

# Faculty of Engineering / Science

## End Semester Examination May 2025

### OE00015 Agile Development

<b>Programme</b>	:	B.Tech. / B. Sc.	<b>Branch/Specialisation</b>	:	All
<b>Duration</b>	:	3 hours	<b>Maximum Marks</b>	:	60

**Note:** All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary.  
 Notations and symbols have their usual meaning.

#### Section 1 (Answer all question(s))

- |   | <b>Marks</b>   | <b>CO</b> | <b>BL</b> |
|---|--|-----------|-----------|
| <b>Q1.</b> Which of the following is a core principle of the Agile Manifesto?   | 1    1    1  |           |           |
| <input type="radio"/> Comprehensive documentation over working software<br><input checked="" type="radio"/> Individuals and interactions over processes and tools | <input type="radio"/> Following a plan over responding to change<br><input type="radio"/> Contract negotiation over collaboration  |           |           |
| <b>Q2.</b> Which of the following is/are the advantages of using Agile methodology?   | 1    1    1  |           |           |
| <input type="radio"/> Customer is satisfied<br><input type="radio"/> Last-moment changes are also accepted  | <input type="radio"/> Application's development is rapid<br><input checked="" type="radio"/> All of the above  |           |           |
| <b>Q3.</b> 15 minutes team meeting which is held on daily basis is called _____.  | 1    2    1  |           |           |
| <input type="radio"/> Backlog meeting<br><input type="radio"/> Review meeting   | <input checked="" type="radio"/> Daily scrum<br><input type="radio"/> Daily meeting  |           |           |
| <b>Q4.</b> Which Agile approach emphasizes continuous improvement, workflow visualization, and limiting work in progress?   | 1    2    1  |           |           |
| <input type="radio"/> Scrum<br><input type="radio"/> XP   | <input checked="" type="radio"/> Kanban<br><input type="radio"/> Lean  |           |           |
| <b>Q5.</b> Which of the following shows remaining working on a sprint?  | 1    3    1  |           |           |
| <input type="radio"/> Up/Down Bar Chart<br><input checked="" type="radio"/> Sprint Burndown Chart   | <input type="radio"/> Release Burndown Chart<br><input type="radio"/> Product Review Chart   |           |           |
| <b>Q6.</b> Which of the following is a high-level view of the product requirements, with a loose timeframe for when you will develop those requirements?          | 1    3    1  |           |           |
| <input type="radio"/> Product backlog<br><input type="radio"/> Release plan   | <input type="radio"/> Sprint backlog<br><input checked="" type="radio"/> Product roadmap   |           |           |
| <b>Q7.</b> What is a "user story" in Agile?   | 1    4    1  |           |           |
| <input type="radio"/> A detailed technical specification<br><input type="radio"/> A project manager's task assignment   | <input checked="" type="radio"/> A description of a feature from the user's perspective<br><input type="radio"/> A legal document outlining project scope                |           |           |
| <b>Q8.</b> What is a risk associated with using fixed-scope projects in Agile procurement?  | 1    4    1  |           |           |
| <input checked="" type="radio"/> Inability to adapt to changing needs<br><input type="radio"/> Reduced transparency   | <input type="radio"/> Excessive supplier flexibility<br><input type="radio"/> Lack of supplier involvement   |           |           |
| <b>Q9.</b> What is the Scrum Master's role in sprint planning?  | 1    5    1  |           |           |
| <input type="radio"/> To create the sprint backlog<br><input type="radio"/> To assign tasks to individual team members  | <input checked="" type="radio"/> To ensure the team understands the sprint goal and the selected backlog items<br><input type="radio"/> To approve all technical designs |           |           |

**Q10.** What does "Commitment" primarily refer to in Agile?

1 5 1

- A rigid adherence to a pre-defined plan
- The team's pledge to do their best to achieve the Sprint Goal
- A contractual obligation to deliver a specific set of features
- A promise to work overtime to meet deadlines

### Section 2 (Answer all question(s))

Marks CO BL

**Q11.** Define Agile methodology. Why Agile is used?

2 1 1

Rubric	Marks
definition of agile methodology -1 , Reason using agile- 1	2

**Q12.** Mention the challenges involved in developing Agile software.

3 1 1

Rubric	Marks
Atleast 5 challenges involved in developing Agile Software	3

**Q13. (a)** What are the principles and core values used in Agile development? Explain in detail.

5 1 1

Rubric	Marks
core values used in agile developments-2 , Principles used in agile developments -3	5

(OR)

- (b)** Explain in detail the Agile benefits to the development team and customers.

Rubric	Marks
agile benefits to the developments team and customers	5

### Section 3 (Answer all question(s))

Marks CO BL

**Q14.** Define sprints and product backlog.

2 2 1

Rubric	Marks
Define Sprints Product backlog	2

**Q15. (a)** How can you create an environment that supports Agile practices? Discuss Agile roles in Agile methodology.

8 2 2

Rubric	Marks
environment that supports agile practices- 4, Agile roles in agile methodology- 4	8

(OR)

- (b)** Explain core principle and key concepts behind Lean frameworks? How Lean frameworks enhance Agile methodologies?

Rubric	Marks
core principle and key concepts behind Lean frameworks- 4 , Lean frameworks enhance agile methodologies - 4	8

### Section 4 (Answer all question(s))

Marks CO BL

**Q16.** What is a burndown chart? How we can use burndown charts in an Agile project?

3 3 2

Rubric	Marks
define burndown chart -1, burndown charts used in agile project? - 2	3

**Q17. (a)** What is a product roadmap? Describe how a product roadmap helps align stakeholders. What are some common challenges in creating and maintaining a product roadmap?

7 3 2

Rubric	Marks
define product roadmap- 1, how a product roadmap helps align stakeholders and common challenges- 6	7

**(OR)**

**(b)** What is the purpose of sprint planning? What factors should the team consider when estimating the effort required for each sprint backlog item?

Rubric	Marks
purpose of Sprint Planning -2 , factors while estimating the effort required for each Sprint Backlog item? - 5	7

### **Section 5 (Answer all question(s))**

**Marks CO BL**

**Q18.** Explain procurement management in detail.

4 4 2

Rubric	Marks
procurement management in detail	4

**Q19. (a)** Name some common risk in Agile projects? How does Agile's emphasis on collaboration help mitigate risk?

6 4 2

Rubric	Marks
some common risk in Agile projects- 2, Agile's emphasis on collaboration help mitigate risk- 4	6

**(OR)**

**(b)** How are budgets managed in Agile projects? How does Agile handle changes in scope and their impact on cost?

Rubric	Marks
budgets in Agile projects and changes in scope and their impact on cost?	6

### **Section 6 (Answer any 2 question(s))**

**Marks CO BL**

**Q20.** What are key benefits and key resources for Agile project management?

5 5 2

Rubric	Marks
key benefits and key resources for agile project management?	5

**Q21.** What strategies can an Agile project manager employ to act as a change agent and drive Agile adoption within an organization? **5** **5** **2**

Rubric	Marks
strategies can an Agile project manager employ to act as a change agent and drive Agile adoption within an organization	5

**Q22.** Outline the roles and responsibilities of a Scrum Master. How does the Scrum Master handle conflict within the development team? **5** **5** **2**

Rubric	Marks
roles and responsibilities of Scrum Master -3 , Scrum Master handle conflict within the Development Team - 2	5

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