



UCSC

University of Colombo, Sri Lanka

University of Colombo School of Computing



**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY
(EXTERNAL)**

Academic Year 2023— 2nd Year Examination — Semester 4

IT4406 — Agile Software Development

Part 1 - Multiple Choice Question Paper

(2 Hours for both Part 1 and Part 2)

Important Instructions

- This paper has **two (2) parts, Part 1 and Part 2**.
- The total duration of **both Part 1 and Part 2 is 2 hours**.
- The final mark for the paper will be determined by averaging the scores of Part 1 and Part 2, each of which is graded out of **100**.
- The medium of instructions and questions is English.
- This paper (Part 1) has **25 MCQ questions** on **6 pages**. Answer **all** questions.
- Each question will have **5 (five)** choices with **ONE OR MORE** correct answers.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from -1 (All the incorrect choices are marked & no correct choices are marked) to +1 (All the correct choices are marked & no incorrect choices are marked). However, **the minimum mark per question would be zero**.
- Answers should be marked on the **special answer sheet** provided.
- Note that questions appear on both sides of the paper. If a page or part of a page is not printed, please inform the supervisor/invigilator immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices**.
- Any electronic device capable of storing and retrieving text, including electronic dictionaries, smartwatches, mobile phones, and Calculators are **not** allowed.
- *All Rights Reserved*. This question paper can NOT be used without proper permission from the University of Colombo School of Computing.

1) Which of the following is/are **NOT** considered as (a) *Agile Methodology(ies)*?

- | | | |
|---------------|-------------------------|------------|
| (a) Lean | (b) Scrum | (c) Kanban |
| (d) Waterfall | (e) Extreme Programming | |

2) Which of the following is/are considered (a) *value(s)* as stated in the *Agile Manifesto*?

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|--|
| (a) Following a plan over responding to change |
| (b) Customer collaboration over contract negotiation |
| (c) Comprehensive documentation over working software |
| (d) Processes and tools over individuals and interactions |
| (e) Sticking to the original plan regardless of changes in the environment |

3) Match each term with its appropriate description regarding *uncertainties* in Scrum.

Term	Description
Ⓐ - End uncertainty	⒫ - Uncertainty about who the actual customers of their products are.
Ⓑ - Means uncertainty	Ⓖ - Uncertainty about the features of the final product.
Ⓒ - Customer uncertainty	Ⓓ - Uncertainty about the process and technologies used for development.

- | | |
|-------------------------|-------------------------|
| (a) Ⓐ → ⒫, Ⓑ → Ⓖ, Ⓒ → Ⓓ | (b) Ⓐ → ⒫, Ⓑ → Ⓓ, Ⓒ → Ⓖ |
| (c) Ⓐ → Ⓓ, Ⓑ → ⒫, Ⓒ → Ⓖ | (d) Ⓐ → Ⓓ, Ⓑ → Ⓖ, Ⓒ → ⒫ |
| (e) Ⓐ → Ⓖ, Ⓑ → Ⓓ, Ⓒ → ⒫ | |

4) What is/are the key difference(s) between *Plan-Driven* and *Agile principles*?

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|--|
| (a) There is no difference between Plan-Driven and Agile principles |
| (b) Plan-Driven principles focus on predictability, while Agile principles focus on adaptability |
| (c) Plan-Driven principles focus on adaptability, while Agile principles focus on predictability |
| (d) Plan-Driven principles do not involve customers, while Agile principles involve customers |
| (e) Plan-Driven principles involve customers, while Agile principles do not involve customers |

5) Consider the following statements,

- I. User stories are high-level requirements artifacts.
- II. Epics can be broken down into smaller user stories.
- III. User stories must be written in the voice of the developer.

Which of the above is/are **correct** regarding *user stories*?

- | | | |
|--------------------|--------------------|-------------------|
| (a) I only | (b) II only | (c) I and II only |
| (d) I and III only | (e) I, II, and III | |

6) What does '*INVEST*' stand for in the context of developing better user stories in Scrum?

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|--|
| (a) Integrated, Negotiable, Verifiable, Estimable, Small, Timely |
| (b) Independent, Negotiable, Valuable, Estimable, Small, Testable |
| (c) Integrated, Negotiable, Valuable, Estimable, Scalable, Testable |
| (d) Independent, Negotiable, Valuable, Estimable, Scalable, Timely |
| (e) Independent, Negotiable, Verifiable, Estimable, Scalable, Testable |

7) What does 'Velocity' refer to in Scrum?

- (a) The time it takes to complete a user story
- (b) The speed at which the Development Team works
- (c) The number of user stories assigned to the Development Team
- (d) The rate at which new user stories are added to the Product Backlog
- (e) The amount of work the Development Team can complete in a Sprint

8) What does 'Timeboxed' mean in the context of Sprints in Scrum?

- (a) The Sprint must start and end at the same time each day
- (b) The Sprint must be completed in a specific amount of time
- (c) The sprint duration can be extended if the team needs more time
- (d) The Sprint must be completed within the team's working hours
- (e) The sprint must end when all tasks are completed, regardless of the time taken

9) Consider the following economic levels,

- I. Release-Level economics
- II. Budget Allocation economics
- III. Product Backlog economics

Which of the above is/are *economic level(s)* that *the product owner* should manage as one of his responsibilities?

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|--------------------|--------------------|-------------------|
| (a) I only | (b) II only | (c) I and II only |
| (d) I and III only | (e) I, II, and III | |

10) What is/are the main responsibility(ies) of the *Scrum Master*?

- | | | |
|---------------------------|---|-------------------------|
| (a) To write the code | (b) To sell the product | (c) To test the product |
| (d) To manage the project | (e) To facilitate Scrum events and remove impediments | |

11) Consider the following statements,

- I. A product owner can be a member of a development team.
- II. Most of the team members are expected to have T-shaped skills.
- III. All the members of the development team should participate in the daily scrum.

Which of the above statements is/are **correct** regarding the '*Development Team*' in Scrum?

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|--------------------|--------------------|-------------------|
| (a) I only | (b) II only | (c) I and II only |
| (d) I and III only | (e) I, II, and III | |

- 12) Consider the following statements,
- I. Feature team is a cross-functional and cross-component team
 - II. Feature teams are typically less independent than component teams
 - III. Feature teams often rely on other teams that provide them with access to specialized skills or knowledge
- Which of the above statements is/are **correct** regarding '*Feature Teams*' in Scrum?
- | | | |
|--------------------|--------------------|-------------------|
| (a) I only | (b) II only | (c) I and II only |
| (d) I and III only | (e) I, II, and III | |
- 13) Consider the following statements,
- I. Scrum formally defines only release and sprint planning among the multiple levels of planning.
 - II. Planning is conducted at multiple levels of detail and at multiple times throughout development.
 - III. Scrum formally defines portfolio, product, release, sprint, and daily levels of planning.
- Which of the above statements is/are **correct** regarding *multi-level planning* in Scrum?
- | | | |
|--------------------|--------------------|-------------------|
| (a) I only | (b) II only | (c) I and II only |
| (d) I and III only | (e) I, II, and III | |
- 14) What is/are the primary purpose(s) of *portfolio planning* in Agile project management?
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|--|
| (a) To allocate individual portfolio backlog items to team members |
| (b) To determine which portfolio backlog items to work on |
| (c) To decide the order in which to address items in the portfolio backlog |
| (d) To plan the budget for each portfolio backlog item |
| (e) To plan team performance evaluations |
- 15) Consider the following statements,
- I. Capacity planning determines the available capacity of the team to perform work during the sprint.
 - II. In a ten-day sprint, each member may not have equal time for sprint execution, with personal time off being one possible reason.
 - III. Capacity planning includes allocating time for tasks like sprint planning, sprint review, and product backlog grooming, in addition to considering team members' availability during the sprint.
- Which of the above statements is/are **correct** about *capacity planning* in Scrum?
- | | | |
|--------------------|--------------------|-------------------|
| (a) I only | (b) II only | (c) I and II only |
| (d) I and III only | (e) I, II, and III | |

- 16) Which of the following statements best describes *Exploratory Testing (ET)* in a manual system testing process?
- (a) ET involves predefined steps and a strict structure to follow during testing.
 - (b) ET focuses primarily on extensive documentation and predefined objectives for each test.
 - (c) ET starts with defining test objectives but allows the tester to decide the structure and steps based on observations during the test.
 - (d) ET skips the testing of new features and focuses on regression testing of existing features.
 - (e) ET ensures all components are tested equally regardless of their behavior.
- 17) What is the cycle followed by developers in a strict '*Test First*' methodology?
- (a) Change code, write test, run test, repeat
 - (b) Change code, run test, debug code, repeat
 - (c) Write test, change code, run test, repeat
 - (d) Write test, run test, change code, repeat
 - (e) Write test, run test, debug code, repeat
- 18) Which section of a *unit test case* is responsible for comparing the actual output with the expected output?
- (a) Check
 - (b) Setup
 - (c) Teardown
 - (d) Test procedure
 - (e) Run method
- 19) Which key factor should a tester consider when *planning Scrum-based tests* to ensure that a *User Story* is *sufficiently refined*?
- (a) If the Product Owner has approved the User Story
 - (b) If the Sprint backlog includes the User Story
 - (c) If the Task board reflects the User Story's progress
 - (d) If the tester can figure out when to pass or fail a test case
 - (e) If the User Story is prioritized in the Product backlog
- 20) Identify the purpose(s) of the *Definition of Done (DoD)* checklist in Scrum?
- (a) To decide if a feature is ready to be included in the Sprint Review
 - (b) To determine the team's overall productivity
 - (c) To identify the tasks to be included in the Product backlog
 - (d) To decide the acceptance criteria for a User Story
 - (e) To prioritize features for the next Sprint

- 21) Which of the following best describes *Agile Testing (AT)* compared to *testing in the waterfall method*?
- (a) AT is performed only at the end of the development cycle.

(b) AT relies on a separate testing team to ensure quality at the end of each project phase.

(c) AT involves continuous, parallel testing at each sprint and is owned by the whole Scrum team.

(d) AT uses significant late testing to ensure quality.

(e) AT follows a strict, predefined plan similar to the waterfall method.
- 22) Which of the following is/are **NOT** (a) characteristic(s) or responsibility(ies) of *XP coaches*?
- (a) Arranging a shared workspace

(b) Assigning tasks and creating jobs

(c) Assisting in creating an informative workspace

(d) Make sure the team has right people

(e) Leading by example
- 23) Based on the principles of XP (Extreme Programming), which of the following statement(s) is/are true about the *team sizes and members*?
- (a) In XP teams number of programmers should be balanced with the number of testers.

(b) For starting XP teams, a good setup is having one dedicated programmer and one dedicated tester.

(c) The smallest full XP team consists of five people, including programmers and a product manager.

(d) Twelve people is the upper limit for effective team collaboration in XP.

(e) A single novice programmer can form a good XP team with one experienced product manager.
- 24) How frequently do analysis, design, coding, testing, and deployment occur in *XP*?
- (a) Weekly (b) Monthly (c) Only at the beginning and end of the project

(d) Once per sprint (e) With rapid frequency
- 25) Which of the following roles is/are important and take part in *an XP team*?
- (a) Scrum master (b) On-Site Customer (c) Marketing Specialist

(d) System Administrator (e) Product Owner
