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Total No. of Printed Pages: [2]

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BCA-MCA Dual Degree (Semester – 4th)
ANDROID APPLICATION DEVELOPMENT
Subject Code: BMCAS1401
Paper ID: 19340116

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consists of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consists of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. What is the purpose of layouts in Android development and provide examples of commonly used layout types.
- b. Define Text View elements in Android.
- c. Provide examples of different types of input controls, such as Edit Text, Button, and Check Box.
- d. Explain how themes are used to define the overall look and feel of an app, including colors, fonts, and layout styles.
- e. Define menus and radio buttons in Android development.
- f. What is the purpose of the Google APIs Explorer tool in Android app development?
- g. Define JSON and its significance in Android app development.
- h. Explain the importance of optimizing background tasks in Android app development.
- i. Define SQLite and its role in Android app development.
- j. Explain briefly the concept of a Content Provider in Android and its significance in sharing data between different applications.

Section – B

(5 marks each)

- Q2. Outline the process of testing and debugging Android applications using Android Studio.
- Q3. Explore different screen navigation patterns commonly used in Android app design. Discuss the pros and cons of navigation patterns such as tab navigation, drawer navigation, and bottom navigation.
- Q4. Discuss the role of Google APIs Explorer in Android app development. Explain how developers can use this tool to explore and interact with various Google APIs.
- Q5. Discuss the advantages of using Loaders over traditional approaches such as AsyncTask for loading data from a content provider or other data sources. Provide examples of scenarios where Loaders are used to load and manage data in Android applications efficiently.
- Q6. Describe the process of creating and publishing an Android Package file for distribution on the Google Play Store.

Section – C

(10 marks each)

- Q7. Discuss the Android activity lifecycle in detail, including the various lifecycle methods such as onCreate(), onStart(), onResume(), onPause(), onStop(), and onDestroy(). Explain the purpose of each lifecycle method and how they are invoked during different stages of an activity's lifecycle.
- Q8. Discuss the importance of user input controls in Android app development and explain how they enhance the user experience. Provide examples of different types of input controls, such as Edit Text, Button, Check Box, and Radio Button, and describe their respective functionalities.
- Q9. Discuss the optimization techniques for improving the performance and efficiency of background tasks and network requests in Android applications. Explain strategies for optimizing AsyncTaskLoader and Alarm Manager usage to minimize battery consumption and resource usage.