JAVA HomeWork 1

Q1: (A) Java'da derleyici standart olarak `public static void main(String[] args)` kodunu arıyor. Yani programın giriş noktası olarak ^^ bu metodu seçiyor. Diğer seçeneklerdeki `static` olmayan metodların çağrılabilmesi için önce bir `instance`sinin oluşturulması gerekiyor.

`Main` metodunun `Public` olması gerekiyor çünkü derlenirken dışarıdan çağırılabilmesi gerekiyor, `private` metodlar `class` dışarısından çağırılamaz.

`Final` olan herhangi bir objenin üstüne sonradan bir şey yazılamaz(method override). `main` metodumuzu diğer kullanacağımız `class` larda aynı şekilde kullanmayacağımız için `Final` yanlış bir kullanım olur.

`String[] args` derleyicinin tanıdığı main metoda gönderilen parametreleri içerir.

Q2: (A) This diagram demonstrates OOP desing in Java, Gold and Silver classes are bot sub classes of Metal Class with their own special attributes.

Q3: (C) Java bytecode is stored in .class which is unexecutable and this is where Java's platform independence comes from bytecodes generated by one platform can be executed in another platform.

Q4: (B) The code does not compile because of line 4. Because we imported Date method from 2 different sources we have to declare which one we want to use like line 5. If line 2 were to be deleted the code would complete compiling.

Q5: (A) Objects are grouped by their attributes and which procedures that they need to implement.

Q6: (D) Local variables only accesible by methods which they are inside of.

Q7: (B) The Java standard libraries include java.lang package by default, which contains a number of components that are used very commonly in Java programs. Java is useless without much of the functionality in `java.lang`, that's why `java.lang` is implicitly imported by the compiler for all programs.

Q8: (C) # is not a valid comment operator in Java Language.

Q9: (D) Two interfaces works OK but no public interface it has to be in its own file. Added another public class, throws `public classes must be defined in their own file` error. It can contain more than one non-public class.

Q10: (A) Two static class variables that can be accessed without creating an instance. Zero instance variables no instance created for public variables in class. One local variable in main method.

Q11: (B) Unused imports can be deleted.

Q12: (A) Can't refer to the non-static field birds.

Q13: (D) Java is a pure object oriented programming language where code is written in form of classes. `javac` command generates .class file which contains bytecode which can be executed in to the native machine code in different platforms. `java` command wasn't able to execute Q13.class or Q13.java.

Q14: (D) Class, interface, enum or package expected at the first line of java code, comments ignored by compiler so comments can be at the first line too.

Q15: (C) Packages allow you to limit access to classes, methods or data from outside the package. It's possible to restrict access inside the package too by creating private classes, methods and datas.

Q16: (B) `javac` compiles `.java` files into bytecode `.class` file and `java` command executes them. `java` command takes no .filetype argument.

Q17: (D) In encapsulation, the variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class by making them `private`. Therefore, it is also known as data hiding. Getters and Setters can be used as public classes to make controlled access to variables.

Q18: (D) `height` has not been defined at that scope.

Q19: (A) Bytecode is a compiled code that is ready to run on any operating system with a compatible JVM.

Q20: (D) A semicolon used for terminating a statement.

Q21: (C) tolls.yesterday can be accessed as Q21.yesterday because it's a static variable and accessible without creating an object but also tolls.yesterday works too.

Q22: (C) variable type must be declared, cant declare 2 types to one variable and type has to be a valid type.

Q23: (D) Platform independence allows a Java Class to be run on a wide variety of computers and devices.

Q24:(A) Java Virtual Machine is software that converts the required part of the byte code into its equivalent executable code. Java Virtual Machine loads executable code into Random Access Memory. If a Java Virtual Machine is in windows operating system environment then it converts its equivalent executable code and this executable code will be understood by windows operating system environment only. Same goes for if JVM is in another operating systems. That leaves behind only (A) for correct answer.

Q25: (B) Static class variables accessible through entire package with `'ClassName.VariableName'` call.

Q26: (C) At Q26.java could not access the package within the package that's why (A) eliminated, other classes have not been imported.

Q27: (C) Package statements comes first and then imports and then classes. Mixing the order causes compilation errors.

Q28: (D) `'java.lang.*'` is a default import doesn't need to be stated same goes with `'java.lang.Object'` which is inside of it. `'stars.*'` import can be deleted which is unused. Total 3.

Q29: (C) Because list indexing startes from 0 => Red, 1 => deer, 2 => White-tailed.

Q30: (B) The `'javac'` command compiles a `'.java'` file into a `'.class'` file.

Q31: (B) Java allows method overloading which is commonly used on constructors.

Q32: (D) null and void isnt a valid return type banker method or class doesn't return any value so it must be void or class.

Q33: (A) `'x = 10'` from method getting overridden by `'x = 4'`.

Q34: (D) Inheritance is an important part of OOP which helps minimalizing the code.

Q35: (A) /////// is a valid comment with extra 5 slashes which is being treated as comment string.

Q36: (B) Entry point in the java application should take array of strings as argument String… is a vararg which qualifies. Entry point can be final but not recommended.(Q1)

Q37: (B) Defining variables outside class and public variables inside methods are not permitted.

Q38: (A) A valid Java class file must define at least one class but only one of them can be a public class.

Q39: (D) The file extension of a Java source code is .java

Q40: (C) The code wont compile because of line 6, valid use of either of Math methods should be like this `pocket.complex.Math.floor(5)` or `java.util.Math.floor(5)`

Q41: (A) Packages inside imported packages, ".female package" in this case, is not accesible.

Q42: (B) Encapsulation is hiding data from other classes platform independence is about java not unit or attributes, polymorphism is method overloading, overriding etc.

Q43: (A) Can't access sub-packages without adding them individually (Q41.java)

Q44: (C) Can't make a static reference to a non-static variable new Keyboard Object has to be created before accessing numLock.

Q45: (D) Scope of track variables are different. (Q10.java)

Q46: (B) At `printColor` method the argument `String color` gets overridden by `color = "purple"` line the answer will always be "purple".

Q47: (C) Periods are used for seperation packages. Ex: `java -d . CompiledFileName`

Q48: (C) There are no valid entry point of code here. `String… args` argument should have been added to main method.

Q49: (C) According to diagram there is a `Book class` with `numberOfPages` attribute and a method called `getRating`.

Q50: (C) JVM does not know how to create an instance of a class. It needs a standart way to start a Java application. Specifying all details about the main method and making it static provides JVM a standart way to start a java application. By making main method static the JVM can invoke it using the class name which is passed on command line.

Macro used for code snippets.

```
Sub Codify()
   With Selection
     .MoveLeft Unit:=wdCharacter, Count:=1, Extend:=wdExtend 'Get rid of space when double click select
     .Text = "'" & Selection.Text & "'"
     .Font.Name = "Courier Std"
     .Font.Size = 10
   End With
End Sub
```