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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Edge Computing (course)

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Course outline

About
NPTEL ()

How does an
NPTEL
online
course
work? ()

Week 0 ()

Week 1:
Cloud and
Edge
Computing ()

Week 2 :
Edge
Computing ()

Week 3: Assignment 3

The due date for submitting this assignment has passed.

Due on 2025-02-12, 23:59 IST.

Assignment submitted on 2025-02-10, 09:48 IST

1) What is the smallest deployable unit in Kubernetes?

1 point

- ☒ Pod
☐ Node
☐ Container
☐ Cluster

Yes, the answer is correct.

Score: 1

Accepted Answers:

Pod

2) What does Kubernetes primarily manage in a containerized environment?

1 point

- ☐ Physical servers
☒ Container orchestration
☐ Virtual machines
☐ Data encryption

Yes, the answer is correct.

Score: 1

Accepted Answers:

Container orchestration

3) If a Kubernetes deployment specifies 5 replicas for a Pod, how many Pods will be running if 2 nodes fail in a cluster of 10 nodes?

1 point

- ☐ 3

Week 3 :
Edge
Intelligence
()

Week 4 :
Edge
Intelligence
()

Week 5 :
Mobile Edge
Computing ()

Week 6:
Clock
Synchronizat
ion ()

Week 7 :
Security and
Privacy in
Edge
Computing ()

Download
Videos ()

Demo ()

- ☒ 5
☐ 7
☐ 0

Yes, the answer is correct.

Score: 1

Accepted Answers:

5

4) Which of the following is NOT a core component of the Kubernetes Control Plane? **1 point**

- ☐ API Server
☒ kube-proxy
☐ Scheduler
☐ Controller Manager

Yes, the answer is correct.

Score: 1

Accepted Answers:

kube-proxy

5) What is the function of a Namespace in Kubernetes?

1 point

- ☒ Group and isolate cluster resources
☐ Perform health checks on containers
☐ Automate node scaling
☐ Monitor cluster metrics

Yes, the answer is correct.

Score: 1

Accepted Answers:

Group and isolate cluster resources

6) What is the primary purpose of the kube-proxy?

1 point

- ☐ Monitor node health
☐ Store data persistently
☒ Provide network load balancing
☐ Manage application configurations

Yes, the answer is correct.

Score: 1

Accepted Answers:

Provide network load balancing

7) If a Service in Kubernetes balances traffic across 4 Pods, and each Pod handles 100 requests per second, what is the total throughput of the Service? **1 point**

- ☐ 100 requests/second
☐ 200 requests/second
☐ 300 requests/second
☒ 400 requests/second

Yes, the answer is correct.

Score: 1

Accepted Answers:

400 requests/second

8) If a Deployment specifies a rolling update strategy with maxUnavailable: 1 and there are 10 replicas, how many Pods will remain available during the update? **1 point**

- ☐ 7
- ☐ 8
- ☒ 9
- ☐ 10

Yes, the answer is correct.

Score: 1

Accepted Answers:

9

9) What is the function of the Kubernetes Scheduler?

1 point

- ☐ Monitor Pod health
- ☒ Assign Pods to suitable nodes
- ☐ Store cluster state in etcd
- ☐ Expose Pods to external traffic

Yes, the answer is correct.

Score: 1

Accepted Answers:

Assign Pods to suitable nodes

10) How many replicas will be created if a Deployment is configured with replicas: 4? **1 point**

- ☐ 2
- ☐ 3
- ☒ 4
- ☐ 5

Yes, the answer is correct.

Score: 1

Accepted Answers:

4