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1. **Explain the Android Architecture and its key components?**
   a. Activities
   b. Servies
   c. Content providers
   d. Broadcast Receivers

2. **What is a Context and what is it used for?**
   a. A Context is an interface class that is used to derive Activities, Services, and Broadcast Receivers
   b. Its the core component of an android application

3. **What are the differences between a list view and a recycler view?**
   a. Decoration
   b. Animation
   c. List Management
   d. ViewHolder design pattern
   e. Material design

4. **What is a `ContentProvider` and what is it typically used for?**
   a. Data management with in the app

5. **How is automated testing done in android and what are the native tools?**
   a. there are native tools within Android studios to perform unit testing

6. **What is the relationship between the life cycle of an `AsyncTask` and an `Activity`? What problems can this result in? How can these problems be avoided?**
   a. AsyncTask can continue to run in the background when the Activity is destroyed, meaning it can result in a orphaned thread. To prevent this from happening, end the AsyncTask thread on the onDestroy/onStop of the Activity

7. **What is an `Intent`? Can it be used to provide data to a `ContentProvider`? Why or why not?**
   a. An Intent provides a way to connect between application components
   b. An Intent has a an action and a type, the defines the structure of the intent
   c. Intents can store data with bundles and extras, but since a Content Provider are is not a context it is unable to provide data to it

8. **Describe three common uses of an Intent.**
   a. Starting a Activity
   b. Starting a Service

  c. Receiving a Broadcast Receiver

9. **What is the difference between a fragment and an activity? Explain the relationship between the two?**

  a. An activity can contain multiple fragments

  b. A FrameView holds fragments and can hold multiple at a time. An activity is needed to communicate between fragments using an interface

10. **Explain the lifecycle of Services**

  a. There are 2 types of life cycles for Services, when it is bound an when it isn't. A regular service can live on indefinitely and a bound service is destroyed with its bound component.

11. **What is new for developers in each of the following:**

  a) Lollipop - Material Design

  b) Marshmallow - RecyclerView

  c) Nougat - animated hints, multiple screens

12. **If your instrumentation test is not running reliably, what might be the cause and how would you fix it?**

  a. server or device issues, try running it on a different device

13. **Describe the use of resources in Android**

  a. Resources can be used for localization, android studio can decided on the most appropriate resources to use depending on the users preferences

  b. Different resources are used depending on the state of the phone, for example: landscape view, low light

14. **What is difference between Serializable and Parcelable ? Which should you use in Android?**

  a. Serializable is a slower way of marshaling objects because it uses reflection to create many temporary objects. Parcelable is faster and should be used in Android.

15. **What is the difference between `Service` and `IntentService`? How is each used?**

  a. Intent service creates and run on a separate thread called the worker thread. A service is started by an intent and runs in the background.

16. **List 3 transitions in the activity lifecycle and when they occur?**

  a. onPause - when the view is partially obscured

  b. onStop - when the view is complete obscured

  c. onDestroy - when the application is terminated

17. **Give me an example of when you had to use SQLite on your App?**

  a. storing basic information- example Contacts: name, phone number, email, address

18. **What are some things you should avoid doing in a main thread?**

      a. long running operations

      b. things that can interfere or disrupt the UI

19. How would you architect an app so that it can support tablets?

      a. The application should be able to support all types of devices including tablets when

20. What is an adapter and when would you use it?

      a. An adapter is a way to bind a list objects to a set of views, it is commonly used when using a recycler view.

21. What is an intent filter and how does it work on Android?

      a. intent filter are declared in the manifest and it is used to receive implicit intents and broadcasts, sent from other apps or the system