UPES
End Semester Examination, May 2025

Course: Applied DevOps
Semester: II
Program: M. Tech   **Time: 03 hrs.**
Course Code: CSDV7001   **Max. Marks: 100**
Instructions: Attempt Every Question

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Narrate a real-world project failure that could have been avoided with Agile practices. What core Agile values would have helped?	4	CO1
Q 2	Explain why "working software over comprehensive documentation" can be controversial. Provide a use-case where this trade-off is justified.	4	CO2
Q 3	Developers and IT operations often clashed in the pre-DevOps era. Describe this conflict with an example and explain how DevOps resolves it	4	CO3
Q 4	Name any two key differences between Agile and Waterfall methods.	4	CO4
Q 5	Explain how GitHub Actions supports DevOps practices using a CI/CD perspective.	4	CO5

SECTION B
(4Qx10M= 40 Marks)

Q 6	Consider a team practicing Agile but still facing delivery delays. As a DevOps consultant, analyze possible causes across CI/CD, CAMS, and configuration. Suggest improvements.	10	CO4
Q 7	Agile focuses on customer collaboration and adaptability. Explain how Agile principles improve project success compared to the traditional Waterfall method. Include a real or hypothetical project scenario to highlight your points.	10	CO5
Q 8	As a DevOps engineer, you are to design a CI/CD pipeline for a healthcare web application. List and justify the pipeline stages. How would you ensure compliance and quality?	10	CO3
Q 9	Analyze how organizational culture and blamelessness contribute to effective Root Cause Analysis. Support your answer with a scenario. OR Evaluate how Configuration Management and Infrastructure as Code can help reduce deployment failures in a cloud-based architecture.	10	CO2

SECTION-C
(2Qx20M=40 Marks)

Q 10	(a)You've been hired by a fintech firm to implement SRE practices to reduce downtime. Build a strategy addressing incident management, automation, monitoring, and escalation. Justify the SRE principles applied. OR (b) Propose a complete automated workflow for a government portal including version control, CI/CD, testing, rollback strategy, and security layers. Justify each element chosen.	20	CO1
Q 11	(a)Design a DevOps pipeline for a global e-commerce platform ensuring both agility and security. Address aspects like Infrastructure as Code, secure configuration, vulnerability scanning, and deployment automation. OR (b) A global online education platform wants to ensure 99.99% uptime across multiple regions. As an SRE consultant, develop a comprehensive strategy covering service monitoring, alerting, disaster recovery, and blameless postmortems. Justify how your plan aligns with SRE best practices.	20	CO2