



Cloud Computing
Assignment- Week 5
TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

--- is a formal contract between a service provider and a service consumer.

- a. SLA
- b. SLO
- c. KPI
- d. Utility Premium

Correct Answer: a

Detailed Solution: SLA is a formal contract between a service provider and a service consumer. So, the correct option is (a).

QUESTION 2:

$U > P/A$ indicates that cloud is costlier than owning computer infrastructures. Where U is Utility Premium, P is Peak Demand, and A is Average Demand

- a. True
- b. False

Correct Answer: a

Detailed Solution: When $U > P/A$, the cloud is costlier than owning computer infrastructures. So, the correct option is (a).

QUESTION 3:

Consider the peak computing demand for an organization is 110 units. The demand as a function of time can be expressed as: $D(t) = 3t$, $0 \leq t < 100$

The resource provisioned by the cloud to satisfy current demand at time t is given as: $R(t) = D(t) + \delta \cdot (dD(t)/dt)$

where, δ is the delay in provisioning the extra computing recourse on demand



The cost to provision unit cloud resource for unit time is 0.8 units.

[Assume the delay in provisioning is 4 time units and minimum demand is 0.

(Penalty: Either pay for unused resource or missing service delivery)]

Penalty is

- a. 1100 units
- b. 1200 units
- c. 1300 units
- d. None of these

Correct Answer: b

Detailed Solution: $R[0,100] = \int_0^{100} 0.100 D(t) dt + \delta \int_0^{100} d/dt (D(t)) dt = ((3/2)*t^2) 0.100 + \delta * 3 * \int_0^{100} dt = 15000 + (\delta * 300)$
 $= (15000 + 300*4)$ [As $\delta = 4$]
 $= 16200$

$D[0,100] = \int_0^{100} 0.100 3t dt = 15000$

$|R-D| = 1200$

So, the correct option is (b).

QUESTION 4:

A third party application runs in the cloud for 15 hours/day. At the end of one month [30 days], it was found that the cloud service suffered 7 outages of durations: 1 hour 30 minutes, 30 minutes, 1 hour 15 minutes, 45 minutes, 2 hours, 1 hour, and H hours, each on different days over the service period.

Suppose a cloud guarantees service availability for 97% of time.

What will be the possible value(s) of H that SLA negotiation gets honored in terms of service availability?

- a. 8 hours
- b. 6 hours
- c. 3 hours
- d. 9 hours

Correct Answer: b, c

Detailed Solution: Total Outage: (7+H) hours., Application runs in a month: 450



hours. Availability: $[1 - \{(7+H)/(443-H)\}] \geq 0.97, H \leq 6.10$
So, the correct options are (b) and (c).

QUESTION 5:

Which of the following is/are correct?

- a. SLA contains SLO
- b. SLO contains SLA
- c. Multiple SLAs are aggregated to KPI
- d. KPIs are aggregated to SLO

Correct Answer: a, d

Detailed Solution: SLA contains SLO. KPIs are aggregated to SLO. So, the correct options are (a) and (d).

QUESTION 6:

---- is determining when an activity should start or end, depending on its duration, predecessor activities etc.

- a. Resource estimation
- b. Resource brokering
- c. Resource scheduling
- d. None of the above

Correct Answer: c

Detailed Solution: Resource scheduling is determining when an activity should start or end, depending on its duration, predecessor activities etc. So, the correct option is (c).

QUESTION 7:

Which of the following is/are not a possible parameter of service level agreement (SLA) in cloud?

- a. Response Time or Latency
- b. Availability of the Services
- c. Electricity Cost
- d. Warranty of the Services

Correct Answer: c, d



Detailed Solution: Electricity Cost and Warranty of the Services are not a possible parameter of service level agreement (SLA) in cloud. So, the correct options are (c) and (d).

QUESTION 8:

When load increases, VM management can be done by

- a. Schedule new VMs to new nodes
- b. Shutdown unused nodes
- c. All of these
- d. None of these

Correct Answer: a

Detailed Solution: When load increases, VM management can be done by – a) Schedule new VMs to new nodes. So, the correct option is (a).

QUESTION 9:

In hadoop, which of the following stores metadata?

- a. Data node
- b. Name node
- c. Client node
- d. None of these

Correct Answer: b

Detailed Solution: In hadoop, name node stores metadata. So, the correct option is (b).

QUESTION 10:

In the context of Green Cloud Computing, the DC Server Energy Model is contributed by

- a. CPU
- b. Memory modules
- c. Disks
- d. None of these

Correct Answer: a, b, c

Detailed Solution: In the context of Green Cloud Computing, the DC Server Energy Model is contributed by CPU, memory modules and disks. So, the correct options are (a), (b) and (c).

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