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Bengaluru

Mid Term Examinations - October 2026

Date: 06/10/2026 **Time:** 02:00 PM - 03:30 PM

Course Code: CDV2515 **Course Name:** Applied DevOps Engineering

Semester: Seventh Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	44	46

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Define Release Orchestration.	2	CO1	BT1
2	Explain the purpose of Infrastructure as Code (IaC) with an example.	2	CO1	BT2
3	List the four types of Service Level Indicators (SLIs).	2	CO2	BT1
4	Compare Incident Management and Problem Management in the ITIL framework.	2	CO2	BT2
5	A service has an SLO of 99.5% availability over a 30-day month and experienced 150 minutes of downtime. Calculate the error budget in minutes and determine whether it has been exceeded.	2	CO2	BT3

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain the need for Self-Service Infrastructure in an enterprise. Describe the major components of Self-Service Infrastructure.	10	CO1	BT2
7	Explain the four cloud delivery models with an example for each.	10	CO1	BT2

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	(a) Explain the Enterprise DevOps Platform and its objectives. (3) (b) Describe its major components (source code management, CI, CD, IaC, monitoring and logging, security automation, container management and cloud services) with popular tools. (7)	10	CO1	BT2
9	(a) Explain Deployment Governance and its objectives. Describe how standardized policies, approval workflows, access control and audit mechanisms support secure and compliant deployments. (6) (b) Explain how Delivery Optimization Strategies improve the speed, quality and reliability of software delivery. (4)	10	CO1	BT2

PART D: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT

10	At 14:05, monitoring shows that the checkout service is failing for about 20% of users. The failures began after a deployment made at 13:50. The payment provider's status page reports no issues. (a) Apply the severity classification framework (SEV1–SEV4) to classify this incident and give the reason. (2) (b) Assign the four typical incident roles for this incident and state the responsibility of each. (4) (c) List the mitigation actions the team should take, in a suitable order. (2) (d) Outline the resolution, recovery and follow-up steps after the service is restored. (2)	10	CO2	BT3
11	A payment microservice runs on Kubernetes with three replicas spread across three availability zones behind a load balancer. Apply the Chaos Engineering process to this service: (a) State the objective and a hypothesis for the experiment. (2) (b) Describe the experiment: the failure to be injected, its scope, and the metrics to be monitored. (4) (c) Select a suitable tool from LitmusChaos, Chaos Mesh and Gremlin and state its role in the experiment. (4)	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	(a) Explain Resilience Engineering and how it differs from Reliability Engineering. (4) (b) Explain the components of Resilience Engineering.(6)	10	CO2	BT2
13	(a) Explain Root Cause Analysis (RCA) and why it matters in DevOps. (4) (b) Explain how tools such as Prometheus, Grafana, the ELK Stack, Splunk, Datadog and Jira support RCA. (6)	10	CO2	BT2