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| DHA SUFFA UNIVERSITYdha_suffa_logo  Department of Computer Science  Mid Semester Examination - Spring -2023  **COURSE TITLE: COURSE CODE: SE-1002**  Class/Section: SE- 4A/4B Time Allowed: 2 Hours  Course Instructor: Syed Saad Luqman Max Marks: 30  Date: 02-05-2023 Moderated by: \_\_\_\_\_\_\_\_\_\_\_\_  Student’s Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reg. No: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| **Question 1: [5+2] Marks**  You are required to build an architecture of a “Learning Management System” LMS Software for a University; how would you proceed?   1. Briefly describe the steps required in getting started with the software architecture for LMS. 2. Explain the most crucial process involved in software development lifecycle that contributes to project success.   **Question 2: [3+5] Marks**    The university would like to have an LMS Software with following features provided in Draft,  Draft: This software should be accessed through any device and any corner of world by teachers and students of our university to collaborate with respect to their assigned course. For every course there must be an option for managing announcements, files, quizzes, assignments and student attendance. This software should be built, tested and deployed in least time, and should also be reliable and maintainable.   1. Extract and list out functional and non-functional requirements provided in draft and differentiate between the functional and non-functional requirements in general. 2. Define SW Architecture or Architectures that comply with draft requirements and explain why?   **Question 3: [3+5] Marks**     1. What’s a Single Tier Architecture, why is there a need for a Multi-Tier Architecture and what are its benefits? 2. Under which circumstance should we consider a microservice architecture over a monolith architecture?   **Question 4: [4+3] Marks**     1. What kind of services does cloud computing platform provides and what are the level of abstractions for each of those services? 2. Differentiate between the following API Architectural Styles and explain which API style is best suited for CRUD applications and justify your choice.   - REST  - SOAP  - RPC  - GraphQL |
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