UPES
UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec 2021

Course: Continuous Integration and Continuous Deployment　　　**Semester　: V**
Program: B.Tech. CS + DevOps　　　　　　　　　　　　　　　　**Time　　 : 03 hrs.**
Course Code: CSDV3001　　　　　　　　　　　　　　　　　　　**Max. Marks: 100**

Instructions:

SECTION A

1. Each Question will carry 4 Marks
2. Write Minimum 80 Words.

S. No.		Marks	CO
Q1	Explain CICD Pipeline. Explain the significance of CD in brief.	**(2+2=4 Marks)**	**CO2**
Q2	Explain Automate Code Build process in detail. Explain various key metrics used in this process.	**(2+2=4 Marks)**	**CO3**
Q3	Define UAT environment in DevOps. Explain Alpha and Beta types of Acceptance Testing.	**(2+2=4 Marks)**	**CO2**
Q4	Emergency Fix for any bug is avoided in DevOps Culture. Explain its consequences on failure/success of a project.	**(2+2=4 Marks)**	**CO2**
Q5	Define TestNG framework. Explain in detail the core feature of this tool used for Automated Testing.	**(2+2=4 Marks)**	**CO4**

SECTION B

1. Each question will carry 10 marks
2. Instruction: Write short / brief notes (Minimum 150 Words)

Q6	Describe the Principles of continuous delivery. Explain any ten (10) of them in detail.	**(5+5=10 Marks)**	**CO2**
Q7	Define Continuous Integration in detail. Enlist Best Practices of Continuous Integration and Explain any five of them in detail.	**(5+5=10 Marks)**	**CO1**
Q8	Enlist Top 10 tools used for DevOps. Explain the flow and integration of these tools for following processes. 　　a) Continuous Integration 　　b) Continuous Monitoring 　　c) Continuous feedback	**(4+2+2+2=10 Marks)**	**CO3**

Q9	Explain the significance of Maven and Jenkins Tool. Discuss Continuous Deployment Pipeline in detail. OR Explain the significance of Release Preparation and Release Planning in Deployment. Explain Release Planning in detail.	(5+5=10 Marks)	CO3

SECTION-C

1. Each Question carries 20 Marks.
2. Instruction: Write long answer. (Minimum 250 Words)

Q 10	Define Downtime Release. Explain the following Processes in detail with suitable diagrams.
	    a) Blue Green Deployment
	    b) Canary release
		(5+5+5+5 = 20 Marks)	CO1

Q 11	Explain Quality Profile. Explain the significance of Static Code Analysis. Enlist OWASP Top 10 Security Risks and Explain any 05 of them in detail. OR "Static Code Analysis is one of the most important process for Code Quality". Explain this statement in detail. Enlist SANS Top 25 Software Errors and Explain any 10 of them in detail.	(5+5+5+5 = 20 Marks)	CO4