



COMSATS University Islamabad (CUI)

Department of Computer Science
Midterm Examination spring - 2025
BS (AI/CS /CYS/ DS /SE)

ATTA ULMOST

SP24 BSE 007

Course: CSC291-Software Engineering (Concept)

Dated: 18-04-2025

Instructor: Hafiza Sundus Farooq

Maximum Marks: 25

Time Allowed: 90 Minutes

Note:

- 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.

CLO-1: Explain the concept of software engineering along with its processes and deliverables.

Q.1. Explain any four Principles of Agile Methods.

[4 Marks]

Q.2. Classify each description below by matching it with the single most appropriate model from the given list. Write model and then its matching descriptions. (Note: A term may match none, one, or more than one description.) [4 Marks]

Models

A. Spiral Model

C. Prototype

E. Kanban

G. Incremental Process Model

B. V-Model

D. Waterfall Model

F. DevOps

H. Extreme programming

Descriptions

1. Provides structure and clarity to inexperienced staff due to its easy to understand nature.
2. Aims at continuous improvement, flexibility in task management, and enhanced workflow by using board.
3. People working together to conceive, build and deliver secure software at top speed.
4. Used when Requirements are very well known
5. Combines elements of the waterfall model applied in an iterative fashion.
6. Is built with basic and critical functions for a partial requirements specification.
7. Couples Iterative nature of prototyping + waterfall model.
8. Also known as the Verification and Validation model.

CLO – 2: Identify functional and non-functional requirements for a medium sized software system.

Q.3. A hospital plans to develop a Mobile Health Monitoring Application to help doctors, nurses, and patients to track vital signs (like body temperature, heart rate and blood pressure), medication schedules, and health progress in real-time. The app will be used by healthcare professionals to monitor patients remotely and by patients to manage their own health data.

Which elicitation techniques will you use for requirements elicitation and why? [6 Marks]

CLO – 3: Construct appropriate design models for the structure and behavior of a medium sized software system.

Q.4.

[6 + 5 Marks]

- a. **Illustrate** the differences among 'include', 'extend', and 'generalization' relationships in use case diagrams by applying each with a relevant example scenario.
- b. **Demonstrate** your understanding of use case modeling by constructing a use case in tabular format for the 'Withdraw Cash from ATM' scenario. Your use case should include the following parameters: Use Case ID, Use Case Name, Actors, Trigger, Pre-conditions, Post-conditions, Basic/Normal Flow, Alternative Flow, Assumptions(if any), and Priority.

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