Name: Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Application Containerization **Semester: VI**
Program: B.Tech. CS + DevOps **Time : 03 hrs.**
Course Code: CSDV3005 **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q1.	Define Docker Engine. Enlist the features are provided by Docker Enterprise Edition instead of Docker Community Edition?	**4**	**CO1**
Q2.	Explain Container. Write any five major differences between Container and Virtual Machine.	**4**	**CO1**
Q3.	Explain Kubelet, Kubectl and kube-scheduler in brief.	**4**	**CO2**
Q4.	Enlist the different ways for building a Docker image. Write complete Docker Commands for multiple options used for building an image.	**4**	**CO3**
Q5.	Differentiate between RUN, UP and START under docker-compose.	**4**	**CO4**

SECTION B
(4Qx10M= 40 Marks)

Q6.	Write the significance of following files in Docker. a) Dockerfile b) Docker-compose file c) .dockerignore file	**10**	**CO1**
Q7.	Explain Docker Image and Docker Image Registry. Explain various Docker command relate to images.	**10**	**CO3**
Q8.	Enlist different network drivers used in Docker. Define the default Docker network driver, and how can you change it when running a Docker image?	**10**	**CO3**
Q9.	Define orchestration. How does Docker support orchestration? Explain various concepts used in Docker Swarm with some proper Docker commands.	**10**	**CO1**

	OR Write a short note on following a) Hypervisor b) Docker Volume		
SECTION-C (2Qx20M=40 Marks)			
Q10.	Explain a) FreeBSD b) LXC c) Chroot System Calls d) Cgroup	**20**	**CO2**
Q11.	Differentiate between Docker Swarm and Kubernetes. Explain the following terms related to Docker Swarm and Kubernetes. a) Docker Container b) Kubernetes Pods c) Minikube OR Explain the significance of Micro-Services based architecture over Monolithic Architecture for an Application. How is Docker supporting Micro- Services based architecture? Explain the similarity of Docker Containers in IT Industry with Shipping Containers in Shipping Industry.	**20**	**CO4**