

- 1) From which Android version was ART originally introduced?
 - a. 8.0
 - b. 6.0
 - c. 4.4

It was introduced in 4.4, so it became the standard soon after

- 2) Why did Google introduce DVM in Android?
 - a. Due to performance issues, because Android is a mobile OS and it has more hardware restrictions than a desktop OS
 - b. For security reasons, because the DVM can guarantee the isolation among apps
 - c. For performance reasons because the execution of an app is faster when performed inside a DVM

The third one is not formally wrong, but the first one it's more correct, we must say.

- 3) A dex file contains
 - a. the Dalvik bytecode obtained after the compilation of Java, Kotlin and C/C++ source code
 - b. the Dalvik bytecode obtained after the compilation of Java and Kotlin source code
 - c. the Dalvik bytecode obtained after the compilation of C/C++ source code

For C/C++ everything is compiled inside shared objects, while Java/Dalvik is bytecode for the machine.

- 4) Resources are
 - a. zipped in the APK file in a compressed format
 - b. compiled into the APK file
 - c. zipped in the APK file in an uncompressed format

The resources are not compiled, inside the compressed resources there are Manifest/Classes/Resources files compressed.

- 5) What is the main difference between DVM and ART?
 - a. The compilation procedure of Dalvik bytecode into machine code
 - b. The compilation procedure of Java source code into Dalvik bytecode
 - c. The compilation procedure of Java source code into binary code
- 6) What is the main criterion used by the current Android versions to compile an app code AOT?
 - a. methods that are classified as "hot" ones are compiled AOT
 - b. by default, all methods of the Android framework are compiled AOT
 - c. by default, all methods of the developers' custom code are compiled AOT

The mirrored classes are created inside the Android compiler and creates something that can be used for the AOT mechanism.

- 7) Zygote is...
 - a. the name of the process in which a system service is executed
 - b. the name of the process in which an app is executed

- c. the parent process of all the apps as the processes they execute in are forked from Zygote
- 8) What's the difference between the files boot.art and boot.oat?
- a. boot.art contains pre-initialized classes and objects from the Android framework, while boot.oat contains pre-compiled classes from the Android framework
 - b. boot.art contains pre-initialized classes and objects from the developers' custom code, while boot.oat contains pre-compiled classes from developers' custom code
 - c. boot.oat contains pre-initialized classes and objects from the developers' custom code, while boot.art contains pre-compiled classes from developers' custom code

The part of the framework is inside the ART files, which happens just copy-pasting inside Android files, while developers' code in the answer does not matter.

- 9) Disassembling means...
- a. Obtaining the uncompressed Dalvik bytecode from the compressed one
 - b. Obtaining the C/C++ source code from a shared object file
 - c. Obtaining the Java source code from the Dalvik bytecode

The disassembling procedure revolves around conversion also for C/C++ files, but here we take the bytecode and make it in a format which is human-readable. Here there is a mapping between unconverted/converted code.

- 10) Decompiling means...
- a. Obtaining the Dalvik bytecode from the machine code
 - b. Obtaining the Java source code from the Dalvik bytecode
 - c. Obtaining the assembly code from a shared object file

The third option is again disassembling, the first is again the compiling, while the second option is the right one, where we take the procedure.