

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Third semester***Computer Science and Engineering****PCSE2421 - DEVOPS AND MICROSERVICES***Regulations - 2024**Duration : 3 Hrs**Maximum : 100 Marks***PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

<i>Q.No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Mention two key features of the Agile Process Model.	L1	1	2
2.	Write any two barriers to DevOps adoption.	L2	1	2
3.	Mention two advantages of containers over virtual machines.	L1	2	2
4.	Recall the roles of virtualization in cloud service delivery.	L1	2	2
5.	State any two coordination approaches used in microservices.	L1	3	2
6.	A software team faces frequent code conflicts. How can continuous integration solve this problem?	L2	3	2
7.	Give one example of a configuration management tool.	L2	4	2
8.	Mention a scenario where manual provisioning fails but automation succeeds.	L2	4	2
9.	Differentiate MLOps and traditional DevOps.	L2	5	2
10.	List the key reasons for performing continuous retraining of deployed ML models.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Compare and contrast Traditional and Agile process models with suitable examples.	L2	1	8
	ii DevOps improves collaboration between Development and Operations teams. – Justify with suitable practices.	L2	1	8
	Or			
	b i With a neat diagram, explain the DevOps lifecycle process.	L2	1	8
	ii Explain the challenges faced by organizations when integrating DevOps with legacy systems.	L2	1	8
12.	a i Explain in detail the different service models of cloud computing (IaaS, PaaS, SaaS) with suitable examples.	L2	2	8
	ii Illustrate with an example how containers differ from virtual machines.	L2	2	8

Or

	b	i	Describe the processes involved in hardware and software provisioning in cloud infrastructure.	L2	2	8
		ii	Explain the role of encryption and identity management in preventing unauthorized access and data breaches in multi-tenant cloud environments.	L2	2	8
13.	a	i	Evaluate the role of coordination models in microservices communication.	L5	3	8
		ii	Evaluate the effectiveness of pre-commit testing in minimizing deployment errors in production environments.	L5	3	8
			Or			
	b	i	Explain how a deployment pipeline helps achieve continuous delivery (CD) in microservices.	L2	3	8
		ii	Explain the concept of identity management in microservices.	L2	3	8
14.	a	i	Analyze the impact of infrastructure automation on reducing human errors in large-scale IT environments.	L4	4	8
		ii	Discover the performance management and its role in IT services.	L2	4	8
			Or			
	b	i	Analyze the effectiveness of using real-time log monitoring tools for fault detection in distributed cloud systems.	L4	4	8
		ii	List the challenges of monitoring multi-cloud environments.	L2	4	8
15.	a	i	Discuss the Various key challenges faced in MLOps.	L2	5	8
		ii	Explain the steps involved in developing ML models within an MLOps framework.	L2	5	8
			Or			
	b	i	Discuss the importance of continuous retraining and testing for maintaining model performance in production.	L2	5	8
		ii	Discuss three real-world applications of MLOps in different industries.	L2	5	8