Department of IT

B. Tech. Mid Question Bank (R20 Regulation)

Academic Year: Semester: IV-I

Subject Name: Devops

Faculty Name: M. Srinivas

PART-A

Q.No	Questions	Marks	BL	CO	Unit No
1	Explain Scrum?	2	L2	1	1
2	Explain importance of Devops in project development.	2	L2	1	1
3	Explain in detail about Agile Development Model with a neat diagram.	2	L2	1	1
4	Explain DevOps and ITIL are not mutually exclusive. Justify.	2	L2	1	1
5	Explain in detail about DevOps Continuous Delivery Pipeline.	2	L2	1	1
6	List the different possible cases for Bottle necks in CI/CD? With an example explain DevOps Process?	2	L2	1	1
7	Explain DevOps Life-cycle for Business Agility?	2	L2	2	2
8	Discuss about Continuous Testing in DevOps?	2	L3	2	2
9	Explain in detail about Monolithic Architecture with a neat diagram?	2	L2	2	2
10	How to handle Database Migrations?	2	L5	2	2
11	Explain in detail about Micro services Architecture with a neat diagram?	2	L2	2	2
12	Discuss about Resilience in DevOps?	2	L3	2	2
13	What is the need of Source Code Control?	2	L2	3	3
14	In DevOps, how Source code management is useful for different Roles?	2	L3	3	3
15	Explain about Migrations of different Source Code Management Systems?	2	L2	3	3
16	Write a short notes on Shared Authentication?	2	L5	3	3
17	Explain in detail about Hosted Git Servers?	2	L2	3	3
18	Write short notes on Decker Intermission?	2	L3	3	3
19	List out the different Build Systems available today?	2	L3	4	4

20	How to use Jenkins Build Server to create builds?	2	L2	4	4
21	Discuss about Build Slaves?	2	L4	4	4
22	Write short notes on Triggers? Explain in detail about Job Chaining and Build Pipelines?	2	L1	4	4
23	Explain in detail about Job Chaining and Build Pipelines?	2	L3	4	4
24	How to create builds by Dependency Order?	2	L2	4	4
25	What are the Pros and Cons of Automated Testing?	2	L1	5	5
26	Write short notes on Selenium? List out the features of it?	2	L2	5	5
27	Discuss about JavaScript Testing?	2	L2	5	5
28	Differentiate Test-driven development from REPL-driven development?	2	L3	5	5
29	Write short notes on: i)Puppet ii)Chef iii)Ansible iv)SaltStac	2	L2	5	5
30	How integrate Selenium test suit in Devops	2	L2	5	5

PART-B

Q.No	Questions	Marks	BL	CO	Unit No
1	Compare Agile and DevOps, and explain their complementary nature in achieving efficient software development and delivery.	3	L1	1	1
2	Discuss the principles and practices of DevOps that improve collaboration and efficiency in IT operations.	3	L3	1	1
3	Explain the significance of Continuous Delivery in DevOps and provide examples of organizations successfully implementing it.	3	L2	1	1
4	Describe release management in DevOps, its challenges, benefits, and real-world examples of successful implementation.	3	L3	1	1
5	Compare and contrast Scrum and Kanbanas Agile methodologies, their support for DevOps, and contribution to software delivery	3	L1	1	1

6	Analyze the relationship between DevOps and ITIL, and how to effectively incorporate ITIL practices within a DevOps culture.	3	L4	1	1
7	Explain Scrum and Kanbanas Agile methodologies, their support for DevOps.	6	L2	1	1
8	Analyze the relationship between DevOps and ITIL, and how to effectively incorporate ITIL practices within a DevOps culture.	6	L4	1	1
9	Explore the role of automation in DevOps, its benefits, challenges, and examples of popular automation tools.	6	L2	1	1
10	Discuss the impact of DevOps on achieving business agility and provide examples of companies that have adopted DevOps for faster software delivery and increased customer responsiveness.	3	L1	1	2
11	Explore continuous testing in DevOps, its contribution to software quality, and the challenges and benefits of implementing it.	3	L3	1	2
12	Explain different Software architecture models.	3	L2	1	2
13	Explain the influence of DevOps on software architecture, focusing on factors like modularity, separation of concerns, and database migrations.	3	L3	1	2
14	Compare monolithic and microservices architectures in the context of DevOps, discussing their advantages and disadvantages and providing real-world examples.	3	L1	1	2
15	Explore the challenges and best practices for handling database migrations in DevOps and discuss available tools.	3	L4	1	2
16	Investigate the relationship between software architecture and DevOps, focusing on how a well-designed architecture supports DevOps principles.	6	L2	1	2
17	Discuss the impact of DevOps on software quality and reliability, providing examples of improvements achieved through DevOps practices.	6	L4	1	2
18	Explain database migrations in DevOps and	6	L2	1	2

	discuss available tools.				
19	Explain the significance of source code control in project management, its history, and role in version control and collaboration.	3	L1	3	3
20	Discuss the roles of developers, testers, and release managers in source code management and how collaboration among them leads to project success.	3	L3	3	3
21	Explore source code management systems, their importance, key features, and how they enable efficient code management and version control code.	3	L2	3	3
22	Investigate challenges and best practices for source code migrations, with examples of successful strategies.	3	L4	3	3
23	Discuss shared authentication for accessing source code repositories, its implementation, benefits, and associated risks.	3	L1	3	3
24	Compare hosted Gitservers like GitHub, GitLab, and Bitbucket, discussing their features, advantages, and limitations.	3	L4	3	3
25	Discuss the role of build systems in DevOps, their key components, and how they automate the software build process. Provide examples of popular build systems.	3	L1	4	4
26	Explore the features and capabilities of the Jenkins build server, its role in continuous integration and delivery, and the benefits and challenges of using Jenkins in DevOps.	3	L3	4	4
27	Explain the importance of managing build dependencies in software development, common challenges, and effective strategies using build automation tools.	3	L2	4	4
28	Discuss the significance of Jenkins plugins in extending its functionality for tasks like code analysis, testing, and deployment. Provide examples of popular Jenkins plugins.	3	L3	4	4
29	Analyze the importance of file system layout in build server configurations, its impact on the build process and artifact management, and	3	L1	4	4

	best practices for designing an efficient layout.				
30	Explain the concept of build slaves in Jenkins, their role in distributed build execution, scalability, and performance improvement. Discuss strategies for configuring and managing build slaves effectively.	3	L4	4	4
31	Investigate triggers in build automation, the types available in Jenkins, and how they initiate the build process based on various scenarios.	6	L2	4	4
32	Explore job chaining and build pipelines in Jenkins, their role in automating complex build processes and deployment workflows, and the benefits of using them. Provide examples of successful implementations.	6	L4	4	4
33	Discuss infrastructure as code (IaC) in the context of build servers, its facilitation of provisioning, configuration, and management. Explain the advantages of using IaC tools for build server infrastructure.	6	L2	4	4

34	Discuss the different types of testing in DevOps, their significance, and contributions to software quality. Provide examples of testing techniques and frameworks used.	3	L2	5	5
35	Explore the benefits and challenges of test automation in software development, its impact on efficiency and accuracy, and best practices for implementing it in DevOps.	3	L3	5	5
36	Explain the features and capabilities of Selenium as a popular testing tool, including web application testing. Discuss its advantages and limitations in a DevOps context.	3	L2	5	5
37	Discuss the challenges and approaches for testing backend integration points in software applications. Provide examples of tools used in testing backend integrations in DevOps.	3	L3	5	5
38	Explore test-driven development (TDD) and its role in ensuring code quality and test coverage.	3	L1	5	5
39	Discuss the principles, benefits, and challenges	3	L4	5	5

	of implementing TDD in DevOps.				
40	Discuss REPL-driven development and its benefits for iterative testing and rapid code prototyping. Explain how it aligns with DevOps principles and facilitates faster feedback loops.	6	L2	5	5
41	Explore deployment systems and strategies in DevOps, including continuous deployment and delivery. Provide examples of popular deployment systems.	6	L4	5	5
42	Discuss the role of virtualization stacks, including hypervisors and containerization platforms like Docker, in efficient and scalable application deployment. Explain their alignment with DevOps principles.	6	L2	5	5