

COMMONWEALTH OF AUSTRALIA

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Family Name	
Given Names	
Student Number	
Teaching Period	Semester 1, 2016

FINAL EXAMINATION	DURATION				
PRT453 – Process Development Methodologies	<table border="1"> <tr> <td>Reading Time:</td> <td>10 minutes</td> </tr> <tr> <td>Writing Time:</td> <td>120 minutes</td> </tr> </table>	Reading Time:	10 minutes	Writing Time:	120 minutes
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INSTRUCTIONS TO CANDIDATES

1.1 The examination has 2 sections (please adjust details as required if more than one section)

Section A: Suggested Time:	Short Answer Questions: Answer ALL 4 questions Marks as indicated by lecturer
Section B: Suggested Time:	Short Answer Questions: Answer ALL 8 questions Marks as indicated by lecturer

Section A and Section B are to be answered The answer Booklet.

Please ensure that your Name and Student Number are written clearly in the space provided at the top of this page.

- 1.2 Note that questions **ARE NOT** of equal value.
- 1.3 Read **ALL** questions carefully.
- 1.4 Total Marks for exam: 100 Marks

EXAM CONDITIONS

You may begin writing from the commencement of the examination session. The reading time indicated above is provided as a guide only.

This is a RESTRICTED OPEN BOOK examination

No calculators are permitted

One A4 sheet of handwritten double-sided notes permitted

Hard copy, unannotated English translation dictionary only

ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED
No additional printed material is permitted	2 x 20 Page Book

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

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Section A

Short Answer Questions

Total No of Marks for this section: 20 Marks

This section should be answered in the exam book.

Marks for each question are indicated. Suggested Time allocation for Section A: 30 mins

Question 1

Complete the following sentence. In the SCRUM process, the lengths and number of the projects are determined according to

(Marks: 5)

Question 2

In UP when is not necessary to complete a detailed modelling UML diagrams prior to any software development?

(Marks: 5)

Question 3

Complete the following sentence.

In Agile software processes people, their feelings

(Marks: 5)

Question 4

When are you likely to apply Replace Implicit Language with Interpreter refactoring?

(Marks: 5)

Section B

Short Answer Questions

Total No of Marks for this section: 80 Marks

This section should be answered in the Answer Booklet provided.

Marks for each question are indicated. Suggested time allocation for Section B:90 mins.

Question 1

Consider the case where you need to choose a software engineering process for an exciting software game for teenage students. It is important to meet the milestones and keep the investor happy. New requirements seem likely. The client is often changing their mind. Using the Cockburn Classification for your choice, argue that your choice is valid. (Short essay response)

(Marks: 10)

Question 2

- a) What is timeboxing?
- b) Give three examples of where timeboxing can be used.

(Marks: 10)

Question 3

- a) What is the rationale for refactoring in agile development?
- b) Explain Kent Beck's metaphor of "two hats".

a. (Marks: 5)

(Marks: 5)

(5+5=10 Marks)

Question 4

Consider the following backlog.

Product Backlog						Week 1									
						Mon		Tue		Wed		Thur		Friday	
S ID	Story Name	Assigned	Status	Size	Priority	E	T	E	T	E	T	E	T	E	T
1	Display workflow	Jane	Ongoing	30	2	6	25	6	21	6	15	6	9	6	3
2	Workflow Layer	John	Ongoing	27	1	6	26	6	26	6	24	6	27	6	27
3	UI -login	Peter	Ongoing	5	5	6	0	6	0	6	0	6	0	6	0
4	View task list	Lisa	Ongoing	20	6	0	20	0	20	3	17	6	11	6	3
5	Pend item	Lisa	Done	15	3	6	9	6	3	3	0	0	0	0	0
6	Print Item	Alyssa	Done	20	4	6	14	6	8	6	2	2	0	0	0
7	Comment on Item	Alyssa	Ongoing	25	7	0	25	0	25	0	25	4	21	6	15

E = Effort

T = Todo

a) Draw a burndown chart.

(Marks: 5)

b) Discuss this backlog and chart with respect to the advantages of SCRUM process methodology and analyse the problems of this sprint.

(Marks: 5)

(5+5=10 Marks)

Question 5

You are the team leader of a team of ten software engineers working on an important IT 1 year project that has heavy penalties for running late. It is now 8 months into the project and it is clear that the project will not reach its deadline.

- a) One obvious option is to add more staff to the project. With reference to the text *Mythical Man-Month* by Fred Brooks, explain if you will take up this option.
- b) What other software process options should be considered?

(Marks: 10)

Question 6

- a) Is refactoring just cleaning up code? Explain your answer
- b) Explain the difference between refactoring and structured programming?

(Marks: 10)

Question 7

SCRUM and Unified Process (UP) are both well-developed iterative development methodologies. Explain and compare advantages of each.

(Marks: 10)

Question 8

- a) List three benefits of the Replace Conditional Logic with Strategy refactoring.
- b) List one liability of the Replace Conditional Logic with Strategy refactoring

(Marks: 10)