Name: Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2024.

Course: Container and Docker Security **Semester: V**
Program: B.Tech. CS + DevOps **Time   : 03 hrs.**
Course Code: CSEG3045 **Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q1.	Explain the lifecycle of a Docker Container? Write suitable command for each phase.	4	CO1
Q2.	Differentiate between a Docker Image and Docker Container. Write any five Docker commands used for Container.	4	CO1
Q3.	Explain storage driver. Enlist all storage driver. Explain any two in detail.	4	CO2
Q4.	Define Hypervisor. Explain with example two types of Hypervisors.	4	CO4
Q5.	Explain Kubernetes. Differentiate between Docker Swarm and Kubernetes.	4	CO2

SECTION B
(4Qx10M= 40 Marks)

Q6.	Explain Docker-compose file. Outline the significance of this file in Docker Containerization Technology. Write a docker-compose file to start MYSQL and NGINX micro service simultaneously.	10	CO1
Q7.	Explain the significance of Dockerfile. Write a Dockerfile contains Seven Layers and explain each layer in detail.	10	CO1
Q8.	Define Containerization Technology. Enlist the significance of Containerization in DevOps. Explain with a proper Diagram.	10	CO3
Q9.	Define orchestration. How does Docker support orchestration? Explain various concepts used in Docker Swarm with some proper Docker commands.	10	CO3

	OR Enlist different network drivers used in Docker. Enlist the default Docker network driver, and how can you change it when running a Docker image?		
	SECTION-C **(2Qx20M=40 Marks)**		
Q10.	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**	**CO2**

Q11.	Explain
	   a) Container Monitoring
	   b) Docker Hub
	   c) Vagrant and Vagrant Cloud
	
	OR
	Explain the following
	   a) Amazon Kubernetes Services
	   b) Azure Kubernetes Service
		20	**CO4**