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MONASH University

Semester Two 2017
Examination Period

Faculty of Information Technology

EXAM CODES: **FIT2101**

TITLE OF PAPER: **SOFTWARE ENGINEERING PROCESS AND MANAGEMENT - PAPER 1**

EXAM DURATION: 2 hours writing time

READING TIME: 10 minutes

THIS PAPER IS FOR STUDENTS STUDYING AT: (tick where applicable)

☐ Berwick	☑ Clayton	☑ Malaysia	☐ Off Campus Learning	☐ Open Learning
☐ Caulfield	☐ Gippsland	☐ Peninsula	☐ Monash Extension	☐ Sth Africa
☐ Parkville	☐ Other (specify)			

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AUTHORISED MATERIALS

OPEN BOOK	☑ **YES**	☐ **NO**
CALCULATORS	☐ **YES**	☑ **NO**
SPECIFICALLY PERMITTED ITEMS **if yes, items permitted are:**	☐ **YES**	☑ **NO**

Candidates must complete this section if required to write answers within this paper

STUDENT ID: __ __ __ __ __ __ __ __ DESK NUMBER: __ __ __ __ __

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This exam is 7 pages long and contains 10 questions. It is worth 70 marks in total.

Please write your answers in the script book provided. If you run out of paper, you may request another script book. You may answer the questions in any order, but please make sure you number each question clearly. To maximize your mark, we suggest that you attempt the questions you find easiest first.

Each question that requires a written answer has a suggested length. This suggestion is only there to help you understand how much detail we're expecting – there is no penalty for writing more or less than the suggested length provided your answers are clear and complete.

Your markers request that you not use red pen.

Question 1 (3 + 3 + 3 + 3 + 3 = 15 marks)

*This question is about **requirements**.*

Flowr is a new project that has been described by its creators as "Uber, but for florists".

This is how Flowr is supposed to work: *Participating florists, gift stores and delivery drivers register themselves with Flowr using a web form. Customers can use a phone app to place online orders for flowers, chocolates, and other gifts. Flowr emails these orders to local stores to be filled. Store staff use a web application to notify Flowr when the order is complete. Flowr then sends a nearby delivery driver to pick up the order and bring it to its recipient.*

Here are six suggested Product Backlog Items for Flowr.

1. As a user, I want to cancel a delivery.
2. As a developer, I want to finish designing the database so that I can start building the user interface next sprint.
3. As a customer, I want the site to be easy to use so that I can send flowers to my mother.
4. As a store owner, I want to be able to manage orders so that I do not run out of stock.
5. As a non-authenticated Flowr user, I want to enter my username so that the system will prompt me for my password.

These stories all have problems. For each story:

a) state what is wrong with it, and
b) suggest a better version – if you can't do that without more information, suggest questions you could ask the Product Owner or client instead.

Question 2 (5 marks)

*This question is about **Agile methodologies**.*

An established medium-sized company decides to have one of its teams try Scrum. Half-way through their first project, one of the developers on the team has this to say about the experience:

"We're not getting much done, to be honest. Part of the problem is the daily status meeting – on paper it's only supposed to take an hour, but it keeps going over time. I'm also spending at least half an hour a day preparing my PowerPoint slides. Things were much better when our status meetings were once a month."

What is this team doing wrong, and what should they do to fix the problem? Write about half a page.

Question 3 (5 marks)

*This question is about **software development practices**.*

Continuous deployment is a development methodology in which completed software features are automatically built, tested, and (if the tests pass) deployed to end users.

What are the advantages and disadvantages of continuous deployment in an Agile project, compared to manual deployment? Write up to half a page.

Question 4 (1 + 2 + 2 = 5 marks)

This question is about **stakeholder identification**.

The Golden Days nursing home is a residential care home for people who are unable to look after themselves because they are elderly, disabled, or sick. They provide medical care as well as cleaning, laundry, and housekeeping services, with nursing staff present 24 hours a day and doctors on call.

Golden Days wishes to computerize its meal planning. They hope to minimize the amount of food wasted while making sure that all residents are eating fresh, nutritious food. The system will need to take into account the residents' preferred types of foods, medical and dietary needs, allergies, and any religious restrictions (e.g. for kosher or halal food) as well as the price and storage requirements of the ingredients. Each day, it will present the kitchen staff with instructions on what to cook for each resident. At the end of each week, the administrative staff will be able to print a list of the ingredients that need to be purchased to create next week's meals.

a) What is a *stakeholder*?
b) Identify the stakeholders for this system.
c) Draw a stakeholder map showing the relative influence and interest of each stakeholder.

Question 5 (5 marks)

*This question is about **non-functional requirements**.*

Here is an example of a requirement that has been expressed as a user story:

> **As a customer, I want the system to be secure so that my personal information can't be accessed by a third party.**

What problems might this requirement cause if it is selected into the sprint backlog? Suggest an alternative way to ensure that the requirement is met. Write about half a page.

Question 6 (5 marks)

*This question is about **Scrum practices**.*

Here is an excerpt from one team's Project Management Plan:

Amanda is the Scrum Master. Amanda's responsibilities:

- Approving or rejecting client's requests for changes to requirements
- Allocating user stories to sprints
- Allocating tasks to developers and ensuring that they are completed on time
- Ensuring that team members have access to the hardware and software they need
- Informing team members of the velocity that will be required in order to meet sprint deadlines
- Running daily meetings in which developers are informed of their tasks for the day

What do you think of this team's interpretation of the Scrum Master role? What advice would you give them, and why? Write about half a page.

Question 7 (5 marks)

*This question is about **teamwork**.*

One of the practices that DeMarco and Lister identified as "teamicidal" (i.e. bad for teamwork) is having team members spread out across the building instead of sitting together. What are some of the challenges that Scrum teams face if their members are not located close by? Suggest some ways that teams might overcome these problems. Write about half a page.

Question 8 (2 + 5 = 7 marks)

*This question is about **planning**.*

a) What is *release planning*, and how is it different from sprint planning? (2 marks)
b) Describe one technique that Agile teams can use to assist with release planning. (5 marks)

Write half to one page.

Question 9 (10 marks)

*This question is about **risk management**.*

Here is the *complete* risk register for the Flowr project that was described in question 1.

Risk	Impact	Mitigation
Client loses interest in project	High	Terminate the project
Product Owner becomes sick or leaves the company	Medium	Ensure that somebody else can do the Product Owner role.
Unable to verify that our system works as expected in Internet Explorer 4	Moderate	Ask client whether Internet Explorer 4 compatibility is required
Installation instructions might be hard for non-native English speakers to understand	Low	Include a link to Google Translate in installation instructions
Project server's hard disk crashes causing loss of source code	Severe	Ensure that off-site backups are kept of all data, including project source code. Check regularly that the backups are intact and can be restored.

What are the good and bad points of this risk register? What could the team do to improve it? Write no more than one page.

Question 10 (3 + 5 = 8 marks)

*This question is about **retrospectives and metrics**.*

Your team is worried because your team's velocity has been declining for several iterations and nobody is sure why – there have been no staff changes, and you have not changed the way you estimate or prioritize stories.

a) Suggest a possible cause for your declining velocity, and explain how it is affecting your team's productivity.
b) Suggest a metric (i.e. some measurable property of your code or process) that you could use to help figure out if your suggested cause is the problem. Make sure to explain how to compute the metric and how to interpret it.

Write up to one page.