

Enrollment No./Seat No.:

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER - III EXAMINATION - WINTER 2025

Subject Code: MC03094111

Date: 24-11-2025

Subject Name: DevOps Engineering

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Use of simple calculators and non-programmable scientific calculators are permitted.**

| | Marks |
|---|--------------|
| Q.1 (a) What is Continuous Integration? Explain its importance in DevOps. | 07 |
| (b) Write a detailed note on GitHub. How is it different from Git? | 07 |
| Q.2 (a) Discuss the benefits and challenges of implementing DevOps in an organization. | 07 |
| (b) Explain the stages of a GitHub Actions workflow and its triggers. | 07 |
| OR | |
| (b) Explain Docker images, containers, and registries. | 07 |
| Q.3 (a) What is Source Code Management (SCM)? Explain its importance in DevOps and software development. | 07 |
| (b) What is Docker? Explain its architecture. | 07 |
| OR | |
| (a) What is Configuration Management? Explain the role of Ansible. | 07 |
| (b) Differentiate between Continuous Delivery and Continuous Deployment. | 07 |
| Q.4 (a) What is Kubernetes orchestration? Discuss its advantages. | 07 |
| (b) Write a step-by-step process to configure a Jenkins job for automated testing. | 07 |
| OR | |
| (a) Explain the concept of containerization. Compare containers with virtual machines. | 07 |
| (b) What are Jenkins plugins? Explain any five popular plugins. | 07 |
| Q.5 (a) Explain the process of application deployment using Kubernetes. | 07 |
| (b) Discuss the importance of monitoring and feedback in the DevOps pipeline. | 07 |
| OR | |
| (a) Discuss compliance and audit automation in DevOps pipelines. | 07 |
| (b) Discuss the ELK stack architecture. | 07 |
