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5. (a) What are the benefits of using fragments in an android application? List the methods of fragment lifecycle. (2)
- (b) What are notifications in Android, how pending intent is associated with notification? List the steps which are required as per the build version of Oreo and above to post a notification. (3)
6. Write the main classes which are used to create and manipulate SQLite databases? What is the role of the Content Values class and Cursor? Give code snippets of Content Values and Cursor to support your answer. (5)

(1000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4581 E

Unique Paper Code : 32343407

Name of the Paper : Android Programming (SEC)

Name of the Course : B.Sc. (H) Computer Science

Semester : IV

Duration : 2 Hours

Maximum Marks : 25

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. **Section A** is compulsory.
3. Attempt any **three** questions from **Section B**.
4. Parts of a question must be answered together.

**SECTION A**

1. (a) Explain API levels and SDK in android. Give an example of API. (2)

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- (b) Write java code to display a toast with a custom message, for a longer duration. (2)
- (c) What are the different types of Context in Android, and what are their respective use cases? (2)
- (d) Explain the following : (2)
- (i) minSdk, compileSdk and targetSdk in build.gradle.
  - (ii) android:exported="true" of an Activity in Manifest.xml".
- (e) Write difference for the following : (2)
- (i) Parcel and Bundle
  - (ii) View and Viewgroup

### SECTION B

2. (a) What is the difference between Implicit and Explicit Intent. Write Java code snippet to support your answer. (2)

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- (b) How would you define the concept of intent filter in the context of Android development, and what are the applications of the three elements - action, data, and category - that are typically used in intent filters? (3)
3. (a) Write java code for sending a broadcast on click of a button and on receiving the broadcast generate a toast with a message "Hello from Android". Make suitable assumptions. (2)
- (b) Differentiate three types of menu in android. Give XML code to create an option menu listing names of any five countries. (3)
4. (a) List the methods from Async Task API and Describe any two methods of your choice by using an example. (2)
- (b) How can you use the Thread class in Java to generate random numbers every 5 seconds and display the number on a Text View in an Activity? What are the necessary methods that should be overridden and Interfaces to be implemented associated with the Thread class to generate random numbers and update the UI? (3)

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