

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

MCA DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Second Semester

Master of Computer Applications

MC4204 / PMCT2424 – Mobile Application Development

Regulations – 2021 & 2024

Duration : 3 Hrs

Maximum : 100 Marks

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	State the concept of a mobile application model and its significance in app development.	L2	1	2
2.	How do mobile device profiles impact the design and functionality of mobile apps?	L2	1	2
3.	Differentiate between multimodal UI and gesture-based UI.	L2	2	2
4.	What factors should be considered for designing an effective gesture-based UI in mobile apps?	L2	2	2
5.	How does dynamic memory management enhance performance in resource-constrained devices?	L2	3	2
6.	What is the role of dynamic linking in mobile app development?	L2	3	2
7.	Identify the main components involved in Android application architecture.	L1	4	2
8.	Briefly explain the function of Intents in Android apps.	L2	4	2
9.	Discuss one real-world example where location-based services (LBS) are used in mobile applications.	L2	5	2
10.	How is telephony service such as SMS and calls integrated into Android applications?	L2	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Compare and contrast cross-platform frameworks like Flutter, React Native, and Xamarin.	L2	1	8
	ii Analyze mobile development frameworks to solve challenges in managing app resources across multiple platforms.	L4	1	8
	Or			
	b i Explain the infrastructure requirements for deploying mobile applications.	L2	1	8
	ii Analyze how cross-platform tools like Flutter or React Native optimize mobile application development.	L4	1	8
12.	a i Categorize the different UI design patterns (e.g., Material Design, Flat Design) and evaluate their impact on usability.	L4	2	8
	ii Construct a mobile UI layout using layout managers and explain its responsiveness in varying screen sizes.	L4	2	8
	Or			

	b	Analyze the concept of Multimodal User Interfaces (UIs). Discuss how integrating various input models (e.g., speech, touch, and gestures) enhances the user experience in modern applications.	L4	2	16
13.	a i	Assess the importance of dynamic memory management in mobile app development.	L4	3	8
	ii	Examine how design patterns (e.g., Singleton, Observer) contribute to efficient memory usage in mobile applications.	L4	3	8
		Or			
	b i	Formulate strategies for improving mobile app performance through multithreading and concurrency management.	L4	3	8
	ii	Investigate how resource sharing and multitasking affect mobile app stability and performance on multi-core devices.	L4	3	8
14.	a i	Critique the security measures required for protecting user data in mobile applications, especially concerning encryption and authentication.	L3	4	8
	ii	Identify the role of Android security components (e.g., Keystore, Permissions) in ensuring app security.	L3	4	8
		Or			
	b i	Investigate how Intents facilitate inter-app communication in Android. Provide a scenario where multiple apps communicate via Intents.	L3	4	8
	ii	Design a mobile storage solution for an Android app using SQLite or SharedPreferences, and evaluate its efficiency for storing user data.	L3	4	8
15.	a i	Construct an architecture for a real-time chat application that uses REST APIs and WebSockets for communication.	L2	5	8
	ii	Compare mobile app databases (e.g., SQLite vs. Firebase) and decide which is better for a social media app needing offline data access.	L2	5	8
		Or			
	b i	Identify the advantages of integrating cloud storage (e.g., Firebase Cloud Firestore) in mobile applications.	L2	5	8
	ii	Illustrate how a task manager app can utilize alarms and push notifications to remind users of upcoming deadlines.	L2	5	8