



RAN-2211000105010003

B.C.A. (Sem. - V) Examination October - 2025

Advanced Mobile Computing (Old) : (Paper - 501- 02)

Time: 3 Hours]

[Total Marks: 70

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) All questions are compulsory.
- (3) Figure to the right indicate full marks
- (4) Mention your options clearly.

Seat No.:

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Student's Signature

Q. 1 Multiple-Choice Questions

(10)

1. What keyword in Kotlin is used to declare an immutable (read-only) variable?
A) var B) val
C) const D) final
2. Which control flow construct in Kotlin replaces a switch statement?
A) if- else B) when
C) match D) select
3. Which of these is not a Kotlin collection?
A) List B) Set
C) Map D) Tuple
4. To start development in Kotlin using Android Studio or IntelliJ, what must you configure?
A) SDK path only B) Gradle path only
C) Both SDK and Gradle settings D) None
5. In JSON, which symbol denotes the start of an array?
A) { B) (
C) [D) ;
6. Which Android component is invoked to send data between activities?
A) Service B) Listener
C) Callback D) Intent
7. An implicit Intent can be used to:
A) Start a specific class only
B) Request any component that can handle the action
C) Only receive data
D) Only save files
8. Which operation does NOT belong to CRUD?
A) Create B) Read
C) Undo D) Delete
9. To capture an image using device camera, which Android Intent action is used?
A) ACTION_CAMERA_CAPTURE
B) ACTION_IMAGE_CAPTURE
C) CAMERA_OPEN
D) CAPTURE_IMAGE_ACTION

10. Which open-source database is commonly used in Android apps for local storage?
A) Oracle B) SQL Server
C) SQLite D) MongoDB

Q. 2 Do as directed (14)

- A. Define Kotlin, and explain its key features that make it suitable for modern mobile development. (5)

OR

- A. Discuss advantages of Kotlin over Java with examples. (5)
B. Discuss Kotlin's null-safety features with examples using !! and ?. (5)

OR

- B. Explain the working of loops in Kotlin (for, while, do-while) with examples. (5)
C. What are the main data types in Kotlin, and also explain conditional constructs (if, when) with sample code. (4)

Q. 3 Do as directed (14)

- A. Explain the concept of primary and secondary constructors in Kotlin with examples (5)

OR

- A. Discuss inheritance in Kotlin. (5)
B. Explain polymorphism in Kotlin with examples. (5)

OR

- B. Explain the use of interfaces in Kotlin. Show how multiple interfaces can be implemented in one class. (5)
C. What are abstract classes in Kotlin? Explain with suitable example. (4)

Q. 4 Do as directed (14)

- A. Explain event handling in Android using Kotlin with an example (set On Click Listener). (6)

OR

- A. Explain the difference between explicit and implicit Intents with examples. (6)
B. Write a JSON object representing a "Student" with id, name, subjects (array) and marks. (5)

OR

- B. Explain the features of JSON and its advantages over XML. How are JSON Objects and Arrays represented? Provide a JSON example containing nested arrays or objects. (5)
C. Explain Constructor overloading with example. (3)

Q. 5 Do as directed (Any Three) (18)

- A. Explain the process of accessing user's current GPS location. (6)
B. Explain CRUD operations with SQLite in Android. Provide code snippets for insert and read. (6)
C. Explain how an app can capture an image using the device camera with ACTION_IMAGE_CAPTURE. (6)
D. Describe the difference between Constraint Layout and Linear Layout with suitable examples. Why is Constraint Layout preferred for complex UIs? (6)

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