



**School of Information Technology and Engineering**  
**Discipline: Software Engineering**  
**Fall Semester 2023: Final Examination**  
**Duration: 180 minutes (3 hours)**  
**The overall score is 40 points**

1. What is Software Engineering? (2 points)
2. Why is the Waterfall method described as a plan-driven development methodology? (2 points)
3. What do you think about some companies opening software product beta testing to the public? (2 points)
4. What is the most used V&V activity in testing? (2 points)
5. What is the difference between Functional Requirements and Non-Functional Requirements? (2 points)
6. What are the advantages of Test-driven development in Software Engineering? (2 points)
7. What is the main difference between Requirement Elicitation and Requirements Specification? (2 points)
8. What are Software Design Patterns? (2 points)
9. Why is the scrum (agile) method convenient in modern software engineering? (2 points)
10. What is the difference between Release testing & User testing? (2 points)
11. What kind of methods/activities are there in Requirements Elicitation? (2 points)
12. How do companies get benefits and earn money from open-source software solutions? (2 points)
13. Why is the Activity Diagram widely used between software developers and non-software developers (salespeople, logistics people, finance people, etc)? (2 points)
14. Please draw UML diagrams to describe WSP (University-based information exchange application) (2 points)
15. Where do we use State Machine Diagrams? (2 points)
16. What is the availability of the principal dependability properties of software engineering? (2 points)
17. What is the 4 + 1 view model of software architecture? (2 points)
18. What are Context models in System Modelling? (2 points)
19. Why do you think that modern software operating systems turn off automatically when processors heat up (at a higher temperature than the allowed temperature)? What are the principles behind this dependability property? (2 points)
20. Please describe how GitHub helps software developers (2 points)

**Lecturer**

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**Aldamuratov J.**

**Dean of School of  
IT and Engineering**

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**Imanbayev A.**

**Approved by protocol №29 of the 1 of December 2023**