

Roll No.



PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – May / June 2026

Date: 27-05-2026

Time: 01:00pm – 04:00pm

School: : SOCSE	Program: CDV	
Course Code : CDV2508	Course Name: Continuous Integration Continuous delivery CI/CD Pipeline	
Semester: VI	Max Marks:100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	26	14	14	22	24

Instructions:

- (i) Read all questions carefully and answer accordingly.
(ii) Do not write anything on the question paper other than roll number.
- Part A**

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1.	Define Kubernetes and state its role in container orchestration.	2 Marks	L2	C05
2.	Describe the concept of a deployment strategy in CI/CD pipelines.	2 Marks	L2	C05
3.	Differentiate between SAST and DAST based on their approach and usage.	2 Marks	L2	C04
4.	Explain the purpose of performance testing in software development.	2 Marks	L2	C03
5.	Define a YAML file and its role in CI/CD pipeline configuration.	2 Marks	L2	C03
6.	Explain polling in the context of webhooks and CI/CD automation.	2 Marks	L2	C02
7.	List the components of Jenkins architecture.	2 Marks	L2	C02
8.	Describe automated testing in Continuous Integration and its importance.	2 Marks	L2	C01
9.	Define an artifact repository and its role in CI/CD pipelines.	2 Marks	L2	C01
10.	List and outline the stages of a CI/CD pipeline.	2 Marks	L2	C01

Part B

Answer the Questions.

Total Marks 80M

11.	a.	Illustrate the architecture of Docker, explaining its components and workflow in CI/CD pipelines.	10 Marks	L3	C05
Or					
12.	a.	Explain Blue-Green Deployment with a diagram, including its advantages and limitations.	10 Marks	L3	C05
Or					
13.	a.	Analyze the limitations of rolling updates and justify why zero-downtime may not always be achievable.	5 Marks	L3	C05
	b.	Examine the importance of integrating Docker with Kubernetes in modern CI/CD pipelines.	5 Marks	L3	C05
Or					
14.	a.	Illustrate the Canary Deployment process with a suitable example, including its advantages and limitations.	10 Marks	L3	C05
Or					
15.	a.	Examine the role of code quality checks in improving CI/CD pipeline reliability.	5 Marks	L3	C04
	b.	Analyze pipeline observability using logging and metrics, and justify its importance in monitoring CI/CD pipelines.	5 Marks	L3	C04
Or					
16.	a.	Demonstrate and explain Jenkins pipeline groovy scripting for build, test, and code analysis stages.	10 Marks	L3	C04
Or					
17.	a.	Demonstrate integration testing of services with a suitable workflow example (e.g., Calculator Service + Repository).	10 Marks	L3	C04
Or					
18.	a.	Analyze static code analysis using SonarQube, including bug detection, code smells, and security vulnerabilities with an example.	10 Marks	L3	C04
Or					
19.	a.	Evaluate version control integration in CI/CD pipelines and its role in automating software development.	10 Marks	L3	C03
Or					
20.	a.	Describe different types of webhook events and their role in automation	5 Marks	L3	C03
	b.	Explain different types of CI/CD triggers with suitable examples.	5 Marks	L3	C03
Or					
21.	a.	Compare GitHub Actions and Jenkins in terms of architecture and pipeline execution	5 Marks	L3	C02

	b.	Compare GitLab CI and Jenkins with respect to features and use cases.	5 Marks	L3	C02
Or					
22.	a.	Justify the significance of YAML files in CI/CD pipeline configuration.	5 Marks	L3	C02
	b.	Explain the significance of Jenkins with a suitable example.	5 Marks	L3	C02

23.	a.	Differentiate Continuous Delivery and Continuous Deployment with examples.	10 Marks	L3	C01
Or					
24.	a.	Illustrate the CI/CD lifecycle with a suitable example.	10 Marks	L3	C01

25.	a.	Design a Jenkins pipeline where: • Code is built on every commit • Tests run every 2 hours • Deployment happens every Sunday Explain the scheduling logic in detail.	10 Marks	L3	C01
Or					
26.	a.	Analyze each stage of a CI/CD pipeline and discuss the tools used at each stage.	10 Marks	L3	C01