Ans a:

Internal is inside the computer,usually soldered or integrated in some chip, not user accessible.

External is outside or pluggable, user accessible.

On smartphones this is more relevant as external storage is slower and is not trusted as install location of system apps or DRM files.

Internal storage is also faster as latency and bandwidth.

Ans b:

The cache is the temporary storage area of a device, which retains certain kinds of data. The aim of this is to speed up how quickly and smoothly your device operates and reduce how much data is processed and consumed.

After restarting your phone, have you ever noticed how slow your camera app is to open at first, while each subsequent attempt is quicker? The increase in speed after the initial launch of an app is thanks to this cached data. Similarly, you might find that websites load faster on a second visit. Once again, this is because files such as images have been previously stored in the cache.

There is often no need to manually manage cached data: Android is very capable of doing this on its own. However, if an app starts to misbehave or stop working, then you may wish to manually take this step.

Ans c:

**Normal Permissions:**

*Normal* permissions cover areas where your app needs to access data or resources outside the app's sandbox, but where there's very little risk to the user's privacy or the operation of other apps. For example, permission to set the time zone is a normal permission. If an app declares that it needs a normal permission, the system automatically grants the permission to the app. As of API level 23, the following permissions are classified as [PROTECTION\_NORMAL](https://developer.android.com/reference/android/content/pm/PermissionInfo.html):

* ACCESS\_LOCATION\_EXTRA\_COMMANDS
* [ACCESS\_NETWORK\_STATE](https://developer.android.com/reference/android/Manifest.permission.html)
* [ACCESS\_NOTIFICATION\_POLICY](https://developer.android.com/reference/android/Manifest.permission.html)
* [ACCESS\_WIFI\_STATE](https://developer.android.com/reference/android/Manifest.permission.html)
* [BLUETOOTH](https://developer.android.com/reference/android/Manifest.permission.html)
* [BLUETOOTH\_ADMIN](https://developer.android.com/reference/android/Manifest.permission.html)
* [BROADCAST\_STICKY](https://developer.android.com/reference/android/Manifest.permission.html)
* [CHANGE\_NETWORK\_STATE](https://developer.android.com/reference/android/Manifest.permission.html)
* [CHANGE\_WIFI\_MULTICAST\_STATE](https://developer.android.com/reference/android/Manifest.permission.html)
* [CHANGE\_WIFI\_STATE](https://developer.android.com/reference/android/Manifest.permission.html)
* [DISABLE\_KEYGUARD](https://developer.android.com/reference/android/Manifest.permission.html)
* [EXPAND\_STATUS\_BAR](https://developer.android.com/reference/android/Manifest.permission.html)
* [GET\_PACKAGE\_SIZE](https://developer.android.com/reference/android/Manifest.permission.html)
* [INSTALL\_SHORTCUT](https://developer.android.com/reference/android/Manifest.permission.html)
* [INTERNET](https://developer.android.com/reference/android/Manifest.permission.html)
* [KILL\_BACKGROUND\_PROCESSES](https://developer.android.com/reference/android/Manifest.permission.html)
* [MODIFY\_AUDIO\_SETTINGS](https://developer.android.com/reference/android/Manifest.permission.html)
* [NFC](https://developer.android.com/reference/android/Manifest.permission.html)
* [READ\_SYNC\_SETTINGS](https://developer.android.com/reference/android/Manifest.permission.html)
* [READ\_SYNC\_STATS](https://developer.android.com/reference/android/Manifest.permission.html)
* [RECEIVE\_BOOT\_COMPLETED](https://developer.android.com/reference/android/Manifest.permission.html)
* [REORDER\_TASKS](https://developer.android.com/reference/android/Manifest.permission.html)
* [REQUEST\_IGNORE\_BATTERY\_OPTIMIZATIONS](https://developer.android.com/reference/android/Manifest.permission.html)
* [REQUEST\_INSTALL\_PACKAGES](https://developer.android.com/reference/android/Manifest.permission.html)
* [SET\_ALARM](https://developer.android.com/reference/android/Manifest.permission.html)
* [SET\_TIME\_ZONE](https://developer.android.com/reference/android/Manifest.permission.html)
* [SET\_WALLPAPER](https://developer.android.com/reference/android/Manifest.permission.html)
* [SET\_WALLPAPER\_HINTS](https://developer.android.com/reference/android/Manifest.permission.html)
* [TRANSMIT\_IR](https://developer.android.com/reference/android/Manifest.permission.html)
* [UNINSTALL\_SHORTCUT](https://developer.android.com/reference/android/Manifest.permission.html)
* [USE\_FINGERPRINT](https://developer.android.com/reference/android/Manifest.permission.html)
* [VIBRATE](https://developer.android.com/reference/android/Manifest.permission.html)
* [WAKE\_LOCK](https://developer.android.com/reference/android/Manifest.permission.html)
* [WRITE\_SYNC\_SETTINGS](https://developer.android.com/reference/android/Manifest.permission.html)

**Critical Permissions:**

Critical permissions cover areas where the app wants data or resources that involve the user's private information, or could potentially affect the user's stored data or the operation of other apps. For example, the ability to read the user's contacts is a dangerous permission. If an app declares that it needs a dangerous permission, the user has to explicitly grant the permission to the app

* READ\_CALENDAR
* WRITE\_CALENDAR
* CAMERA
* CONTACTS
* READ\_CONTACTS
* WRITE\_CONTACTS
* GET\_ACCOUNTS
* ACCESS\_FINE\_LOCATION
* ACCESS\_COARSE\_LOCATION
* RECORD\_AUDIO
* READ\_PHONE\_STATE
* CALL\_PHONE
* READ\_CALL\_LOG
* WRITE\_CALL\_LOG
* ADD\_VOICEMAIL
* USE\_SIP
* PROCESS\_OUTGOING\_CALLS
* BODY\_SENSORS
* SEND\_SMS
* RECEIVE\_SMS
* READ\_SMS
* RECEIVE\_WAP\_PUSH
* RECEIVE\_MMS
* READ\_EXTERNAL\_STORAGE
* WRITE\_EXTERNAL\_STORAGE