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| **Course: Agile Software Engineering and DevOps** | | **Course Code: CS2004** | **Semester: IV** |
| **Time: 9:30am to 11am** | **Duration: 90 minutes** | **Date: March 14, 2025** | **Max Marks: 25** |

**Notes/ Instructions:**

1. **Answer all questions**

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| **Sl. No.** | **PART A – (MCQs) Max Marks (5)** | **Marks** | **L1-L6** | **CO** |
|  | A Scrum team has an average velocity of 30 story points per sprint. They plan a sprint with 40 story points. What is the most likely outcome?  A. The team will complete all 40 points easily  B. The team may struggle to complete the sprint goal  C. Velocity will automatically increase to 40  D. The sprint duration will be extended | 1 | L3 | CO2 |
|  | Identify the key benefit of Continuous Integration (CI):  A. Less frequent code integration  B. Reducing merge conflicts by integrating frequently  C. Delayed testing process  D. Testing only at the end of development | 1 | L3 | CO4 |
|  | A team’s burndown chart shows a flat line mid-sprint. What does this indicate?  A. The team is progressing steadily  B. Work is not being completed as expected  C. The team finished early  D. Story points increased mid-sprint | 1 | L2 | CO2 |
| 4. | In SAFe, who owns the Product Backlog?  A. Scrum Master  B. Product Owner  C. Agile Coach  D. Release Train Engineer | 1 | L2 | CO2 |
| 5. | Which of the following is a characteristic of non-functional testing?  A. It focuses on specific behaviors of the software  B. It verifies that the software does what it's supposed to do  C. It evaluates the performance, security, and usability of the system  D. It is only performed at the end of the development cycle | 1 | L2 | CO3 |

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| **Sl. No.** | **PART B – Max Marks (20)** | **Marks** | **L1-L6** | **CO** |
| **6.** | **a.** Your Scrum team completes six user stories in a sprint, but only four meet the Definition of Done. How should the team handle the remaining two stories when delivering the Increment? **(2 Marks)**  **b.** Apply your understanding of the 3Cs (Card, Conversation, Confirmation) for creation of user stories and its significance **(3 Marks)** | 5 | L3 | CO2 |
| **7.** | **a.** Write a Git command sequence to clone a repository, create a new branch, switch to it, and push it to a remote repository **(3 Marks)**  **b.** Explain the difference between git pull and git fetch **(2 Marks)** | 5 | L3 | CO4 |
| **8.** | Consider a scenario where you have the following tasks:   |  |  |  | | --- | --- | --- | | Task | Cost of Delay | Duration | | A | 80 | 20 | | B | 150 | 30 | | C | 60 | 10 |  1. Explain Weighted Shortest Job First (WSJF) **(1 Marks)** 2. Compute the WSJF score and rank the tasks **(3 Marks)** 3. What are the core components of Agile Release Train? **(1 Mark)** | 5 | L3 | CO2 |
| **9.** | 1. Compare Regression Testing and Smoke Testing, Give Example **(3 Marks)** 2. Explain Load Testing and its significance, Give Example **(2 Marks)** | 5 | L3 | CO3 |

Course Outcomes

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| CO 1 | Evaluate the advantages and disadvantages of Agile development compared to traditional models |
| CO 2 | Assess various Agile methodologies such as Scrum, XP, Lean, and Kanban, and determine their appropriate applications |
| CO 3 | Create software requirements, design specifications, test plan and Analyze test coverage, requirements traceability for a software project |
| CO 4 | Utilize and implement various DevOps tools (e.g., Git, GitHub, Docker) in a software project |
| CO 5 | Develop a mini software project using Agile Scrum methodology, simulating its roles, meetings, processes, and artifacts |

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| **Marks Distribution** | | | | | | | | | |
| **L1** | **L2** | **L3** | **L4** | **L5** | **L6** | **CO1** | **CO2** | **CO3** | **CO4** |
| 0 | 3 | 22 | 0 | 0 | 0 | 0 | 13 | 6 | 6 |