


<b>Name:</b> <b>Enrolment No:</b>			
<p align="center"><b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b>  <b>End Semester Examination, December 2022</b></p> <p> <b>Course: Application Containerization and Orchestration</b>  <b>Program: B.Tech. CS + DevOps</b>  <b>Course Code: CSDV3010</b> </p> <p align="right"> <b>Semester: V</b>  <b>Time : 03 hrs.</b>  <b>Max. Marks: 100</b> </p> <p><b>Instructions:</b></p>			
<p align="center"><b>SECTION A</b>  <b>(5Qx4M=20Marks)</b></p>			
S. No.		Marks	CO
Q1.	Differentiate between virtualization and containerization with suitable example.	4	CO1
Q2.	Define Docker. Explain its major advantages with a suitable example.	4	CO1
Q3.	Differentiate between a Docker Image and Docker Container. Write any five Docker commands used for Container.	4	CO2
Q4.	Explain the lifecycle of a Docker Container? Write suitable command for each phase.	4	CO4
Q5.	Explain Kubernetes. Differentiate between Docker Swarm and Kubernetes.	4	CO2
<p align="center"><b>SECTION B</b>  <b>(4Qx10M= 40 Marks)</b></p>			
Q6.	Write a short note on following a) Docker Network b) Docker Volume	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

	<p style="text-align: center;">OR</p> <p>Enlist different network drivers used in Docker. Enlist the default Docker network driver, and how can you change it when running a Docker image?</p>		
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
Q10.	<p>Explain Container Dependency? 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.</p>	<b>20</b>	<b>CO2</b>
Q11.	<p><b>Explain</b></p> <ul style="list-style-type: none"> <li>a) Container Monitoring</li> <li>b) Docker Hub</li> <li>c) Vagrant and Vagrant Cloud</li> </ul> <p style="text-align: center;">OR</p> <p>Explain the following</p> <ul style="list-style-type: none"> <li>a) Amazon Kubernetes Services</li> <li>b) Azure Kubernetes Service</li> </ul>	<b>20</b>	<b>CO4</b>