Fast Track to Java and OO Development – skill test

Full name:_____ Grade:_____

Q1 – What are *class variables*?
a) *Class variables* are static variables within a class but outside any method.
b) *Class variables* are variables defined inside methods, constructors or blocks.
c) *Class variables* are variables within a class but outside any method.
d) None of the above.

Q2 – A and E are classes
 - B and D are interfaces
 - C is an abstract class
Which ones are true? (Choose 3)
a) `class F implements B,C{...}`
b) `class F implements B{...}`
c) `class F extends A,E{...}`
d) `class F extends E{...}`
e) `class F implements B,D{...}`

Q3 – Choose the three legal identifiers.
a) `1stName`
b) `_4_`
c) `@name`
d) `$`
e) `getSize`

Q4 – Given:
```
public class Calculator {
      int num = 100;
      public void calc(int num) {
            this.num = num * 10;
      }
      public void printNum(){
            System.out.println(num);
      }

      Public static void main(String[] args) {
            Calculator obj = new Calculator ();
            obj.calc(2);
            obj.printNum();
      }
}
```
What is the result?
a) `20`
b) `100`
c) `1000`
d) `2`

Q5 – What is the size of `byte` variable?
a) 8 bit
b) 16 bit
c) 32 bit
d) 64 bit

Q6 – Given:
```
public class MyLoop {
      public static void main(String[] args) {
            String[] sa = {"tom ", "jerry "};
            for (int x = 0; x < 3; x++) {
                for (String s : sa) {
                        System.out.print(x + " " + s);
                        if (x == 1) {
                            break;
                        }
                }
            }
      }
}
```
What is the result?
a) `0 tom 0 jerry 1 tom 1 jerry`
b) `0 tom 0 jerry 2 tom 2 jerry`
c) `0 tom 0 jerry 1 tom 2 tom 2 jerry`
d) `0 tom 0 jerry 1 tom 1 jerry 2 tom 2 jerry`

Q7 – Given:
```
class Alpha {
      String getType() {
            return "alpha";
      }
}
class Beta extends Alpha {
      String getType() {
            return "beta";
      }
}
public class Gamma extends Beta {
      String getType() {
            return "gamma";
      }
      public static void main(String[] args) {
            Gamma g1 = new Alpha();
            Gamma g2 = new Beta();
            System.out.println(g1.getType() + " " + g2.getType());
      }
}
```
What is the result?
a) `alpha beta`
b) `beta beta`
c) `gamma gamma`
d) `Compilation fails.`

Q8 – Inheritance represents
a) *HAS-A* relationship.
b) *IS-A* relationship.

Q9 – What is correct syntax for *main* method of a java class?
a) `public static int main(String[] args)`
b) `public int main(String[] args)`
c) `public static void main(String[] args)`
d) None of the above.

Q10 – Which of the following stands true about [`default`] modifier of class members?
a) By default, variables, methods and constructors can be accessed by subclass only.
b) By default, variables, methods and constructors can be accessed by any class lying in any package.
c) By default, variables, methods and constructors can be accessed by any class lying in the same package.
d) None of the above.

Q11 – What is *Encapsulation*?
a) *Encapsulation* is a technique to define different methods of same type.
b) *Encapsulation* is the ability of an object to take on many forms.
c) *Encapsulation* is the technique of making the fields in a class `private` and providing access to the fields via `public` methods.
d) None of the above.

Q12 – Can constructors be inherited?
a) True.
b) False.

Q13 – What is the default value of float variable?
a) `0.0d`
b) `0.0f`
c) `0`
d) not defined

Q14 – What is *local variable*?
a) Variables defined inside methods, constructors or blocks are called *local variables*.
b) Variables defined outside methods, constructors or blocks are called *local variables*.
c) Static variables defined outside methods, constructors or blocks are called *local variables*.
d) None of the above.

Q15 – What is the default value of Object variable?
b) `0`
c) `null`
d) not defined

Q16 – Which of the following statements best represents *polymorphism*?
a) `ParentClass parentClassName = new ParentClassConstructor();`
b) `ChildClass childClassName = new ParentClassConstructor();`
c) `ParentClass parentClassName = new ChildClassConstructor();`
d) `ChildClass childClassName = new ChildClassConstructor();`
e) None of the above.

Q17 – Which of the following is true about *protected* access modifier?
a) Variables, methods and constructors which are declared `protected` can be accessed by any class.
b) Variables, methods and constructors which are declared `protected` can be accessed by any class lying in same package.
c) Variables, methods and constructors which are declared `protected` in the superclass can be accessed only by its child class.
d) None of the above.

Q18 – Which of the following is true about *private* access modifier?
a) Variables, methods and constructors which are declared `private` can be accessed only by the members of the same class.
b) Variables, methods and constructors which are declared `private` can be accessed by any class lying in same package.
c) Variables, methods and constructors which are declared `private` in the superclass can be accessed only by its child class.
d) None of the above.

Q19 – What is true about a `final` class?
a) A class declared `final` is a final class.
b) Final classes are created so the methods implemented by that class cannot be overridden.
c) It cannot be inherited.
d) All of the above.

Q20 – What is an *Interface*?
a) An *interface* is a collection of abstract methods.
b) An *interface* is an abstract class.
c) An *interface* is a concrete class.
d) None of the above.

Q21 – What is *inheritance*?
a) It is the process where one object acquires the properties of another.
b) Inheritance is the ability of an object to take on many forms.
c) Inheritance is a technique to define different methods of same type.

Q22 – What is *NullPointerException*?
a) A `NullPointerException` is thrown when calling the instance method of a null object or modifying/accessing field of a null object.
b) A `NullPointerException` is thrown when object is set as null.
c) A `NullPointerException` is thrown when object property is set as null.

Q23 – Which of the following is FALSE about the `String` type?
a) `String` is immutable.
b) `String` can be created using new operator.
c) `String` is a primary data type.
d) None of the above.

Q24 – What is the *JRE*?
a) JRE is a java based Graphical User Interface (GUI) application.
b) JRE is an application development framework.
c) JRE is an implementation of the Java Virtual Machine which executes Java programs.
d) None of the above.

Q25 – What are *instance variables*?
a) *Instance variables* are static variables within a class but outside any method.
b) *Instance variables* are variables defined inside methods, constructors or blocks.
c) *Instance variables* are variables within a class but outside any method.
d) None of the above.