Cloud Computing

Assignment-Week 5

TYPE OF QUESTION: MCQ/MSQ

Number of questions: **10** **Total mark: 10 X 1 = 10**

QUESTION 1:

In a SLA negotiation, the provider agreed with the service availability of 98%. The consumer runs the application for X hours/day. At the end of one month [31 days], the total service outage was 12 hrs. However, SLA negotiation (in terms of service availability) is honored.

a. X is atleast 19.74
b. X is atmost 19.74
c. X is exactly 19.74
d. Insufficient information

Correct Answer: a

Detailed Solution: Total time for which the application will run (in a month)=(X*31) hours Outage time=12 hours Therefore, service duration=(X*31-12) hours % Availability=(1- outage time/service duration)*100 %=(1-(12/(X*31-12)))*100 % Initial service guarantee=98% As, final service availability>= initial service guarantee 98<=(1-(12/(X*31-12)))*100 or, X>=19.74

QUESTION 2:

Average resource demand is 45 units,Baseline (owned) unit cost is 200 units,Time is 10 hours,Peak resource demand is 100 units. If the cloud is cheaper than owning of computer infrastructures, the utility premium is

a. Greater than 2.22
b. Less than 2.22
c. Atleast 4.45
d. Atmost 4.45

Correct Answer: b

Detailed Solution: CT < BT implies A * U * B * T < P * B * T. Or, A*U < P. Or, U < P/A. Where A= Average Demand, U= Utility Premium, B=Baseline (owned) unit cost, T=Time, P=Peak Demand, CT=Cloud cost and BT=Owning cost. Here P=100 units, A=45 units U< P/A implies U< 100/45 or, U < 2.22

QUESTION 3:

In computing, there is a linear relationship between the number of processing cores used and power consumption.

a. TRUE

b. FALSE

Correct Answer: a

Detailed Solution: Refer to slide 10 of resource management-I.

QUESTION 4:

The _____ takes a series of key/value pairs, processes each, and generates zero or more output.

a. map function
b. partition function
c. reduce function
d. None of these

Correct Answer: a

Detailed Solution: The map function takes a series of key/value pairs, processes each, and generates zero or more output.

QUESTION 5:

In a MapReduce framework the HDFS block size is 64 MB. We have 6 files of size 64KB, 65MB, X MB, Y KB, 67KB and 127MB. 24 blocks are created by Hadoop framework. The size of X and Y are respectively [one or more than one options may be correct, select all correct options]:

a. 66 and 64

b. 64 and 64

c. 64 and 66

d. 128 and 64

Correct Answer: b, c

Detailed Solution: The total number of blocks needed for 64 KB, 65 MB, 67 KB, 127 MB is (1+2+1+2)*3=18 [3 is the number of replicas] Number of remaining blocks=(24-18)/3=6/3=2 [3 is the number of replicas] Only option b and c are correct as the size requirement can be satisfied with 2 blocks.

QUESTION 6:

Which among the following is/are logical resource(s)?
a. Network
b. Computer
c. Database
d. Execution
Correct Answer: d
Detailed Solution: Execution is a logical resource.

QUESTION 7:

When load decreases, VM management can be done by
a. Live migrate VMs to more utilized nodes
b. Shutdown unused nodes
c. Migrate VMs to less utilized nodes
d. None of these

Correct Answer: a,b
Detailed Solution: When load decreases, VM management can be done by – a) Live migrating VMs to more utilized nodes b) Shutting down unused nodes

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QUESTION 8:

Correspondence between resources required by the users and resources available with the provider is known as a. Resource provisioning b. Resource adaptation c. Resource mapping d. None of these
Correct Answer: c
Detailed Solution: Correspondence between resources required by the users and resources available with the provider is known as resource mapping.

QUESTION 9:

Ability or capacity of that system to adjust the resources dynamically to fulfill the requirements of the user is known as

a. Resource provisioning

b. Resource adaptation

c. Resource mapping

d. None of these

Correct Answer: b

Detailed Solution: Ability or capacity of that system to adjust the resources dynamically to fulfill the requirements of the user is known as resource adaptation.

QUESTION 10:

Statement 1: Map operation consists of transforming one set of key-value pairs to another.

Statement 2: Each reducer groups the results of the map step using the same key.

a. Both statements are true

b. Both statements are false

c. Statement 1 is true and Statement 2 is false

d. Statement 1 is false and Statement 2 is true

Correct Answer: a

Detailed Solution: Map operation consists of transforming one set of key-value pairs to another. Each reducer groups the results of the map step using the same key.