# BCA-5-03T-EC-B3: Introduction to Android

Total Marks: 100
External Marks: 70
Internal Marks:  30
Credits: 4
Pass Percentage: 40%

## INSTRUCTIONS FOR THE PAPER SETTER/EXAMINER

1. The syllabus prescribed should be strictly adhered to.
2. The question paper will consist of three sections: A, B, and C. Sections A and B will have four questions from the respective sections of the syllabus and will carry 10 marks each. The candidates will attempt two questions from each section.
3. Section C will have fifteen short answer questions covering the entire syllabus. Each question will carry 3 marks. Candidates will attempt any ten questions from this section.
4. The examiner shall give a clear instruction to the candidates to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.
5. The duration of each paper will be three hours.

## INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt any two questions each from the sections A and B of the question paper and any ten short questions from Section C.  They have to attempt questions only at one place and only once. Second or subsequent attempts, unless the earlier ones have been crossed out, shall not be evaluated.

| Course: Introduction to Android | |
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| **Course Code: BCA-5-03T-EC-B3** | |
| **Course Outcomes (COs)** <br> After the completion of this course, the students will be able to: | |
| CO1 | Gain proficiency in Android app development, understanding the Android Studio development environment, Java or Kotlin programming languages, and the fundamental concepts of building Android applications. |
| CO2 | Develop skills in designing user interfaces (UI) for Android applications, adhering to Android's design principles and guidelines to create visually appealing and user-friendly experiences. |
| CO3 | Understand the process of deploying Android applications on the Google Play Store, including the necessary steps for app submission, review, and updates. |
| CO4 | Learn to integrate and utilize various Android APIs and features, such as location services, camera access, notifications, and other functionalities to enhance the capabilities of Android applications. |

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| CO5 | Gain a comprehensive understanding of the Android ecosystem, including the Android OS architecture, application lifecycle, and how apps interact with the underlying system and hardware. |

## Detailed Contents:

| Module | Module Name | Module Contents |
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| **Section-A** | | |
| **Module I** | **Introduction to Android** | Introduction to Android: Android as a popular mobile platform, History of Android, Evolution of Android, Features of Android, Comparison of mobile Operating systems, Devices that run Android as the Operating System, Categories of Android applications Android Architecture: Introduction, Android Architecture, Android Architecture, Types of mobile applications, Application Fundamentals |
| **Module II** | **Activity lifecycle** | Activity lifecycle: Introduction, what is an Activity in Android? Android Application Fundamentals, what are the Android process states? Android Development Environment: Introduction, Reasons for Android Development, Android Development Platforms, Features and Tools, Configuring Android Development Environment, Setting Up Android Development Environment, Install Android for Windows 10 |
| **Section-B** | | |
| **Module III** | **Integrating Multimedia** | Integrating Multimedia: Introduction to Multimedia, Audio and video integration into Android Application Development, Multimedia for Android Interactive Application Development, Camera functions in Android Application Development, Supported Media Formats, Saving Data on Android Devices: Android Storage Options, Shared Preferences, Internal Storage, External Storage, Saving data in SQLite databases |
| **Module IV** | **Connectivity and the cloud** | Connectivity and the cloud: Connecting devices wirelessly, performing network operations, Considerations when transferring data, syncing to the cloud with information delivery models, Push Notification, publish to Android Market: How can you obtain an Android Application? App Stores, Revenue Models, Google Play, Process of Publishing an Android Application, Performance Profiling, Android Monitor Overview, Android Monitor Basics, Profiling a Running App in Android Monitor, How Android Manages Memory, Battery Analysis, Optimizing Battery Analysis, |

| | | Security: Security Concerns of an Android Application, Security Provided by the OS, Information Leakage, Device Management Policies |
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## Books

1. Dawn Griffiths and David Griffiths, "Head First Android Development", Shroff/O'Reilly
2. Bill Phillips and Chris Stewart, "Android Programming: The Big Nerd Ranch Guide", Big Nerd Ranch Guides
3. Neil Smyth, "Android Studio 4.0 Development Essentials - Kotlin Edition" , O'Reilly Media
4. Michael Burton and Donn Felker, "Android App Development for Dummies", For Dummies
5. John Horton, "Android Programming for Beginners", Packt Publishing