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PRESIDENCY UNIVERSITY

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Bengaluru

Mid Term Examinations - October 2026

Date: 05/10/2026 **Time:** 11:45 AM - 01:15 PM

Course Code: CSD3421 **Course Name:** Mobile Application for Data Science

Semester: Seventh Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2	CO3
Marks	24	44	22

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	What is meant by cross-platform mobile application development?	2	CO1	BT1
2	What is the purpose of the Flutter SDK?	2	CO1	BT1
3	What is form validation in Flutter?	2	CO2	BT1
4	Define responsive UI development.	2	CO2	BT2
5	A mobile application sends a request to retrieve a sensor record, but the requested resource does not exist on the server. Which HTTP status code should the application handle, and what does the code indicate?	2	CO3	BT3

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain the Flutter framework and its architecture. Discuss the role of Dart and the Flutter SDK.	10	CO1	BT2
7	Explain object-oriented programming in Dart. Describe classes, objects, and constructors with examples.	10	CO1	BT2

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Explain Material Design principles in Flutter and describe how they support UI development.	10	CO2	BT2
9	Explain how Row, Column, Stack, and Container widgets are used to design user interfaces in Flutter.	10	CO2	BT2

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
10	Write a Flutter application using a TextField to accept a user's name and an ElevatedButton to display a greeting.	10	CO2	BT3
11	Write a Flutter application to display a student's name, register number, and department using Text widgets.	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M

PTO (Please Turn Over)

Q.N.	Questions	M	CO	BT
12	A university wants to develop a mobile application that allows students to access their academic information. Design suitable REST API interactions for the following operations: Retrieve all students Retrieve a particular student using student ID Add a new student Completely update a student's information Partially update a student's CGPA Delete a student Apply REST principles to: a) Design appropriate resource-oriented URIs for the six operations. (3 Marks) b) Select the appropriate HTTP method for each operation. (3 Marks) c) Give one example of a suitable query parameter for filtering or pagination. (1 Mark) d) Explain why nouns such as /students are preferred over action-oriented URIs such as /getStudents. (1 Mark) e) Explain how statelessness supports communication between the mobile client and server. (2 Marks)	10	CO3	BT3

13	A mobile cybersecurity application uploads a detected security event to a server. The server endpoint is:
	https://api.example.com/api/v1/sensordata
	The application needs to send:
	{
	"deviceId": "AND-2201",
	"temperature": 28.5
	}
	
	and authenticate using a bearer token.
	
	Apply your knowledge of HTTP requests to design the request and explain how the mobile application should process the server response.
	
	a) Write the HTTP method and endpoint that should be used. (1 Mark)
	b) Identify two appropriate HTTP headers and explain their purpose. (2 Marks)
	c) Construct the JSON request body. (2 Marks)
	d) Show the important components of a possible successful HTTP response. (2 Marks)
	e) Explain how the application should handle a 401, 404, and 503 response. (3 Marks)
		10	CO3	BT3