CERTIFICATE IN MOBILE APPLICATION DEVELOPMENT (CMAD)

Assignments

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(January, 2025 & July, 2025 sessions)

BCS-091, BCS-092, BCS-093, BCS-094, BCSL-091

Assignments



SCHOOL OF COMPUTER AND INFORMATION SCIENCES INDIRA GANDHI NATIONAL OPEN UNIVERSITY MAIDAN GARHI, NEW DELHI – 110 068

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Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date. Please refer to <u>http://www.ignou.ac.in</u> for latest updates

2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to CMAD Programme Guide.

3. To become eligible for appearing the Term End Practical Examination for the lab courses, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the CMAD Programme Guide.

Course Code	:	BCS-093
Course Title	:	Introduction to Android
Assignment Number	:	CMAD/091/Assignment /2025
Maximum Marks	:	25
Last Dates for Submission	:	30 th April, 2025 (for January session)
		30 th October, 2025 (for July session)

There are Ten (10) questions in this assignment. Each question carries 2.5 marks. Answer all the questions. You may use illustrations and diagrams to enhance the explanations. Include the screen layouts also along with your assignment responses.

Ouestion 1: Compare the Android platform with one other open-source mobile operating system, focusing on community contributions and licensing models. **Question 2:** Explain the role of the Dalvik Virtual Machine (DVM) and ART in Android's runtime environment. Discuss their impact on application performance and memory management. **Ouestion 3:** Design a flowchart to depict a custom Activity Lifecycle that includes logging the state transitions. How would you manage state persistence during configuration changes? Discuss the features of Gradle used in Android Studio. Provide an example of **Question 4:** how to include a third-party library in your Android project using Gradle. **Question 5:** Outline the strategies to ensure compatibility with Android's fragmented ecosystem. Include techniques to handle API level differences and screen resolutions. **Question 6:** Describe the use of Espresso for UI testing in Android. Write a test case to verify the behavior of a button click that changes the text of a TextView. **Question 7:** Explain the differences between SQLite, Shared Preferences, and Room Database in Android. Provide a scenario where each storage option is the most appropriate. **Question 8:** Describe the steps required to publish an Android application to the Google Play Store. Include considerations for setting up a monetisation strategy using in-app purchases. **Ouestion 9:** Discuss three common performance bottlenecks in Android apps. Suggest strategies to profile and optimise application performance using Android Studio. **Question 10:** Propose measures to secure sensitive user data policies in an Android application.