ANDROID INTERVIEW QUESTIONS (30 mins)

I. SINGLE CHOICE QUESTIONS

1. **What is the name of the pattern which Android Listener [ie. OnClickListener, OnTouchListener, etc.] used?**
    a. Singleton Pattern
    b. Observer Pattern
    c. Factory Pattern
    d. Builder Pattern
    e. None of above

2. **What is the name of the pattern which is to avoid the dead-locking and mistakes when invoking database connection?**
    a. Singleton Pattern
    b. Observer Pattern
    c. Factory Pattern
    d. Builder Pattern
    e. None of above

3. **What is the right order of an Android Activity Life Cycle?**
    a. onCreate – onStart – onRestart – onResume – onPause – onStop – onDestroy
    b. onCreate – onStart – onResume – onPause – onStop – onDestroy
    c. onStart – onCreate – onResume – onPause – onStop – onDestroy
    d. onCreate – onRestart – onStart – onResume – onPause – onDestroy – onStop
    e. None of above

4. **When the application is killed by system, what method of Android Activity Life Cycle will be invoked?**
    a. onRestart
    b. onStart
    c. onResume
    d. onCreate
    e. None of above

5. **An Activity is already created. What are the two methods are invoked when Activity is visible on the screen and what are the two methods invoked when Activity is invisible from the screen?**
    a. onCreate – onStart and onStop – onDestroy
    b. onRestart – onResume and onPause – onStop
    c. onStart – onResume and onPause – onStop
    d. onStart – onResume and onStop – onPause
    e. None of above

6. **What is the most efficient way to transfer an object from an Activity to another Activity?**
    a. By Sharedpreferences
    b. By passing object to Activity [ie. new Activity(object)]
    c. By using static variable
    d. By implementing Serializable
    e. By implementing Parcelable

7. **How does Android system handle multiple-size screen-layout?**
    a. By drawable folders
    b. By layout folders
    c. By value folders
    d. By size calculation
    e. None of above

8. **What pattern does Android ListView use to improve performance?**
    a. Flyweight Pattern
    b. Adapter Pattern
    c. Composite Pattern
    d. ViewHolder Pattern
    e. Iterator Pattern

9. **What is the maximum memory limit of a process in Android?**
    a. 8MB
    b. 16MB
    c. 32MB
    d. 64MB
    e. Depends on the device's RAM

10. **Where can't a Android Handler be created?**
    a. AsyncTask
    b. MainThread
    c. Java Thread
    d. Service
    e. All of above

II. SHORT ANSWER

1. **What are the difference between Android Activity and Fragment?**
2. **What are the differences between ".png" and ".9.png"?**
3. **What are the steps to use GCM on Android devices?**
4. **What are the steps to use Google Map API on Android devices?**
5. **What do Android Volley, ActiveAndroid, GreenDAO and ButterKnife, GSon libraries do?**

III. SCENARIOS

Scenario 1

```
public class MainActivity extends Activity {

    private Button connect;
    private TextView result;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        connect = (Button) findViewById(R.id.connect);
        result = (TextView) findViewById(R.id.result);

        connect.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                HttpGet get = new HttpGet("http://google.com.vn");
                HttpClient client = new DefaultHttpClient();
                try {
                    HttpResponse response = client.execute(get);
                    String responseStr = EntityUtils.toString(response.getEntity());
                    result.setText(responseStr);
                } catch (IOException e) {
                    e.printStackTrace();
                }

            }
        });

    }
```

1) **What happens when the button "connect" is clicked? And why?**
2) **How should you improve this code?**

Scenario 2

```
public class MainActivity extends Activity {

    private Button addFragment;
    private FragmentManager manager;
    private FragmentTransaction transaction;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        manager = getFragmentManager();
        addFragment = (Button) findViewById(R.id.addFragment);
        transaction = manager.beginTransaction();
        addFragment.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                for (int i = 1; i < 10; ++i)
                    transaction.add(new MyFragment("Fragment " + i), "Fragment " + i);
            }
        });

    }


    private class MyFragment extends Fragment {
        private String id;

        public MyFragment(String id) {
            this.id = id;
        }

        @Override
        public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {
            TextView view = new TextView(getActivity());
            view.setText(id);
            return view;
        }
    }
```

1) Are there any issues with the MyFragment class? And what are the issues?

2) How many fragments are displayed and what are the name of these fragments on the screen (textview display) if the button “addFragment” is clicked?

Scenario 3

```
public class ThreadActivity extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        for (int i = 0; i < 10; ++i) {
            new Thread(new MyRunnable("Thread " + i)).start();
            new MyAsyncTask("AsyncTask " + i).execute();
        }
    }


    private class MyAsyncTask extends AsyncTask<Void, Void, Void> {

        private String name;

        public MyAsyncTask(String name) {
            this.name = name;
        }

        @Override
        protected Void doInBackground(Void... params) {
            try {
                Thread.sleep(5000);
                System.out.println(name + " end");
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
            return null;
        }
    }


    private class MyRunnable implements Runnable {

        private String name;

        public MyRunnable(String name) {
            this.name = name;
        }

        @Override
        public void run() {
            try {
                Thread.sleep(5000);
                System.out.println(name + " end");
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    }
}
```

1) How many threads are created when entering “ThreadActivity” screen?
2) What happens after 5 seconds, what is the order of “System.out.prinltn” command?