

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Course: Continuous Integration and Continuous Deployment

Program: B.Tech. CS + DevOps

Course Code: CSDV3001

Semester: V

Time : 03 hrs.

Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q1	Explain the following benefits of Continuous Integration with suitable points. a) Reduce Risk b) Faster Iteration	4	CO 3
Q2	How is DevOps different from Traditional SDLC? Explain the prerequisites those are essential for adopting DevOps.	4	CO 1
Q3	“Commit early. Commit frequently” this is the fundamental principle of CI/CD. Explain.	4	CO 1
Q4	What is the Significance of Automated Unit Testing? Explain Automated Unit Testing in process in brief.	4	CO 2
Q5	Emergency Fix for any bug is avoided in DevOps Culture. Explain its consequences on failure/success of a project.	4	CO 1 CO 2

SECTION B

Q6	Explain the following core steps in CI/CD Process with suitable points. a) Build b) Test c) Stage	10	CO4
Q7	Explain the significance of Jenkins Tool in CI/CD process. How is it useful for Integrating following tool for various activities in Software Development and Deployment. a) GitHub b) Nexus c) Sonarqube	10	CO 2 CO 3
Q8	What is Functional Testing? Explain various steps involved in Automated Functional Testing.	10	CO 2

Q9	<p>Explain the following metrics in brief</p> <ol style="list-style-type: none"> Cycle Time Change Lead Time Change Failure Rate <p style="text-align: center;">OR</p> <p>Explain the significance of Lean Development methodology in DevOps implementation.</p> <p>Categories the following statement as a Myth or Fact for DevOps. Write some technical points to support your statement.</p> <p style="text-align: center;">“DevOps is only for Unicorns”</p>	10	CO 2
SECTION-C			
Q 10	<p>What is Agile? How can we say that Devops is Inspired from Agile? Explain the tools used in CI/CD with their specific roles. Write down the various steps involved in generating a build from GitHub repository by Jenkins using Maven and deploy the same build on Nexus Server.</p>	20	CO1 CO3
Q11	<p>Explain the following sample reports for Sonarqube used in Static Code Analysis.</p> <ol style="list-style-type: none"> OWASP Top 10 Sample Report SANS Top 25 Sample report <p style="text-align: center;">OR</p> <p>What is the significance of Static Code Analysis? Explain Data Flow Analysis in detail. Explain the following code coverage methods in detail.</p> <ol style="list-style-type: none"> Condition Coverage Line Coverage 	20	CO 4