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Daffodil International University

Faculty of Science & Information Technology
Department of Computer Science & Engineering
Midterm Examination, Spring 2026
Course Code: CSE413 Course Title: Mobile Application Design
Level: 4 Term: 2 Batch: 63

Time: 01:30 Hrs **Marks: 25**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.		You are designing a Mobile Health Tracker App that allows users to log their daily exercise, monitor heart rate, and track sleep patterns. The app is intended for quick user testing and initial design planning.		
	a)	Which fidelity level is most appropriate for creating the initial prototype of this app? Explain the basic purpose of this fidelity level.	**[3]**	**CO1**
	b)	Explain the role of design in this Mobile Health Tracker App.	**[2]**	
2.		You are developing a mobile note-taking application "NoteBridge" that works both offline and online. Each note contains id, title, and content. When offline, data should be stored in a high-performance object-based local NoSQL database optimized for mobile devices. When online, data must synchronize in real time with a cloud-based NoSQL database suitable for multi-user environments.		
	a)	Analyze the requirements and choose appropriate database technologies for both local storage and cloud synchronization. Implement CRUD operations for the chosen technologies.	**[8]**	**CO3**
	b)	Analyze and evaluate the differences between Material Design and Apple Human Interface Guidelines (HIG) in terms of design philosophy, interaction style, and visual principles.	**[4]**	
3.		You are designing a Hospital Management Mobile App named "HealthConnect" that allows patients to book appointments with doctors, view lab reports, and check doctor availability.		
	a)	Identify and explain the key components of the mobile ecosystem that would be involved in supporting this application, and discuss how each component contributes to the functionality, performance, and usability of the app.	**[4]**	**CO2**
	b)	Propose a Flutter navigation structure for the Appointments, Reports, and Doctors screens. Justify your choice and provide a code snippet implementing it.	**[4]**	