COMSATS UNIVERSITY ISLAMABAD (CUI)
DEPARTMENT OF COMPUTER SCIENCE
MIDTERM EXAMINATION SPRING -2026
BS (CS, SE, AI)– VI SEMESTER

Course: CSC 303 Mobile Application Development **Time Allowed:3:50PM-5:20PM**
Instructor: Qaseeah Ahmed, Shujat Hussain, Sara Ali
Maximum Marks: 30 **Dated: 21st April, 2026**

- *All questions are self-explanatory and require no further explanations during exam time.*
- *Make sure that you have signed the attendance sheet before leaving the examination room.*
- *Return the question paper along with the answer sheet.*
- *Attempt all questions.*

(CLO – 1: Apply DART concepts to develop mobile application user interfaces, BT-3) **[4+4=8 Marks]**

Q.# 1.

(Assume inputs where and if needed)

(Implement only the backend logic DART, assume UI is already implemented)

A mobile application screen has already been made for a **Smart Parking System** where users can enter the **number of hours parked** and select the **vehicle type (Car or Bike)** from a dropdown menu. A button labeled **"Calculate Fee"** is provided on the screen. When the user presses this button, use the Dart logic to **calculate the total parking fee** based on the following rules: for **cars**, the **first 2 hours → Rs. 50/hour** and **additional hours → Rs. 30/hour**, while for **bikes**, the **first 2 hours → Rs. 20/hour** and **additional hours → Rs. 10/hour**.

After calculating the fee, the program should evaluate conditions to display appropriate alerts like **"Long Parking Duration" (if hours > 8)**, **"High Parking Charges" (if fee > Rs. 300)**, or **"Long Duration & High Charges" (if both conditions are true)**. Additionally, handle the **edge case (hours = 0)** by displaying **"No parking duration entered."** The final output should clearly display both the **calculated parking fee** and the **relevant alert message**.

(CLO –2: Construct attractive front-end for mobile applications using latest technologies, BT-6) **[5+5 = 10 Marks]**

a) Create a screen that displays a list of courses (e.g., Flutter Development, Web Development, AI Basics, Data Science, Cyber Security) along with their fees. Use **ListView.builder or Column** and design each item inside a **Container with padding and margin**. Add a centered title **"Available Courses"**.

b) Allow the user to select **preferred learning modes** (**Online, On-Campus, Hybrid**) using **Checkbox widgets**. When the user presses **"Enroll Now"**, display the **selected modes** using **ScaffoldMessenger**.

(CLO –3: Develop backend for mobile applications using modern technologies, BT-6)

[6+6 = 12 Marks]

Create a **two-page Flutter application** for a **Library Book Borrowing System**. The first page should include a form with **Borrower Name, Email, Book Title** (dropdown or Checkbox), **Borrow Date** and **Return Date**. If any field is empty, display a **popup error** using **ScaffoldMessenger**. On successful submission, navigate to the **Borrowing Status Page**, passing the **Book Title** and dates. The second page should show a **Borrowing ID, Borrower Name, Book Title, Borrow/Return Dates** and **Status** (**Overdue** or **On Time**). If any field is incomplete, show a **popup reminder**. After saving, display a **confirmation popup** using **ScaffoldMessenger**. Students should implement navigation, data passing and form validation.

*****BEST OF LUCK*****