

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Third Semester

Computer Science and Engineering

IF4073 – Devops and Microservices

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	Why software engineering is required?	UN	1	2
2.	Define DevOps.	RE	1	2
3.	Write your opinion on maintaining consistency in distributed system.	UN	2	2
4.	Distinguish between open-loop and closed-loop control.	UN	2	2
5.	Write the two important points on registry used in communication model.	UN	3	2
6.	Why the software process system is moving through the deployment pipeline?	UN	3	2
7.	State the common pitfalls in deployment automation.	RE	4	2
8.	What are the benefits of configuration management?	UN	4	2
9.	Why MLOps is used? Who are all used it?	UN	5	2
10.	How do you adopt MLOps in ML and CI/CD pipeline?	UN	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

Q.No	Questions	BLT	CO	Marks
11.	a i Explain the life cycle process of DevOps with suitable examples.	AP	1	6
	ii Why haven't all organizations adopted DevOps practices? Analyze its barriers with example.	AN	1	7
	Or			
	b i Discuss the structure and roles of development team in DevOps Process.	AP	1	6
	ii Analyze the difference between Agile and DevOps approaches.	AN	1	7
12.	a i Explain the DevOps consequences of the unique cloud features.	AP	2	6
	ii Describe the operations services in provisioning of hardware and software.	AP	2	7
	Or			
	b i Discuss the positive aspects on SLA.	AP	2	6
	ii Explain the three types of cloud service models with suitable example of service provider and services offered.	AP	2	7

13.	a i	Design a microservice architectural pattern for food delivery application.	AP	3	6
	ii	How do you build an executable artifact and compose with integrate testing? Explain.	AP	3	7
Or					
	b i	Classify the various crosscutting aspects of testing done through a deployment pipeline.	AP	3	6
	ii	Compose the ideas to protect the information and computation resources.	AP	3	7
14.	a	How do you interpret monitoring data? Illustrate it with example.	AN	4	13
	Or				
	b	Analyze the process and benefits of infrastructure automation.	AN	4	13
15.	a i	Explain the challenges have to be focused in developing ML models in DevOps.	AP	5	7
	ii	Describe the steps applied by data scientist for ML automation.	AP	5	6
Or					
	b	How do you apply automation over ML pipeline of MLOps? How it is differed from manual process? Explain in detail.	AP	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Examine the various IT services.	AN	2	15
Or					
	b	Compare and contrast virtualization with containerization.	AN	2	15