



DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
THIRD SESSIONAL
SUBJECT: (CE-627) WEB SERVICE DEVELOPMENT

Examination : B.Tech Semester - VI
Date : 21/03/2025
Time : 2:30 p.m. to 3:45 p.m.

Seat No. : 103
Day : Friday
Max. Marks : 36

INSTRUCTIONS:

1. Figures to the right indicate maximum marks for that question.
2. The symbols used to carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

- Q.1 Do as directed. [12]**
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|-----|---|-----|--|-----|
| CO4 | E | (a) | What are the key responsibilities of an API Gateway? | [2] |
| CO4 | N | (b) | What are the challenges with microservice architecture? | [2] |
| CO4 | A | (c) | How scaling can be achieved in microservice architecture? | [2] |
| CO5 | U | (d) | Compare docker run vs. docker exec commands with example. | [2] |
| CO5 | R | (e) | Differentiate: docker images vs. docker containers. | [2] |
| CO5 | A | (f) | Write and describe a command to create deployment in kubernetes. | [2] |

- Q.2 Attempt ANY TWO of the following questions. [12]**
- | | | | | |
|-----|---|-----|---|-----|
| CO4 | U | (a) | Compare a standard Web API-based service with a Microservice architecture. | [6] |
| CO4 | N | (b) | Design and implement two separate APIs for a flight booking system: one for passenger management and the other for ticket booking management. Use the Ocelot API Gateway to route user requests to the appropriate API endpoints. Define models and implement basic GET methods for both APIs, along with the configuration for the ocelot.json file. | [6] |
| CO4 | U | (c) | Explain how Load balancing, Rate limiting and Caching can be configured in Ocelot with example. | [6] |

- Q.3 Attempt the following questions. [12]**
- | | | | | |
|-----|---|-----|--|-----|
| CO5 | U | (a) | Explain and compare the working of docker containers and virtual machines. | [6] |
| CO5 | N | (b) | Which components are part of control plane in kubernetes? Define the role of each component. | [6] |

OR

- Q.3 Attempt the following questions. [12]**
- | | | | | |
|-----|---|-----|---|-----|
| CO5 | U | (a) | What is the role of volumes for docker containers? Write docker commands to achieve following:
1. Create a container from ubuntu image.
2. Create a volume named my_data.
3. Attach the volume with container.
4. Print detailed information of the volume. | [6] |
| CO5 | N | (b) | What is the role of pod for kubernetes? List and describe the role of components of worker node. | [6] |