



University of Colombo, Sri Lanka

UCSC *University of Colombo School of Computing*



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

Academic Year 2025 — 2nd Year Examination — Semester 4

IT4406 — Agile Software Development

Part 2 - Structured Question Paper

(2 Hours for both Part 1 and Part 2)

To be completed by the candidate

Index Number

--	--	--	--	--	--	--

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. Students should answer in the medium of English language only.
- This paper (Part 2) has **2 questions on 8 pages**. Answer **both** questions.
- Write your answers **only on the space provided** on this question paper.
- Do not tear off any part of this question paper. Under no circumstances may this paper (or any part of this paper), used or unused, be removed from the Examination Hall by a candidate.
- 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.
- Any electronic device capable of storing and retrieving text, including electronic dictionaries, smartwatches, and mobile phones, is not allowed.
- 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.

**To be completed by
the examiners**

1	
2	
Total	

Index Number

--	--	--	--	--	--	--

1. A company is a few months into adopting Scrum and is facing difficulties. The Product Owner is a busy senior manager who attends few of the team's events, leaves the Product Backlog in no specific order, and changes priorities without explanation. All effort estimates are produced by a single senior developer. Items pulled into a Sprint are vague and have no acceptance criteria.

(a). The Product Owner's behavior is contributing to the team's problems.

(i) Explain **three** (3) principal responsibilities of the Product Owner in Scrum (*9 marks*)

(ii) State **two** (2) characteristics or skills an effective Product Owner must have, and explain why **each** matters for the team described above (*6 marks*).

[15 marks]

--

Index Number

--	--	--	--	--	--	--

(b). Currently, a single senior developer produces all estimates.

(i) Describe a collaborative estimation technique that the team could use instead. Include the **specific steps** involved in applying the technique to this project (*12 marks*).

(ii) Explain **two** (2) reasons why estimating collaboratively is beneficial for this project (*6 marks*).

[18 marks]

--

Index Number						
--------------	--	--	--	--	--	--

- (c). Items pulled into a Sprint are often vague and lack acceptance criteria.
- (i) Explain what a *Definition of Ready* (DoR) is and where it fits in this project (6 marks).
 - (ii) Give **two** (2) example DoR criteria suitable for this team (4 marks).
 - (iii) Explain how a DoR would help with the problems described, and identify **one** (1) risk or limitation of relying on a DoR, with examples (7 marks).

[17 marks]

--

Index Number

--	--	--	--	--	--	--

2. An e-commerce company is building a new *digital-payments product* in a market with high uncertainty. The requirements for this product are expected to evolve as the market and customer needs become clearer. However, the company's leadership wants this development aligned with the organization's other product initiatives and wants the development team to produce a release plan while still delivering value early.
- (a). Given the high uncertainty, explain how **each** of the following Agile/Lean principles helps this development team, with an example for each: (i) Embracing variability and uncertainty; (ii) Validated learning; (iii) Limiting Work-In-Process (*4 marks each*).

[12 marks]

--

--	--	--	--	--	--	--

- [12 marks]**

Index Number

--	--	--	--	--	--	--

(c). The payments product's first release has a committed scope: a set of regulatory features that must all be present.

(i) Outline **four** (4) key steps in performing fixed-scope release planning (*8 marks*).

(ii) Explain how a fixed-scope approach forecasts the likely release date, and the role velocity plays in that forecast (*8 marks*).

[16 marks]

--

Index Number

--	--	--	--	--	--	--

- (d). Given the committed regulatory scope described above, state how the three release constraints (scope, date, and cost/budget) interact in release planning. Explain using the payments product as an example.

[10 marks]

--
