Theoretical Questions

1. **What is the Java Virtual Machine? What is Bytecode?**
   It's an abstract computer that "run" programs written in Java. Through the JVM you can run Java program on many different platforms as long as the JVM is installed on that platform.

2. **What is the Java Classpath?**
   It's a parameter which tells the JVM where to look for classes and/or packages.

3. **How do you compile and run your java program without the help of an Integrated Development Environment (IDE) (e.g., an IDE like Eclipse)?**
   You can run an Java program written in a textfile (ending .java) through javac (command line tool).

4. **What is a JAR file?**
   It's a bundle consisting of Java classes, images and other files to make up a type of distributed archive file. Stands for Java ARchive and is (in the Java-world) often used to distribute Java programs and libraries.

5. **How do you declare the starting point of a Java application?**
   public static void main(String[] args) {}

6. **What is a package? Why is important to declare classes inside packages?**
   It's a namespace that organizes a set of classes and interfaces. Think of it like folders on the computer. Namespacing and organization is the key factors of using packages.

7. **What is an *interface*? Why is it important to not change them?**
   It's a type of protocol or "must do"-thingie. Your class needs to implement this abstract methods before it can work properly.

8. **Which visibility levels are available in Java? What is the default visibility for classes, methods, and fields?**
   Public, private, protected and the default is private-package (visible inside its own package).

9. **In the context of Java, what is an Exception? And what is an Error?**
   An Exception indicates conditions that a reasonable application might want to catch.
   An Error indicates serious problems that a reasonable application should not try to catch.

10. **What happened if your program terminates with an *OutOfMemoryError*, or *NoClassDefFoundErrror* *NullPointerException*?**
    OutOfMemoryError occurs when the application is out of memory. This results in a crash. NoClassDefFoundError occurs when an instance tries to load in the definition of a class and no definition of the class could be found. NullPointerException occurs when application attempts to use null in a case where an object is required. If not catched it will result in a crash.

11. **How do you handle Exceptions in your program?**
    Use try/catch to catch thrown exceptions and in one way or another try to inform or help the application to solve why the exception was throwned.
12. **Why is it important to test your code/application/product, before you deliver it to your customer/boss/teacher?**
    To reduce complications which is time consuming and can cost much money to solve. In school it can result in lower grade. A well tested application results in a high quality and confident application.
13. **What is JavaDoc? How do you write documentation with it?**
    It's a tool for generating API documentation in HTML format from comments in source code. By follow the correct syntax.