Name: **Enrolment No:**	

UPES

End Semester Examination, December 2024

Course: Mobile Application Development Using Android **Semester: V**

Program: B.Tech CSE GG **Time: 03 hrs.**

Course Code: CSMC3025 **Max. Marks: 100**

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Explain the benefits of using guidelines in Android development and how they help with UI design.	**4**	**CO2**
Q 2	Define the three visibility levels of an Android view. Describe each level and explain how they affect the visibility and behavior of views in an application.	**4**	**CO3**
Q 3	Explain the use of the keyword 'it' in list filters in Kotlin	**4**	**CO2**
Q 4	Differentiate between wrap content and match parent in Android Layout.	**4**	**CO4**

Q 5	Consider the following Kotlin code snippet:
	fun encodeMessage(text: String, transform: (String) -> String): String {
	return transform(text)
	}
	
	val result1 = encodeMessage("acronym", { input -> input.toUpperCase() })
	val result2 = encodeMessage("acronym") { input -> input.toUpperCase() }
	
	println(result1)
	println(result2)
	
	Predict the output of the code written above?
		4	**CO1**

SECTION B
(4Qx10M= 40 Marks)

Q 6	Analyze the relationship between fragments, activities, and the back stack in Android. Include a suitable diagram to illustrate the flow and interactions.	**10**	**CO3**

Q 7	Explain the 'Separation of Concerns' (SoC) principle in app development. Discuss how this principle helps in organizing code, improving maintainability, and reducing complexity. Provide examples to illustrate how it is implemented in Android development.	**10**	**CO2**
Q 8	Discuss the following layouts with code: a) Constraint b) Relative c) Linear d) Frame e) Absolute	**10**	**CO3**
Q 9	A palindromic string is a string that reads the same backward as forward, ignoring spaces, punctuation, and case differences (for example, 'Madam' and 'racecar' are palindromic). Write an extension function in Kotlin for the String class, called isPalindrome, which checks whether the given string is palindromic. The function should return true if the string is palindromic and false otherwise. Ensure that your function handles cases, spaces, and punctuation correctly. **OR** Write a Kotlin function that takes an array of size M-1 containing all numbers from 1 to M except one missing number. The function should return the missing number. For example, given M = 7 and the array [1, 2, 4, 5, 6, 7], the function should return 3.	**10**	**CO1**
SECTION-C (2Qx20M=40 Marks)			
Q 10	Describe how to implement fragment navigation in an Android application, providing code examples that demonstrate how to navigate between fragments using the Navigation component or FragmentTransaction. **OR** Describe in full detail how to create and populate menus in an Android application. Include code examples for options menus, explaining how to handle menu item clicks and customize the menu appearance and behavior	**20**	**CO4**
Q 11	Develop an Android app that allows a user to input two numbers and determines whether these numbers are co-prime (i.e., they have no common factor other than 1). Provide the app's code along with XML code, along with a clear explanation of how it checks for co-primality.	**20**	**CO1**