

**BRAC UNIVERSITY**  
**Department of Computer Science and Engineering**

Examination: Quiz 1  
Semester: Summer 2025

Duration: 30 min  
Full Marks: 15

**CSE 470: Software Engineering**

Name:	ID:	Section:
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**Q1.** At NextGen Coders Ltd., a dynamic and rapidly expanding tech firm, a new opportunity emerged. A reputed university contacted them to develop EduPro, a cutting-edge learning management system (LMS). However, the university had a strict requirement—they needed a working version of the platform within six months. The project lead, Anika, realised that creating a fully featured system would be impractical. Instead, she recommended a flexible development method that would enable the university to begin using a basic version early, with additional features rolled out over time.

[Note: write the answers briefly and in bullet points, preferably. Also, underline the key points in the scenario.]

- a. Which SDLC process model would Anika select for developing the LMS, and why? [3]
  1. Fixed time limit (six months)
  2. Phased approach

Hence, the incremental process model
- b. What is the role of stakeholders in the chosen process model? [2]
 

Answer: Feedback after each phase, requirement refinement and prioritization for each phase.
- c. Imagine the university now wants to integrate a research management module halfway through the project. Give an opinion on how they could deal with this change in the existing model. [2]
 

Answer: It cannot be added halfway through the project; rather, they should implement it in any of the next phases according to the priority of the stakeholders. They should also discuss the possible time extension and the financial aspect of the overall project.

**Q2.** In the V-Model, system testing corresponds to:

- ☒ Architecture design
- ☐ Coding
- ☐ User acceptance testing

**Q3.** Which best explains the development lifecycle in an iterative model?

- ☐ Design once, implement in cycles
- ☒ Repeat design–implement–test cycles to refine the product
- ☐ Implement the entire system before testing

**Q4.** Which of the following is most important for managing incremental development effectively?

- ☒ Predefined specifications
- ☐ Continuous major feedback from stakeholders
- ☐ Avoiding cross-functional teams

**Q5.** Which of the following best represents XP's approach to customer involvement?

- ☐ The customer is involved only at the beginning and end
- ☒ Customer is a daily part of the development team



☐ Avoiding cross-functional teams

Q5. Which of the following best represents XP's approach to customer involvement?

- ☐ The customer is involved only at the beginning and end
- ☒ Customer is a daily part of the development team

☐ The customer is partially available from the beginning of the project

Q6. Imagine a project with rapidly changing customer demands and tight deadlines. Analyze which agile methodology would be more suitable for the project, and justify your recommendation with relevant practices. Additionally, include the contrasting points for the alternative method. [4]

Answer: XP. Because -

1. Adaptability to change (in Scrum, changes usually wait for the next sprint)
2. Small and frequent releases (in Scrum, after sprint completion)
3. **Pair programming** for bug-free code and to reduce technical debt
4. **Test-First Development** to code fast. (Contrasting 3 and 4 – Scrum focuses on project management and delivery cycles instead of these technical aspects)
5. **On-site customer** availability (more involved and available than Scrum, also, feedback is usually provided after each sprint)

**Q1.** At NextGen Coders Ltd., a dynamic and rapidly expanding tech firm, a new opportunity emerged. A reputed university contacted them to develop EduPro, a cutting-edge learning management system (LMS). The project lead, Asif, realised that delivering a complete and polished system immediately would be unrealistic. Instead, he proposed a development approach in which the team would build a small version of the entire system early on and continually improve it through repeated cycles. This method would allow them to experiment and correct flaws throughout the development process.

[Note: write the answers briefly and in bullet points, preferably. Also, underline the key points in the scenario.]



- a. Which SDLC process model would Asif select for developing the LMS, and why? [3]
  1. Phased approach - small versions, i.e. prototyping.
  2. Repeated refinement as they are experimenting, and there's an option to correct possible flaws.

Hence, Asif will select the iterative process model.
- b. What is the role of the product owner in the chosen process model? [2]  
Answer: Feedback after each phase, requirement refinement, and prioritisation for each phase.
- c. Imagine the university now wants to integrate an employee management module halfway through the project. Give an opinion on how they could deal with this change in the existing model. [2]  
Answer: Due to the iterative process model, it can be integrated immediately after finishing the ongoing features.

**Q2.** In the V-Model, user acceptance testing corresponds to:

- ☐ Architecture design
- ☒ Requirement analysis
- ☐ Coding

**Q3.** Which best explains the development lifecycle in an incremental model?

- ☒ Requirement analysis once, design–implement–test in cycles
- ☐ Repeat design–implement–test cycles to refine the product
- ☐ Implement the entire system before testing

**Q4.** Which of the following is most important for managing iterative development effectively?

- ☐ Predefined specifications
- ☒ Continuous feedback from stakeholders
- ☐ Avoiding cross-functional teams

**Q5.** In Scrum, who is responsible for prioritising the Product Backlog?

- ☐ Scrum Master
- ☒ Product Owner
- ☐ Development Team

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**Q1.** At NextGen Coders Ltd., a dynamic and rapidly expanding tech firm, a new opportunity emerged. A reputed university contacted them to develop EduPro, a cutting-edge learning management system (LMS). Antor, the project lead, recognised a crucial need: a dependable and successfully built application while maintaining proper quality during development. With this vision in mind, he set out to create a solution that would elevate the institution's standards and ensure a brighter future for all. He proposed a sequential development approach in which the team would gather all requirements at the beginning of the project.

[Note: write the answers briefly and in bullet points, preferably. Also, underline the key points in the scenario.]

- a. Which SDLC process model would Antor select for developing the LMS, and why? [3]
  1. Successful project, and
  2. Maintaining proper quality, which means adequate testing is required, i.e. bug-free
  3. Sequential development
  4. Requirements are gathered at the beginning of the projectHence, Antor will select the V-model.
- b. Suppose the quality assurance team finds flaws in the system design. Analyse how the selected approach would handle this situation. [2]

Answer: They will evaluate the system design again, then the coding and testing phases will be executed sequentially as mentioned in the V-model diagram.
- c. Evaluate how your chosen model might impact the project if the university later wants to include unexpected features such as live assessments or AI-based grading. Give a solution to this situation. [2]

Answer: It's not feasible to add additional requirements in the V-model. Hence, they can start a phased approach like the iterative model, which accommodates any unknown future requirements easily.

**Q2.** In the V-Model, integration testing corresponds to:

- ☐ Architecture design
- ☐ Coding
- ☒ Module design

**Q3.** Which of the following is most important for managing incremental development effectively?

- ☒ Predefined specifications
- ☐ Continuous major feedback from stakeholders
- ☐ Not following the calendar

**Q4.** In Scrum, who is responsible for prioritising the Sprint Backlog?

- ☐ Scrum Master
- ☒ Product Owner
- ☐ Development Team

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**Q5.** Compare how Scrum and XP approach quality assurance of the software throughout the development cycle. Consider the general practices of both agile methodologies. [3]

Answer: Scrum ensures quality through collaborative practices like sprint reviews and retrospectives. QA depends on how well the team manages planning, testing, and continuous improvement during sprints.

On the other hand, XP builds quality into the code by engineering practices like TDD, pair programming, and continuous integration, making it more proactive and technically sound.

Therefore, XP provides stronger built-in mechanisms for technical quality, while Scrum relies more on team-driven processes and iteration-based validation (sprints).

**Q6.** How do XP and Scrum differ in their approach to customer involvement during development? Which offers quicker feedback and why? [2]

Answer: XP (Extreme Programming) involves a dedicated on-site customer who works daily with the development team, providing immediate feedback and clarifying requirements.

On the other hand, Scrum engages customers through the Product Owner, who represents stakeholders and manages the product backlog. However, the Product Owner is not always present with the team and customer feedback is usually gathered at Sprint Reviews, which occur at the end of each sprint.

**Q1.** At NextGen Coders Ltd., a dynamic and rapidly expanding tech firm, a new opportunity emerged. A reputed university contacted them to develop EduPro, a cutting-edge learning management system (LMS). Antor, the project lead, recognised a crucial need: a dependable and successfully built application where quality could be continuously improved through feedback and collaboration. With this vision in mind, he set out to create a solution that would evolve through incremental progress and regular validation. He proposed a software development model in which the team would work in short repeated cycles and adapt priorities in each cycle based on stakeholder input.  
*[Note: write the answers briefly and in bullet points, preferably. Also, underline the key points in the scenario.]*

- a. Which software development model would Antor select for developing the LMS, and why? [3]
  1. Customer feedback is needed to make it a complete and successful application.
  2. Phased approach
  3. Frequent validation
  4. No information regarding the time limit of the project.

Hence, Antor will select the iterative process model.
- b. In what ways does Antor's proposed development method reduce the risk of project failure? [4]
  1. Problems in design, requirements, or implementation are identified in early iterations and corrected before they escalate.
  2. Each iteration allows the team to refine functionality based on feedback.
  3. Regular stakeholder input ensures that the product stays aligned with real needs and prevents late-stage surprises.
  4. Changes can be integrated between iterations, avoiding rigid planning that often leads to failure.
  5. Stakeholders focus on the quality, avoiding the time limit; hence, it enhances productivity.

**Q2.** In the V-Model, unit testing corresponds to:

- ☐ Architecture design
- ☒ Coding
- ☐ Module design

**Q3.** Which of the following is most important for managing waterfall development effectively?

- ☒ Predefined specifications
- ☐ Continuous major feedback from stakeholders
- ☐ Not following the calendar

**Q4.** In Scrum, who is responsible for prioritising the Sprint Backlog?

- ☐ Scrum Master
- ☒ Product Owner
- ☐ Development Team

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