

Final Exam: Software Engineering (INT2208_{20, 21, 22, 23})
Semester 2, Academic year: 2021-2022. Duration: 60 minutes. Exam ID: 1A

Note: You need to specify Exam Id at the beginning of your answer sheet. Exam materials are not permitted. (Giám thị cần nhắc sinh viên nhập mã đề vào bài làm ngay khi nhận đề thi.)

Part 1. (4 points) Choose the correct answer(s) in the following questions:

1. Which of the following software attributes is employed to establish a software project's scope?

- ☒ A. Information objectives, function, performance
- B. Only performance.
- C. Only context.
- D. None of the above

2. Which feature is the most important of spiral model?

- A. Quality management
- B. Performance management
- ☒ C. Risk management
- D. Efficiency management

3. Every interaction in the incremental model goes through the _____ phases.

- A. Planning and construction
- B. Deployment and maintenance
- C. Communication and modeling
- D. All

4. What is the basic concept behind the Waterfall model?

- A. The system is assembled from existing components.
- ☒ B. Specification, development and validation are interleaved.
- ☒ C. Separate and distinct phases of specification and development.
- D. None of the above

5. Which one of the following terminology is correct about non-functional requirements?

- A. Often apply to the system as a whole rather than individual features or services.
- B. Constraints on the system from the domain of operation
- C. Statements of services the system should provide, how the system should react to particular inputs and how the system should behave in particular situations.
- D. May state what the system should not do.

6. Which one of the following answers correctly describes Structured natural language?

- A. Graphical models, supplemented by text annotations, are used to define the functional requirements for the system; UML use case and sequence diagrams are commonly used.
- B. The requirements are written using numbered sentences in natural language. Each sentence should express one requirement.
- C. This approach uses a language like a programming language, but with more abstract features to specify the requirements by defining an operational model of the system. This approach is now rarely used although it can be useful for interface specifications.
- ☒ D. The requirements are written in natural language on a standard form or template. Each field provides information about an aspect of the requirement.

7. After the requirements are gathered from multiple stakeholders, which document is prepared by the system analyst?

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- A. Requirement Gathering
 - B. Feasibility study
 - ☒ C. Software requirement specification
 - D. Software requirement validation
8. What is used to illustrate scenarios?
- A. Sequence Diagrams
 - B. System context diagram
 - C. Natural Language
 - D. None of the above
9. What kind of model that functional requirements are frequently captured in?
- A. Video tapes
 - B. Test cases
 - C. Use cases
 - ☒ D. Function points
10. In system modeling, which perspective depicts the system or data architecture?
- A. External perspective
 - B. Behavioral perspective
 - ☒ C. Structural perspective
 - D. All of the mentioned
11. "Activity diagrams could be performed to model the processing of data", Is this statement true or false?
- ☒ A. True
 - ☐ B. False
12. Which of the following statements most accurately describes teamwork?
- A. Gathering the right people together to work on a project.
 - B. Developing skills that will enhance project performance.
 - ☒ C. People working collaboratively towards a common goal.
 - D. Establishing vision and direction towards a common purpose.
13. "The model in MVC is responsible for the application's data management", is this statement true or false?
- ☒ A. False
 - B. True
14. Which one of the following statements is correct about how to determine a good architecture?
- A. The architect should have the technical requirements for the system and an articulated and prioritized list of qualitative properties
 - B. The architecture may not be the product of a single architect or a small group
 - C. The architecture may not be well documented
 - ☒ D. All of the mentioned
15. What can we describe as a logical view?
- A. A view shows the key abstractions in the system as objects or object classes.
 - ☒ B. A view shows the system hardware and how software components are distributed across the processors in the system.
 - C. A view shows how the software is decomposed for development.
 - D. None of the above.
16. Which one of the following models is one of the static models?
- A. State machine model
 - B. Sequence model

- C. Class model
- D. None of the above

17. Which single word can be used to summarize the importance of software design?

- A. Accuracy
- B. Efficiency
- C. Complexity
- ☒ D. Quality

18. What can the Inspection activity do?

- A. Check conformance with a specification
- B. Check conformance with the customer's real requirements
- C. Check non-functional requirement
- ☒ D. All

19. What is a test?

- ☒ A. A measure to check if the code meets the defined specifications
- B. A measure to check if the code is visually beautiful
- C. A measure to check if the code is visually beautiful Incorrect
- D. A measure to check if the code contains security vulnerabilities?

20. What exactly is the purpose of defect testing?

- A. To demonstrate to the developer and the system customer that the software meets its requirements
- ☒ B. To discover faults or defects in the software where its behavior is incorrect or not in conformance with its specification
- C. To ensure the software is the right product.
- D. None of the above.

Part 2 (Choose 2 out of 3 questions, 6 points in total):

Assume that VNU-UET university needs to develop a software system to keep track covid information for all the students and the staff of the university. The student and staff can view and update their status (either F0, F1, F2, ...) on the system. The system can connect to the legacy system related to Covid19 (i.e., PC Covid, ...) to obtain information about the injection and test results of the student and staff. Right after each lecture the student could update their position in the classroom. When the system receives a F0-F1 declaration from the student or staff, the system updates the status of the related ones and then informs them via the UET email system.

Question 1. (3 points): Which kind of software process model should we employ to develop the software system? (Explain why do you choose it)

Question 2. (3 points): Define the use case model for the system with a brief description for each use case?

Question 3. (3 points): Explain briefly the basic activities of software engineering?