Which of the following keywords allows a child class to access the overridden methods in a parent class?

- a. extends
- b. new
- c. super
- d. this
- e. None of the above