

Code No: 185BW**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, January - 2025****DEVOPS****(Common to CSE, CE(SE), CSE(DS))****Time: 3 Hours****Max. Marks: 60****Note:** This question paper contains two parts A and B.

i) Part- A for 10 marks, ii) Part - B for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of ten questions (numbered from 2 to 11) carrying 10 marks each. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART- A**(10 Marks)**

- 1.a) Define scrum. [1]
- b) What is release management? [1]
- c) What is a monolithic architecture? [1]
- d) What is the 'separation of concerns' principle? [1]
- e) Define shared authentication. [1]
- f) What is a hosted Git server? [1]
- g) What is the role of the workspace in Jenkins? [1]
- h) Define trigger. [1]
- i) What is integration testing? [1]
- j) What are the main advantages of using Selenium for web application testing? [1]

PART - B**(50 Marks)**

2. What is Agile development, and how does it differ from traditional development methodologies? Explain the concept of iterative development in Agile. [10]
- OR**
3. Explain the concept of 'visual management' in Kanban. How does the Kanban board facilitate work visualization? [10]
 4. What is Continuous Testing, and how is it integrated into the DevOps pipeline? What are the key principles of Continuous Testing in a DevOps environment? [10]
- OR**
5. What are some key rules of thumb for designing software architecture that aligns with DevOps principles? [10]
 6. Explain the differences between Centralized Version Control Systems (CVCS) and Distributed Version Control Systems (DVCS). [10]
- OR**
7. Why is it important to migrate from one source code management system to another (e.g., from SVN to Git)? What are the typical challenges encountered when migrating source code repositories? [10]

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8. What are some commonly used Jenkins plugins for automating testing, deployment, and notification? Explain the role of the Jenkins Pipeline plugin and how it can be used to define build workflows? [10]

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9. Explain how to set up and configure Jenkins build slaves in a distributed build environment. What are the best practices for managing and scaling build slaves in Jenkins? [10]

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10. What is the role of locators in Selenium, and what types of locators can be used to find elements on a page? How can Selenium be used to automate form submissions in a web application? [10]

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11. What is the role of test runners in JavaScript testing, and how do they help automate tests? Explain how to test asynchronous JavaScript code. [10]

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