



Cloud Computing

Assignment- Week 1

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which of the following is/are common characteristic(s) of Cloud Computing?

- a. Resilient Computing
- b. Small Scale
- c. Virtualization
- d. High Cost Software

Correct Answer: a, c

Detailed Solution:

The common characteristics of cloud computing are Massive Scale, Resilient Computing, Homogeneity, Geographic Distribution, Virtualization, Service Orientation, Low Cost Software, Advanced Security. So, the correct options are (a) and (c).

Refer slide number 50.

QUESTION 2:

Which of the followings is/are type(s) of Cluster?

- (a) Load Balancing Cluster
- (b) Cost Effective Cluster
- (c) Failover Cluster
- (d) Energy Efficient Cluster

Correct Answer: a, c

Detailed Solution:

There are three types of cluster: High Availability or Failover Clusters, Load Balancing Cluster, and Parallel/Distributed Processing Clusters. So, option (a) and (c) are correct.

Refer slide number 31.



QUESTION 3:

Identify the TRUE statement(s)

- a. Google spread sheet is an example of PaaS
- b. Amazon Web Services(AWS) is an example of IaaS
- c. Google Cloud Platform(GCP) is an example of public cloud
- d. Window Server 'Hyper-V' is an example of community cloud

Correct Answer: b, c

Detailed Solution:

Google spread sheet is an example of SaaS. Amazon Web Services(AWS) is an example of IaaS. Google Cloud Platform(GCP) is an example of public cloud. Window Server 'Hyper-V' is an example of private cloud. So, the correct options are (b) and (c).
Refer slide number 54.

QUESTION 4:

Statement 1: Unlimited storage capacity is one of the advantages of Cloud Computing
Statement 2: Requirement of a constant internet connection is one of the disadvantages of Cloud Computing

- a. Statement 1 is TRUE, Statement 2 is FALSE
- b. Statement 2 is TRUE, Statement 1 is FALSE
- c. Both statements are TRUE
- d. Both statements are FALSE

Correct Answer: c

Detailed Solution:

Both statements are TRUE. So, the correct option is (c).

Refer slide number 63 for statement 1, and slide number 66 for statement 2



**QUESTION 5:**

Advantage(s) of virtual machines is/are

- a. Migration of virtual machines is not easy
- b. Emulate more machines than are physically available
- c. Timeshare heavy loaded systems on one host
- d. Easier to create new machines, and backup machines

Correct Answer: b, d

Detailed Solution:

Advantages of virtual machines are easier to create new machines, backup machines, timeshare lightly loaded systems on one host, emulate more machines than are physically available, easy migration of virtual machines. So, the correct options are (b) and (d).

Refer slide number 57.

QUESTION 6:

In the context of "networking in cloud models", which of the following statement(s) is/are TRUE for IaaS model?

- a. Physical layer is accessed by service provider
- b. Data link layer is accessed by service consumer
- c. Network layer is accessed by service provider
- d. Application layer is accessed by service consumer

Correct Answer: a, d

Detailed Solution:

Physical and Data link layers are accessed by service provider. Network, Transport, Session, Presentation, and Application layers are accessed by service consumer in case of IaaS cloud model. So, correct options are (a) and (d).

Refer slide number 131

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**QUESTION 7:**

Which of the following is/are benefit(s) for user to use of public cloud?

- a. No separate hardware procurement
- b. No separate IT infrastructure maintenance required
- c. Low scalability
- d. Required separate power cost

Correct Answer: a, b

Detailed Solution:

Benefits for user to use public cloud are high scalability, no separate hardware procurement, no separate power cost, no separate IT infrastructure administration/maintenance required. So, option (a) and (b) are true.

Refer slide number 73

QUESTION 8:

Utility computing is a service provisioning model where -

- a. Computing resources not available to the customer when required
- b. Infrastructure management available to the customer when required
- c. Service provider charges customer with a flat rate
- d. Service provider charges customer with specific usage rate

Correct Answer: b, d

Detailed Solution:

Utility computing is a service provisioning model in which a service provider makes computing resources and infrastructure management available to the customer as needed, and charges them for specific usage rather than a flat rate. So, the correct options are (b) and (d).

Refer slide number 35.



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**QUESTION 9:**

The _____ cloud scales automatically to successfully handle increased requests to the web application.

- a. SaaS
- b. PaaS
- c. IaaS
- d. DaaS

Correct Answer: b**Detailed Solution:**

The PaaS cloud scales automatically to successfully handle increased requests to the web application. So, the correct option is (b).

Refer slide number 77**QUESTION 10:**

Match the tables

Table - I	Table - II
1. Data Grid	i. Provides fault-tolerant and high performance communication services
2. Network Grid	ii. Provides secure access to huge pool of shared processing power
3. Computational Grid	iii. Provides an infrastructure to support data storage, data discovery, data handling, data publication

- a. 1.->(ii), 2.->(i), 3.->(iii)
- b. 1.-> (iii), 2.->(ii), 3.->(i)
- c. 1.->(ii), 2.->(iii), 3.->(i)
- d. 1.->(iii), 2.->(i), 3.->(ii)

Correct Answer: d**Detailed Solution:**

Data Grid provides an infrastructure to support data storage, data discovery, data handling, data publication. Network Grid provides fault-tolerant and high performance communication services. Computational Grid provides secure access to huge pool of shared processing power. So, the correct option is (d).

Refer slide no. 25-26

*****END*****

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Cloud Computing
Assignment- Week 4
TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

The configuration of a1.large instance in Amazon Web Service(AWS) is

- (a) 1 vCPU and 2048 MB RAM
- (b) 2 vCPUs and 4096 MB RAM
- (c) 4 vCPUs and 8192 MB RAM
- (d) 8 vCPUs and 16382 MB RAM

Correct Answer: b

Detailed Solution:

The combination of vCPUs and RAM in a1.large instance of AWS is 2 vCPUs and 4096 MB (or 4 GB). So, correct option is (b).

QUESTION 2:

Statement 1: Google App Engine is an Infrastructure as a Service (IaaS) product of GCP

Statement 2: Google Compute Engine is a Platform as a Service (PaaS) component of GCP

- (a) Statement 1 is True and Statement 2 is False
- (b) Statement 1 is False and Statement 2 is True
- (c) Both statements are True
- (d) Both statements are False

Correct Answer: d

Detailed Solution:

Google App Engine is Platform as a Service (PaaS) product. Google Compute Engine is an Infrastructure as a Service (IaaS) product. So, both statements are False. Correct option is (d).



QUESTION 3:

Statement 1: Fixed IP address of OpenStack VM is used for communication between instances
Statement 2: Floating IP address of OpenStack VM is used for communication with networks outside the cloud, including the Internet.

- (a) Statement 1 is True and Statement 2 is False
- (b) Statement 1 is False and Statement 2 is True
- (c) Both statements are True
- (d) Both statements are False

Correct Answer: c

Detailed Solution:

Fixed IP address of OpenStack VM is used for communication between instances and Floating IP address of OpenStack VM is used for communication with networks outside the cloud, including the Internet. So, both statements are true. Correct option is (c).

QUESTION 4:

Identify the correct statement(s) about Google Cloud Platform(GCP) storage

- (a) Cloud SQL is Google's fully managed, petabyte scale, low cost analytics data warehouse to find meaningful insights
- (b) BigQuery maintains, manages, and administers relational databases on Google Cloud Platform
- (c) MySQL or NoSQL databases present in Google DataStore
- (d) Cloud Storage provides flexible object storage with global edge caching

Correct Answer: c, d

Detailed Solution:

Cloud SQL maintains, manages, and administers relational databases on Google Cloud Platform. BigQuery is Google's fully managed, petabyte scale, low cost analytics data warehouse to find meaningful insights. You get MySQL or NoSQL databases in Google DataStore. Cloud Storage provides flexible object storage with global edge caching. So, the correct options are (c), and (d).



QUESTION 5:

A user deploys his/her app remotely in Azure. At the time of deployment, system asks for password. Which password S/he will enter?



QUESTION 5:

A user deploys his/her app remotely in Azure. At the time of deployment, system asks for password. Which password S/he will enter?

- (a) S/he enters the login password of Azure account while it asks for password
- (b) S/he enters the deployment user password of Azure account while it asks for password
- (c) S/he enters the Gmail password while it asks for password
- (d) S/he enters the online banking password while it asks for password

Correct Answer: b

Detailed Solution:

Push to the Azure remote to deploy your app. You are prompted for the password you created earlier when you created the deployment user. Make sure that you enter the password you created in Configure a deployment user, not the password you use to log in to the Azure portal. So, the correct option is (b).

QUESTION 6:

Azure App Service supports to deploy content to a web app through FTP, local Git, GitHub, Visual Studio Team Services, and Bitbucket.

- (a) TRUE
- (b) FALSE

Correct Answer: a

Detailed Solution:

App Service supports several ways to deploy content to a web app, such as FTP, local Git, GitHub, Visual Studio Team Services, and Bitbucket. So, the question statement is TRUE. Correct option is (a).



QUESTION 5:

A user deploys his/her app remotely in Azure. At the time of deployment, system asks for password. Which password S/he will enter?

- (a) S/he enters the login password of Azure account while it asks for password
- (b) S/he enters the deployment user password of Azure account while it asks for password
- (c) S/he enters the Gmail password while it asks for password
- (d) S/he enters the online banking password while it asks for password

Correct Answer: b

Detailed Solution:

Push to the Azure remote to deploy your app. You are prompted for the password you created earlier when you created the deployment user. Make sure that you enter the password you created in Configure a deployment user, not the password you use to log in to the Azure portal.
So, the correct option is (b).

QUESTION 6:

Azure App Service supports to deploy content to a web app through FTP, local Git, GitHub, Visual Studio Team Services, and Bitbucket.

- (a) TRUE
- (b) FALSE

Correct Answer: a

Detailed Solution:

App Service supports several ways to deploy content to a web app, such as FTP, local Git, GitHub, Visual Studio Team Services, and Bitbucket. So, the question statement is TRUE. Correct option is (a).



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QUESTION 7:

- Microsoft Azure App service plan includes
- (a) Scale Count
 - (b) Region
 - (c) Instance Size
 - (d) Stock Keeping Unit (SKU)

Correct Answer: a, b, c, d

Detailed Solution:

App Service plans define: Region (for example: North Europe, East US, or Southeast Asia), Instance size (small, medium, or large), Scale count (1 to 20 instances), SKU (Free, Shared, Basic, Standard, or Premium). So, all options are correct.

QUESTION 8:

What core function(s) do(es) Keystone perform?

- (a) Networking
- (b) Compute
- (c) Storage
- (d) Authentication and Identity service

Correct Answer: d

Detailed Solution:

Keystone is an OpenStack service that provides API client authentication, service discovery, and distributed multi-tenant authorization by implementing OpenStack's Identity API. So, the correct option is (d).



QUESTION 9:

Which of the following statements are TRUE about Resource Group in Microsoft Azure?

- (a) It manages Azure resources
- (b) It is a physical container
- (c) It deploys web apps, databases, and storage accounts
- (d) None of the above

Correct Answer: a, c

Detailed Solution:

A resource group is a logical container into which Azure resources like web apps, databases, and storage accounts are deployed and managed. Correct options are (a), and (c).

QUESTION 10:

Match the following columns:

Column 1	Column 2
A. GoogleAppEngine	1. Helps end users' application scalability
B. GoogleCloudEndpoint	2. Integrates Google's services into end users' application
C. GoogleAPI	3. Considers to migrate your web application to Google Cloud Platform

- (a) A-1, B-2, C-3
- (b) A-2, B-3, C-1
- (c) A-3, B-1, C-2
- (d) A-2, B-1, C-3

Correct Answer: c

Detailed Solution:

GoogleAppEngine considers to migrate your web application to Google Cloud Platform. GoogleCloudEndpoints help end users' application scalability. GoogleAPIs integrate Google's services into end users' application. So, correct option is (c).

*****END*****

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**Cloud Computing****Assignment- Week 4****TYPE OF QUESTION: MSQ****Number of questions: 10****Total mark: 10 X 1 = 10****QUESTION 1:**

Which of the following is/are the component(s) of Azure?

- a) Compute
- b) Storage
- c) Fabric
- d) None of these

Correct Answer: a, b, c

Detailed Solution: Azure provides compute, and storage services for cloud applications. Fabric is primarily binding these with the bare metal and also manages underlying resources.

QUESTION 2:

Identify the correct option

- a) Microsoft Azure is a PaaS vendor
- b) Microsoft Azure is a IaaS vendor
- c) Microsoft Azure is a SaaS vendor
- d) None of these

Correct Answer: a

Detailed Solution: Microsoft Azure is a PaaS vendor based on .NET and Microsoft supported development tools.

QUESTION 3:

Google cloud platform can automatically scale up to handle the most demanding workload but can't scale down when traffic subsides.

- a) True
- b) False

Correct Answer: b

Detailed Solution: Google cloud platform can automatically scale up to handle the most demanding workload and scales down when traffic subsides. So, scale up and scale down, both are possible.

QUESTION 4:

Which of the following is not an App service provided by Google Cloud Platform Services?

- a) BigQuery
- b) Cloud Endpoints
- c) Caching
- d) Cloud SQL

Correct Answer: d

Detailed Solution: There are several app services like big query, cloud endpoints, catching and queues with Google APIs whereas Cloud SQL is a storage service.

QUESTION 5:

Statement 1: Google Cloud Platform is a set of services that enables developers to build, test and deploy applications in Google's reliable infrastructure.

Statement 2: Google Cloud Platform is a set of modular cloud-based services.

- a) Only statement 1 is true
- b) Only statement 2 is true
- c) Both the statements are true
- d) None of the statements are true

Correct Answer: c

Detailed Solution: Google cloud platform is a set of modular cloud base services that allow users to create anything from simple websites to complex applications. It provides a set of services that enables developers to build, test, deploy applications on Google's reliable infrastructure.

QUESTION 6:

Which of the following is not a computation role provided by Windows Azure?

- a) Web Role
- b) Server Role
- c) Worker Role
- d) None of these

Correct Answer: b

Detailed Solution: Azure provides 2 types of computational roles; one is the web role, a running environment that users can access through the internet. And the second is the worker role which has the ability to handle distributed or complicated tasks.

**QUESTION 7:**

Google Compute Engine is a Platform as a Service (PaaS) component of GCP.

- a) True
- b) False

the ability to handle distributed or complicated tasks.



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QUESTION 7:

Google Compute Engine is a Platform as a Service (PaaS) component of GCP.

- a) True
- b) False

Correct Answer: b

Detailed Solution: Google Compute Engine is an Infrastructure as a Service (IaaS) product. So, the statement is False.

QUESTION 8:

Which of the following statement(s) is/are TRUE about Resource Groups in Microsoft Azure?

- a) It manages Azure resources
- b) It deploys web apps, databases, and storage accounts
- c) None of these

Correct Answer: a, b

Detailed Solution: A resource group is a logical container into which Azure resources like web apps, databases, and storage accounts are deployed and managed.

QUESTION 9:

Match the columns

1. MS Azure	a. Provides cloud services for connecting application running in cloud or on premises
2. AppFabric	b. Provides a windows based environment for running application and storing data on servers

- a) 1-b, 2-a
- b) 1-a, 2-b

Correct Answer: a

Detailed Solution: Microsoft Azure, provides a windows based environment for running applications and storing data on servers in Microsoft data centers. AppFabric provides cloud services for connecting applications running in cloud or on premises whereas SQL Azure provides data services in the cloud based SQL server.

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**QUESTION 10:**

Pick the correct option

- a) GoogleCloudEndpoints considers migrating user's web applications to Google Cloud Platform.
- b) GoogleAppEngine helps end users' application scalability.
- c) GoogleAPIs integrate Google's services into the end user's application.
- d) None of these

Correct Answer: c

Detailed Solution: GoogleAppEngine considers migrating your web application to Google Cloud Platform. GoogleCloudEndpoints help end users' application scalability. GoogleAPIs integrate Google's services into end users' applications.

*****END*****



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QUESTION 3:

Which of the following is a computation role provided by Azure?

- a. Server Role
- b. Client Role
- c. Web Role
- d. All of the above

Correct Answer: c

Detailed Solution: Azure provides 2 types of computational roles; one is the web role, a running environment that users can access through the internet. And the second is the worker role which has the ability to handle distributed or complicated tasks.

QUESTION 4:

Which of the following is/are the services offered by Google Cloud Platform?

- a. App Engine
- b. Cloud SQL
- c. Search
- d. All of the above

Correct Answer: a, b

Detailed Solution: App Engine is a compute service whereas Cloud SQL is storage service.

QUESTION 5:

Google App Engine is an Infrastructure as a Service (IaaS) component of GCP.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Google App Engine is a Platform as a Service (PaaS) product. So, the statement is False.



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QUESTION 6:

Fill in the Blanks:

The Azure web app provides a _____ for your code and provides a _____ to view the deployed app.

- a. Hosting Space, URN
- b. Compiler, URL
- c. Hosting Space, URL
- d. Compiler, URN

Correct Answer: c

Detailed Solution: The Azure web app provides a hosting space for your code and provides a URL to view the deployed app.

QUESTION 7:

Pick the correct option:

- I. GoogleAppEngine helps end users' application scalability.
 - II. GoogleAPIs integrate Google's services into the end user's application.
-
- a. Only statement I is true
 - b. Only statement II is true
 - c. Both statements I and II are true
 - d. Neither statement I nor statement II are true

Correct Answer: b

Detailed Solution: GoogleAppEngine considers migrating your web application to Google Cloud Platform. GoogleAPIs integrate Google's services into end users' applications.

[!\[\]\(e2906a780c2bbcdc2a236d79598e58f1_img.jpg\) Download now](#)**QUESTION 8:****Pick the correct option:**

- I. Google Cloud Storage provides you with MySQL or NoSQL databases.
- II. GoogleCloudEndPoints helps migration of web applications to Google Cloud Platform.

- a. Only statement I is true
- b. Only statement II is true
- c. Both statements I and II are true
- d. Neither statement I nor statement II are true

Correct Answer: d**Detailed Solution:** Google Cloud Storage provides flexible object storage with global edge caching. GoogleCloudEndPoints helps end users' application scalability.**QUESTION 9:**

An Azure resource group is a logical container into which Azure resources like web apps, databases, and storage accounts are deployed and managed.

- a. True
- b. False

Correct Answer: a**Detailed Solution:** Above statement is true.**QUESTION 10:**

Which of the following is/are the component(s) of Azure?

- a. Compute
- b. Database
- c. Networking
- d. All of the above

Correct Answer: d**Detailed Solution:** Compute, database and networking are few of the key components of Azure.

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**Cloud Computing
Assignment- Week 1**
TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

What are the advantages of Cluster Computing?

- a. High Performance
- b. Hardware Fault tolerance
- c. Low cost
- d. Scalability

Correct Answer: a, b, d

Detailed Solution: Cluster computing incurs high cost.

QUESTION 2:

What of the following is/are the characteristics of Cloud Computing?

- a. Homogeneity
- b. Service Orientation
- c. Geographic Distribution
- d. None of the above

Correct Answer: a, b, c

Detailed Solution: All three are characteristics of cloud computing.



QUESTION 3:

What of the following is/are false about Virtualization?

- I. It is difficult to create backup machines.
- II. It emulates more machines than are physically available
- III. It allows easier timeshare lightly loaded systems on one host
 - a. II and III
 - b. I only
 - c. I and III
 - d. I, II, and III

Correct Answer: b

Detailed Solution: It is easier to create backup machines.

QUESTION 4:

What of the following is/are the characteristics of SaaS?

- a. Application is accessed over the internet.
- b. Resources are distributed as a service.
- c. Provides a platform to build applications and services.
- d. None of the above

Correct Answer: a

Detailed Solution: SaaS provides software/application to users over the internet.

QUESTION 5:

In Horizontal Scale Out

- a. Workload is split across multiple computation units.
- b. Database Partitioning is needed.
- c. More resources are added to a single computation unit.
- d. All of the Above

Correct Answer: a, b

Detailed Solution: In vertical scaling, more resources are added to a single computation unit.



QUESTION 6:

What of the following is/are the purpose of cloud computing?

- a. Analyzing customer or operations data.
- b. Running e-business web sites.

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Cloud Computing
Assignment- Week 1
TYPE OF QUESTION: MSQ

Number of questions: 10

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 - d. I, II, and III

Correct Answer: b

Detailed Solution: It is easier to create backup machines.

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Correct Answer: a, b

Detailed Solution: In vertical scaling, more resources are added to a single computation unit.



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**QUESTION 6:**

What of the following is/are the purpose of cloud computing?

- a. Analyzing customer or operations data.
- b. Running e-business web sites.
- c. Processing and storing applications or other forms.
- d. All of the above

Correct Answer: d

Detailed Solution: All of the above are the purpose of cloud computing.

QUESTION 7:

Why is Cloud Sourcing important?

- a. Easier control of data.

QUESTION 6:

What of the following is/are the purpose of cloud computing?

- a. Analyzing customer or operations data.
- b. Running e-business web sites.
- c. Processing and storing applications or other forms.
- d. All of the above

Correct Answer: d

Detailed Solution: All of the above are the purpose of cloud computing.

QUESTION 7:

Why is Cloud Sourcing important?

- a. Easier control of data.
- b. High performance and reliability.
- c. Easier remote access.
- d. Rapid Scalability.

Correct Answer: c, d

Detailed Solution: Cloud sourcing has performance and reliability issues and data control is difficult.

QUESTION 8:

What of the following is the best use case for IaaS?

- a. Building applications with ease.
- b. Disaster recovery.
- c. Business Intelligence and Analytics
- d. None of the above

Correct Answer: b

Detailed Solution: IaaS is well used for disaster recovery.



QUESTION 9:

What of the following is false?

- a. Private cloud is used solely by an organization.
- b. Hybrid cloud is shared by several organizations and supports a specific goal.
- c. In the public cloud, the cloud infrastructure is made available to the general public.
- d. None of the above

Correct Answer: b

Detailed Solution: In hybrid cloud, the cloud infrastructure is a composition of two or more clouds.

QUESTION 10:

What of the following is/are the advantages of cloud computing?

- a. Improved performance.
- b. Increased data reliability.
- c. Works well with low speed connections.
- d. It is always fast.

Correct Answer: a, b

Detailed Solution: Cloud computing may not work well with low speed connections and it can be sometimes slower than accessing a similar program locally.

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Cloud Computing
Assignment- Week 2
TYPE OF QUESTION: MCQ/MSQ



Number of questions: 10

Total mark: 10 X 1 = 10

MCQ/MSQ Question

QUESTION 1:

What of the following is not an example of Private Cloud?

- a. Eucalyptus
- b. Amazon EC2
- c. Ubuntu Enterprise Cloud
- d. Microsoft ECI data center

Correct Answer: b

Detailed Solution: Amazon EC2 is an example of Public Cloud

QUESTION 2:

A hybrid cloud is composed of two or more private, community, or public clouds.

- a. True
- b. False

Correct Answer: a

Detailed Solution: One of the characteristics of Hybrid Cloud



QUESTION 3:

Statement 1: In case of Public Cloud, the cloud infrastructure exists on the premises of the cloud provider.

Statement 2: Amazon VPC is an example of public cloud.

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: a

Detailed Solution: Amazon VPC is an example of private cloud therefore statement 2 is false.

QUESTION 4:

Google Apps for Government is an example of which kind of cloud deployment model?

- a. Public cloud
- b. Private cloud
- c. Community cloud
- d. Hybrid cloud

Correct Answer: c

Detailed Solution: Google Apps for Government is an example of community cloud.

QUESTION 5:

Statement 1: On-site Private cloud applies to private clouds where the server side is outsourced

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QUESTION 5:

Statement 1: On-site Private cloud applies to private clouds where the server side is outsourced to a hosting company.

Statement 2: Outsourced private cloud applies to private clouds implemented at a customer's premises.

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: d

Detailed Solution: Both the statements are false. The definitions are actually reversed stated.

QUESTION 6:

Goals for a virtual machine architecture are:

- a. Equivalence
- b. Resource control
- c. Efficiency
- d. None

Correct Answer: a, b, c

Detailed Solution: All of the above are the goals of VM architecture.

QUESTION 7:

To run a virtual machine with all three desired properties which of the following condition should be satisfied?

- a. Privileged instructions are a subset of sensitive instructions.
- b. Sensitive instructions are a subset of privileged instructions
- c. Both.
- d. None.

Correct Answer: b

Detailed Solution: Popek and Goldberg had shown that we can only run a virtual machine with all three desired properties if the sensitive instructions are a subset of the privileged instructions.



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QUESTION 8:

Statement 1: Two types of XML parsers are Validating parsers and Non-Validating parsers.

Statement 2: A Non-Validating parser must retrieve all entities and must process all DTD content.
Will stop processing and indicate a failure if it cannot

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: a

Detailed Solution: Validating parser must retrieve all entities and must process all DTD content.

Will stop processing and indicate a failure if it cannot. Therefore statement 2 is False.

QUESTION 9:

SAX (Simple API for XML) is an event-based interface.

- a. True.
- b. False.

Correct Answer: a

Detailed Solution: The given statement is True.

QUESTION 10:

Which of following is false about SOAP (Simple Object Access Protocol) ?

- a. XML based.
- b. Uses mainly HTTP as transport protocol.
- c. Stateless, one way.
- d. None.

Correct Answer: d

Detailed Solution: All a, b, c, are true for SOAP.

*****END*****



Cloud Computing

Assignment- Week3

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which of the following is false about SLA contents

- a) A complete, specific definition of each service
- b) An auditing mechanism to monitor the services
- c) The responsibilities of the service provider and consumer
- d) None of these

Correct Answer: d

Detailed Solution: All of these are part of SLA

QUESTION 2:

In cloud, computing resources are allocated

- a) Through a centralized service discovering agent
- b) By service level agreement
- c) Globally without any centralized agent
- d) All of them

Correct Answer: c

Detailed Solution: Cloud related resources are allocated and distributed globally without any central directory or agent

QUESTION 3:

Which of the following is correct about Availability?

- a) Availability = 1 - (UpTime / TotalTime)
- b) Availability = 1 + (DownTime / UpTime)
- c) Availability = 1 + (UpTime / DownTime)
- d) Availability = 1 - (DownTime / UpTime)

**Correct Answer: d****Detailed Solution:** Availability = $1 - (\text{DownTime} / \text{UpTime})$. Correct option is (d).**QUESTION 4:**

Statement 1: Coefficient of variance represents the ratio of standard deviation to mean.

Statement 2: Coefficient of variance is a useful statistic for comparing the degree of uniformity from one data series to another.

- a) Only statement 1 is true
- b) Only statement 2 is true
- c) Both the statements are true
- d) Both the statements are False

Correct Answer: a**Detailed Solution:** Coefficient of variance is a useful statistic for comparing the degree of variation from one data series to another. Hence, the correct option is (a).**QUESTION 5:**

Say a cloud service is well maintaining its 95% availability as mentioned in Service Level Agreement. However, still the services are not performing as expected when the load increases abruptly. The problem can be referred to as an issue of

- a) Load balancing
- b) Linearity
- c) Reliability
- d) Durability

Correct Answer: b**Detailed Solution:** Linearity ensures how system performs when load increases.**QUESTION 6:**

Which of the following is true about penalty, where $D(t)$ is instantaneous demand at time t and $R(t)$ is response at time t ?

- a) Penalty $\propto \int |R(t) * D(t)| dt$
- b) Penalty $\propto \int |D(t) + R(t)| dt$
- c) Penalty $\propto \int |D(t) - R(t)| dt$



- d) None of these

Correct Answer: c**Detailed Solution:** Penalty is proportional to $\int |D(t) - R(t)| dt$

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- d) None of these

Correct Answer: c**Detailed Solution:** Penalty is proportional to $\int |D(t) - R(t)| dt$ **QUESTION 7:**

It is absolutely beneficial to purchase a cloud service when

- a) Utility premium < the peak to average demand ratio
- b) Utility premium > the peak to average demand ratio
- c) Utility premium <= the peak to average demand ratio
- d) Utility premium >= the peak to average demand ratio

Correct Answer: a**Detailed Solution:** It is always better to purchase cloud service when the utility premium is less than the peak demand to average demand ratio. In case they are equal, we can go for either cloud or self-owned system.**QUESTION 8:**

If R_t is the ratio of execution time taken by a process in sequential and parallel architecture, and p is the number of parallel computing nodes available, then the parallel efficiency is

- a) R_t / p
- b) p / R_t
- c) None of the above
- d) $p \times R_t$

Correct answer: a**Detailed Solution:** Parallel efficiency is $(\text{time taken in for sequential execution}) / (\text{no of processor} \times \text{time taken in parallel execution})$ **QUESTION 9:**

Statement 1: Hadoop Distributed File System is an open source implementation of GFS architecture.

Statement 2: In Google File System, the master maintains regular communication with the chunk servers.

- a) Only statement 1 is true
- b) Only statement 2 is true
- c) Both the statements are true
- d) Both the statements are false

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Correct Answer: c

Detailed Solution: Hadoop Distributed File System is an open source implementation of GFS architecture. In the Google File System, the master maintains regular communication with the chunk server. This is better known as heartbeat messages. In case of a failure, chunk server metadata gets updated to reflect failure.

QUESTION 10:

Which of the following is true?

- a) IaaS can be built on PaaS
- b) PaaS can be built on SaaS
- c) IaaS can be built on SaaS
- d) None of the above

Correct Answer: d

Detailed Solution: PaaS can be built on IaaS, and SaaS can be built on PaaS.

*****END*****



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**Cloud Computing
Assignment- Week 4
TYPE OF QUESTION: MSQ**

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

What type of vendor is Microsoft Azure?

- a. IaaS
- b. PaaS
- c. SaaS
- d. None of these

Correct Answer: b

Detailed Solution: Microsoft Azure is a PaaS vendor based on .NET and Microsoft supported development tools.

QUESTION 2:

What does Azure App Service plans define?

- a. Region
- b. Scale count
- c. Instance size
- d. All of the above

Correct Answer: d

Detailed Solution: Azure App Service Plans define region, instance size, scale count and Stock-keeping Unit.



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QUESTION 3:

Which of the following is a computation role provided by Azure?

- a. Server Role
- b. Client Role
- c. Web Role
- d. All of the above

Correct Answer: c

Detailed Solution: Azure provides 2 types of computational roles; one is the web role, a running environment that users can access through the internet. And the second is the worker role which has the ability to handle distributed or complicated tasks.

QUESTION 4:

Which of the following is/are the services offered by Google Cloud Platform?

- a. App Engine
- b. Cloud SQL
- c. Search
- d. All of the above

Correct Answer: a, b

Detailed Solution: App Engine is a compute service whereas Cloud SQL is storage service.

QUESTION 5:

Google App Engine is an Infrastructure as a Service (IaaS) component of GCP.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Google App Engine is a Platform as a Service (PaaS) product. So, the statement is False.



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b. False

Correct Answer: b

Detailed Solution: Google App Engine is a Platform as a Service (PaaS) product. So, the statement is False.



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**QUESTION 6:****Fill in the Blanks:**

The Azure web app provides a _____ for your code and provides a _____ to view the deployed app.

- a. Hosting Space, URN
- b. Compiler, URL
- c. Hosting Space, URL
- d. Compiler, URN

Correct Answer: c

Detailed Solution: The Azure web app provides a hosting space for your code and provides a URL to view the deployed app.

QUESTION 7:**Pick the correct option:**

- I. GoogleAppEngine helps end users' application scalability.
 - II. GoogleAPIs integrate Google's services into the end user's application.
-
- a. Only statement I is true
 - b. Only statement II is true
 - c. Both statements I and II are true
 - d. Neither statement I nor statement II are true

Correct Answer: b

Detailed Solution: GoogleAppEngine considers migrating your web application to Google Cloud Platform. GoogleAPIs integrate Google's services into end users' applications.



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QUESTION 8:

Pick the correct option:

- I. Google Cloud Storage provides you with MySQL or NoSQL databases.
 - II. GoogleCloudEndPoints helps migration of web applications to Google Cloud Platform.
-
- a. Only statement I is true
 - b. Only statement II is true
 - c. Both statements I and II are true
 - d. Neither statement I nor statement II are true

Correct Answer: d

Detailed Solution: Google Cloud Storage provides flexible object storage with global edge caching. GoogleCloudEndPoints helps end users' application scalability.

QUESTION 9:

An Azure resource group is a logical container into which Azure resources like web apps, databases, and storage accounts are deployed and managed.

- a. True
- b. False

Correct Answer: a

Detailed Solution: Above statement is true.

QUESTION 10:

Which of the following is/are the component(s) of Azure?

- a. Compute
- b. Database
- c. Networking
- d. All of the above

Correct Answer: d

Detailed Solution: Compute, database and networking are few of the key components of Azure.

*****END*****

QUESTION 8:

Allocation of a service provider's resources to a customer is termed as ?

- a. Resource brokering
- b. Resource allocation
- c. Resource provisioning
- d. Resource adaptation

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Correct Answer: c

Detailed Solution: Under resource management Resource provisioning is defined as allocation of a service provider's resources to a customer.

QUESTION 9:

Which of the following is NOT a hardware challenge in resource management?

- a. Memory
- b. CPU
- c. Information security
- d. Workstations

Correct Answer: c

Detailed Solution: Information Security is a logical resources challenge in resource management not a hardware challenge.

QUESTION 10:

Which of the following are performance metrics for resource management?

- a. Reliability
- b. QoS
- c. Delay
- d. All of the above

Correct Answer: d

Detailed Solution: All the given metrics. are performance metrics for resource management.

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- a. Common Infrastructure
- b. Location Dependence
- c. Online connectivity
- d. Utility pricing

Correct Answer: b

Detailed Solution: Location Independence is a cloud property as per economic viewpoint as ubiquitous availability meeting performance requirements, with benefits deriving from latency reduction and user experience enhancement, however in options location dependence is given.

QUESTION 6:

$U < P/A$ where U is Utility premium, P is Peak demand, A is Average demand indicates that cloud cheaper than owning.

- a. True
- b. False

Correct Answer: a

Detailed Solution: When utility premium is less than ratio of peak demand to Average demand then cloud cheaper than owning.

QUESTION 7:

In a MapReduce framework consider the HDFS block size is 32 MB. We have a file of size 128KB. How many blocks will be created by Hadoop framework?

- a. 2
- b. 4
- c. 1
- d. None of the above

Correct Answer: c

Detailed Solution: 1 HDFS block size is 32MB > 128KB therefore only 1 block needs to be created.

QUESTION 8:

Allocation of a service provider's resources to a customer is termed as ?

- a. Resource brokering
- b. Resource allocation
- c. Resource provisioning
- d. Resource adaptation

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QUESTION 3:

In MapReduce model __ make remote procedure call requests to the ___ to fetch the files.

- a. Mappers, Reducers
- b. Reducers, Mappers
- c. Master, Reducers
- d. Master, Mappers

Correct Answer: b

Detailed Solution: In MapReduce model reducers make remote procedure call requests to the mappers to fetch the files.

QUESTION 4:

Suppose a cloud guarantees service availability for 97% of time. Let a third party application runs in the cloud for 10 hours/day. At the end of one month, it was found that total outage is 8 hrs.

- a. SLA has violated the initial availability guarantee.
- b. SLA has NOT violated the initial availability guarantee
- c. Cannot be determined

Correct Answer: b

Detailed Solution:

$$\text{Total time guaranteed} = 10 * 30 = 300 \text{ hrs}$$

$$\text{Outage time} = 8 \text{ hrs}$$

$$\text{Therefore, service duration} = 300 - 8 = 292$$

$$\% \text{ availability} = 1 - 8/292 = 97.26\%$$

Final service availability > Initial service guarantee, therefore option b is correct

QUESTION 5:

Which of the following is/are NOT among cloud properties as per economic viewpoint?



Cloud Computing

Assignment- Week6

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

In a cyber-attack, if one entity is pretending to be another one, then it is called.

- a) Denial of Service
- b) Replay
- c) Masquerade
- d) Modification

Correct Answer: c

Detailed Solution: Masquerade is “one entity pretends to be a different entity”.

QUESTION 2:

Security responsibilities of a IaaS cloud service provider is typically upto

- a) Guest OS
- b) Application
- c) Solution Stack
- d) Hypervisor

Correct Answer: d

Detailed Solution: Security responsibilities of a IaaS cloud Service provider is typically upto hypervisor.

QUESTION 3:

Which of the following security property ensures that subscriber can't deny the action done by him/her.

- a) Authorization
- b) Non-repudiation
- c) Confidentiality
- d) Integrity

Correct Answer: b

Detailed Solution: Non repudiation is able to trace what happened and prevent denial of action.



QUESTION 4:

What is honeypot?

- a) Manages network traffic filtering rule
- b) Scans suspected messages and send alerts
- c) Simulates a decoy with services
- d) All of the above

Correct Answer: c

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QUESTION 4:

What is honeypot?

- a) Manages network traffic filtering rule
- b) Scans suspected messages and send alerts
- c) Simulates a decoy with services
- d) All of the above

Correct Answer: c

Detailed Solution: Honeypot simulates a decoy of host or network with services to understand the security loophole

QUESTION 5:

Which of the following are the Gartner's seven cloud computing risks?

- a) Regulatory Compliance & Audit
- b) Data Location
- c) Data Segregation
- d) All of the above

Correct Answer: d

Detailed Solution: Refer slide no. 10 of Cloud-Security II.

QUESTION 6:

The _____ amount of data that will be lost due to an interruption or disaster is defined in Recovery Point Objective

- a) minimum
- b) maximum
- c) average
- d) None of these

Correct Answer: b

Detailed Solution: RTO defines the maximum amount of data that will be lost following an interruption or disaster.

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**QUESTION 7:**

Which open source tools can be used to probe http and https port?

- a) nmap
- b) hping
- c) wget
- d) All of the above

Correct Answer: b

Detailed Solution: nmap, hping, wget are used to prove port 80 (http) and 443 (https)

QUESTION 8:

Cloud-based collaboration can be

- a) Federated
- b) Loosely-coupled
- c) All of the above
- d) None of these

Correct Answer: c

Detailed Solution: Cloud-based collaboration can be tightly-coupled or federated as well as loosely-coupled.

QUESTION 9:

Which of the following is an attack on integrity of data?

- a) Interception
- b) Modification
- c) Interruption
- d) Both a and b

Correct Answer: b

Detailed Solution: Modification is an attack on integrity of data.

QUESTION 10:

Fabrication security attack is an attack on authenticity

- a) True
- b) False

Correct Answer: a

Detailed Solution: Fabrication security attack is an attack on authenticity.



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Cloud Computing
Assignment- Week 7
TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Fill in the blanks in the light of User Mobility:

The lack of effective handoff mechanisms in WiFi networks as users move rapidly causes an _____ in the number of packets _____.

- a. decrease, losses
- b. increase, losses
- c. increase, gains
- d. no variation, gains

Correct Answer: b

Detailed Solution: The lack of effective handoff mechanisms in WiFi networks as users move rapidly causes an increase in the number of packet losses.

QUESTION 2:

Choose the correct option.

How to evaluate Mobile Cloud Computing performance?

- (i) Energy Consumption
 - (ii) Security
 - (iii) Time to Completion
 - (iv) Monetary Cost
-
- a. only I and II
 - b. only II and IV
 - c. only I, II and IV
 - d. I, II, III, IV

Correct Answer: d

Detailed Solution: Mobile Cloud Computing performance is evaluated with energy consumption, security, time to completion and monetary cost.



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QUESTION 3:

What is/are the key component(s) of Mobile Cloud Computing?

- a. Profiler
- b. Solver
- c. Synchronizer
- d. All of the above

Correct Answer: d

Detailed Solution: The key components of Mobile cloud computing (MCC) are profiler, solver and synchronizer.

QUESTION 4:

Which of the following is/are advantage(s) of Mobile Cloud Computing?

- a. Extending battery lifetime
- b. Improving security
- c. Improving Reliability and Availability
- d. None of the above

Correct Answer: a, c

Detailed Solution: Extending battery lifetime, improving reliability and availability are the advantages of Mobile Cloud Computing.

QUESTION 5:

Offloading is beneficial when _____ amounts of computation are needed with relatively_____ amounts of communication.

- a. Large, small
- b. Small, large
- c. Small, does not depend
- d. Does not depends, small

Correct Answer: a

Detailed Solution: Offloading is beneficial when large amounts of computation C are needed with relatively small amounts of communication.



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QUESTION 6:

Which of the following is/are true?

- a. In cloud computing, the distance between the client and server is over multiple hops.
- b. In fog computing, the distance between the client and server is over multiple hops.
- c. In cloud computing, the distance between the client and server is over a single hop.
- d. In fog computing, the distance between the client and server is over a single hop.

Correct Answer: a, d

Detailed Solution: In cloud computing distance between the client and server is measured through multiple hops and in fog computing the distance between the client and server is measured through a single hop.

QUESTION 7:

Which of the following is/are fog devices?

- a. Cellular base stations
- b. Network routers
- c. WiFi Gateways
- d. None of these

Correct Answer: a, b, c

Detailed Solution: Cellular base stations, Network routers, WiFi Gateways are a few of the fog devices.

QUESTION 8:

What is/are true about cloudlets?

- a. Increases the latency in reaching the cloud servers
- b. Reduces the latency in reaching the cloud servers
- c. Resides far from the mobile devices
- d. Resides near to the mobile devices

Correct Answer: b, d

Detailed Solution: Cloudlet reduces the latency in reaching the cloud servers and it resides near to the mobile devices.



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**QUESTION 9:**

Match the following:

List – I	List – II
1. Data Level Interoperability	i. Ability to exchange / obtain the information to be consumed
2. Service Level Interoperability	ii. Ability to exchange information in a reliable and trustworthy fashion
3. Security Level Interoperability	iii. Ability to “consume” the information

- a. 1. (ii), 2. (iii), 3. (i)
- b. 1. (iii), 2. (i), 3. (ii)
- c. 1. (i), 2. (ii), 3. (iii)
- d. 1. (iii), 2. (ii), 3. (i)

Correct Answer: b

Detailed Solution: Data Level Interoperability is the ability to “consume” the information. Service Level Interoperability is the ability to exchange / obtain the information to be consumed. Security Level Interoperability is the ability to exchange information in a reliable and trustworthy fashion.

QUESTION 10:

Which of the following aspect(s) is/are present in context-aware dynamic parking service case study?

- a. Decision making of traffic authorities
- b. Reservation service process
- c. Context-aware optimization
- d. None of the above

Correct Answer: a, b, c

Detailed Solution: Context-aware dynamic parking service considers decision making of traffic authorities, reservation service process and context-aware optimization

*****END*****



Cloud Computing
Assignment- Week 8
TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10



Total mark: 10 X 1 = 10

MCQ/MSQ Question

QUESTION 1:

In the containers terminology

Statement 1: ps : List all containers (incl. stopped)

Statement 2: rm : Delete a container

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: b

Detailed Solution: In containers terminology ps : List all running containers (ps -a : List all containers (incl. stopped)) therefore statement 1 is false only statement 2 is true.

QUESTION 2:

Docker provides application level virtualization.

- a. True
- b. False

Correct Answer: a

Detailed Solution: One of the reasons why docker is needed for applications is that it provides application level virtualization.



**QUESTION 3:**

In the image terminologies rmi is used to?

- a. Delete a local image
- b. List all local images
- c. Delete a container
- d. Download image from repository

Correct Answer: a

Detailed Solution: In image terminology rmi is used to delete a local image.

QUESTION 4:

A container is a runtime instance of an image.

- a. True
- b. False

Correct Answer: a

Detailed Solution: The given statement is true.

QUESTION 5:

Statement 1: Sensor data can be easily shared by different groups of users.

Statement 2: Sensor nodes have substantial data acquisition and processing capability.

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: b

Detailed Solution: Sensor data cannot be easily shared by different groups of users therefore statement 1 is false.



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QUESTION 6:

___ is an Interface between sensor resources and the cloud fabric.

- a. Sensor network proxy
- b. Sensor-Cloud proxy
- c. None

Correct Answer: b

Detailed Solution: Sensor-Cloud proxy is an Interface between sensor resources and the cloud fabric.

QUESTION 7:

Sensor Network proxy provides the connection for sensor resources that do not have direct connection to the cloud.

- a. True
- b. False

Correct Answer: a

Detailed Solution: The given statement is true.

QUESTION 8:

Building blocks of IOT are

- a. Things
- b. Gateway
- c. Network and Cloud
- d. All above

Correct Answer: d

Detailed Solution: An IoT platform has basically three building blocks Things, Gateway, Network and Cloud.

QUESTION 9:

___ layer of an IOT cloud system represents typical IoT applications executed across IoT and Clouds.

- a. Top layer
- b. Middle layer
- c. Bottom layer
- d. None

Correct Answer: a

Detailed Solution: Top layer represents typical IoT applications executed across IoT and Clouds.

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- a. Top layer
- b. Middle layer
- c. Bottom layer
- d. None

Correct Answer: a

Detailed Solution: Top layer represents typical IoT applications executed across IoT and Clouds.

QUESTION 10:

The Virtual sensor configuration in which the geographical area is divided into regions and each region can have one or more physical sensors and sensor networks is?

- a. One to many configuration
- b. Many to one configuration
- c. Many to many configuration
- d. Derived configuration

Correct Answer: b

Detailed Solution: In many to one configuration the geographical area is divided into regions and each region can have one or more physical sensors and sensor networks.

*****END*****



Cloud Computing

Assignment – Week 9

Type of Question: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Statement: In the fog layer, latency is less but the probability of network congestion is high.

The above statement is:

- a) True
- b) False

Correct Answer: (b)

Detailed Solution: Both latency and network congestion is less in the fog layer

QUESTION 2:

The term "Fog Computing" was introduced by:

- a) IBM
- b) Huawei
- c) Cisco
- d) Amazon

Correct Answer: (c)

Detailed Solution: The term "Fog Computing" was introduced by the Cisco Systems as new model to ease wireless data transfer to distributed devices in the Internet of Things (IoT) network paradigm

QUESTION 3:

Smartwatch is an example of

- a) Cloud
- b) Fog node
- c) Edge device
- d) None of the above

Correct Answer: (c)

Detailed Solution: Refer to Cloud-Fog-Edge computing pyramid





QUESTION 4:

Involving only the cloud for directly processing the IoT applications may not be an efficient design.
Which of the following could be the reason:

- a) Processing time
- b) Network bandwidth
- c) A large amount of generated data
- d) All of the above

Correct Answer: (d)

Detailed Solution: Refer to slide 1 (Challenges in Cloud Only scenario) of the lecture

QUESTION 5:

A model that makes use of both edge resources and the cloud is referred to as:

- a) Cloud computing
- b) Edge computing
- c) Fog computing
- d) None of the above

Correct Answer: (c)

Detailed Solution: A model that makes use of both edge resources and the cloud is referred to as “fog computing”

QUESTION 6:

The _____ coordinates distributed compute nodes and performs deployment of VMs or containers to each fog/edge node

- a) hardware
- b) middleware
- c) system software
- d) none of these

Correct Answer: (b)

Detailed solution: Middleware runs on an operating system and provides complementary services that are not supported by the system software. The middleware coordinates distributed compute nodes and performs deployment of VMs or containers to each fog/edge node.

**QUESTION 7:**

Which of the following are not the characteristics of fog infrastructure?

- a) Scalability
- b) Mobility
- c) Data consolidation
- d) High latency

Correct Answer: (c) and (d)

Detailed solution: Fog infrastructure consists of IoT devices (End layer), Fog Nodes, and at least one Cloud Data Center (Cloud layer), with the following characteristics: location awareness and low latency, better bandwidth utilization, scalable, support for mobility

QUESTION 8:

Which of the following type of algorithm captures the performance of resources for deciding and maximizing the performance of deployments

- a) Discovery
- b) Benchmarking
- c) Load-balancing
- d) Placement

Correct Answer: (b)

Detailed solution: Benchmarking algorithm captures the performance of resources for decision-making to maximize the performance of deployments

QUESTION 9:

Which of the following are the benefit of cloud federation?

- a) Maximize resource utilization
- b) Minimize power consumption
- c) Centralized processing
- d) All of the above

Correct Answer: (a) and (b)

Detailed solution: Centralized processing is not aimed in the cloud federation. It is rather aimed at distributing the computation.

QUESTION 10:

Which of the following cloud architecture combines on-premise infrastructure with remote resources from one or more public clouds to provide extra capacity during peak demand?



- a) Broker architecture
- b) Aggregated architecture
- c) Bursting architecture



- a) Broker architecture
- b) Aggregated architecture
- c) Bursting architecture
- d) Multitier architecture

Correct Answer: (c)

Detailed solution: Bursting or hybrid cloud architecture combines on-premise infrastructure with remote resources from one or more public clouds to provide extra capacity during peak demand

*****END*****

**Cloud Computing****Assignment – Week 10****Type of Question: MSQ****Number of questions: 10****Total mark: 10 X 1 = 10****QUESTION 1:**

Program execution does not get affected by the cold VM migration process.

The above statement is:

- a) True
- b) False

Correct Answer: (b)

Detailed solution: In case of cold migration the VM executing on the source machine is turned off or suspended during the migration process.

QUESTION 2:

Which of the following could be the terminating criteria in pre-copy phase?

- a) The number of rounds exceeds a threshold
- b) The total memory transmitted exceeds a threshold
- c) The number of dirtied pages in the previous round drops below a threshold.
- d) All of the above

Correct Answer: (d)

Detailed solution: In live migration, the stopping criteria of Pre-Copy phase take one of the following thresholds into account: (i) The number of rounds exceeds a threshold. (ii) The total memory transmitted exceeds a threshold. (iii) The number of dirtied pages in the previous round drops below a threshold.

QUESTION 3:

Which of the following are requirements of virtual machine live migration?

- a. Load balancing
- b. System Maintenance
- c. Power Management
- d. All of the above

Correct Answer: (d)



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Detailed Solution: The requirements of VM live migration are load balancing, fault tolerance, power management, resource sharing, system maintenance.

QUESTION 4:

Statement 1: Pre-copy approach of live migration uses iterative push phase that is followed by stop-and-copy phase.

Statement 2: In the pre-copy approach, no memory page gets updated.

- a. Statement 1 is true



Detailed Solution: The requirements of VM live migration are load balancing, fault tolerance, power management, resource sharing, system maintenance.

QUESTION 4:

Statement 1: Pre-copy approach of live migration uses iterative push phase that is followed by stop-and-copy phase.

Statement 2: In the pre-copy approach, no memory page gets updated.

- a. Statement 1 is true
- b. Statement 2 is true
- c. Both the statements are true
- d. None of the statements are true.

Correct Answer: (a)

Detailed Solution: In the pre-copy approach, because of iterative procedure, some memory pages get updated.

QUESTION 5:

Statement: Kubernetes operates at the hardware level rather than at the container level.

- a. True
- b. False

Correct Answer: (b)

Detailed Solution: Kubernetes operates at the container level rather than at the hardware level.

QUESTION 6:

Which of the following are the components of Kubernetes?

- a. Nodes
- b. Pods
- c. Control Plane
- d. All of the above

Correct Answer: (d)

Detailed Solution: All of the above are components of Kubernetes.

**QUESTION 7:**

Statement 1: Docker image has effectively no dependencies.

Statement 2: Docker builds are less reproducible than traditional software building methods.

- a. Statement 1 is true
- b. Statement 2 is true
- c. Both the statements are true
- d. None of the statements are true

Correct Answer: (a)

Detailed Solution: Docker image has effectively no dependencies and docker builds are more reproducible than traditional software building methods.

QUESTION 8:

Which of the following is a command of docker?

- a. docker build
- b. docker begin
- c. All of the above
- d. None of the above

Correct Answer: (a)

Detailed Solution: "docker build" is a key command. "docker begin" is not a key command.

QUESTION 9:

Which of the following is not a feature of Docker container image?

- a. Lightweight
- b. Standalone
- c. All of the above
- d. None of the above

Correct Answer: (d)

Detailed Solution: Docker container image is lightweight, standalone executable package of software.

QUESTION 10:

What are the benefits of Containers?

- a. Separation of responsibility
- b. Workload Portability
- c. Application Isolation



- d. All of the above

Correct Answer: (d)

Detailed Solution: All of the given above are benefits of Containers.



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- d. All of the above

Correct Answer: (d)

Detailed Solution: All of the given above are benefits of Containers.

*****END*****



Cloud Computing

Assignment – Week 11

Type of Question: MSQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

Statement 1: DC relies on centralised computing devices.

Statement 2: DC relies on a permanent internet connection.

- a) Statement 1 is True
- b) Statement 2 is true
- c) Both Statement 1 and Statement 2 are True
- d) Both Statement 1 and Statement 2 are False

Correct Answer: (d)

Detailed Solution: DC does not rely on centralized computing devices nor a permanent Internet connection.

QUESTION 2:

Statement: To utilise all functionalities of cloud computing, the network users are heavily dependent on internet connectivity.

The above statement is

- a) True
- b) False

Correct Answer: (a)

Detailed Solution: To utilise all functionalities of cloud computing, network users are heavily dependent on Internet Connectivity all the time.

QUESTION 3:

What are the key features of dew computing?

- a) Independence
- b) Collaboration
- c) Both of the above
- d) None of the above



Correct Answer: (c)

Detailed Solution: Key features of dew computing are independence and collaboration.

QUESTION 4:

Statement 1: Remote authentication systems is an example of Backend-as-a-Service(BaaS).

Statement 2: Database management is an example of Functions-as-a-Service(FaaS).

- a) Statement 1 is True



Correct Answer: (c)

Detailed Solution: Key features of dew computing are independence and collaboration.

QUESTION 4:

Statement 1: Remote authentication systems is an example of Backend-as-a-Service(BaaS).

Statement 2: Database management is an example of Functions-as-a-Service(BaaS).

- a) Statement 1 is True
- b) Statement 2 is true
- c) Both Statement 1 and Statement 2 are True
- d) Both Statement 1 and Statement 2 are False

Correct Answer: (a)

Detailed Solution: Both remote authentication systems and database management are examples of Backend-as-a-Service(BaaS)

QUESTION 5:

Statement 1: AWS Lambda is an event-driven, serverless computing platform provided by Amazon as a part of Amazon Web Services.

Statement 2: Amazon Lambda cannot be used to execute background tasks.

- a) Statement 1 is True
- b) Statement 2 is true
- c) Both Statement 1 and Statement 2 are True
- d) Both Statement 1 and Statement 2 are False

Correct Answer: (a)

Detailed Solution: Amazon Lambda can only be used to execute background tasks, therefore

Statement 2 is False.

QUESTION 6:

Statement: Serverless applications are ones that need server provision and do not require managing servers.

- a) True
- b) False

Correct Answer: (b)

Detailed Solution: Serverless applications are ones that don't need any server provision and do not require managing servers.



QUESTION 7:

In sustainable cloud computing, three sub-components of cloud architecture are?

- a) Software as a Service
- b) Platform as a Service
- c) Infrastructure as a Service
- d) All of the above

Correct Answer: (d)

Detailed Solution: Conceptual model for sustainable cloud computing in the form of layered architecture in which Cloud Architecture is divided into three different sub-components Software as a Service, Platform as a Service and Infrastructure as a Service.

QUESTION 8:

In sustainable cloud computing, Application models can be?

- a) Data parallel
- b) Function parallel
- c) Message passing
- d) All of the above

Correct Answer: (d)

Detailed Solution: Application models can be data parallel, function parallel and message passing.

QUESTION 9:

Components of sustainable cloud computing are?

- a) Virtualization
- b) Capacity Planning
- c) Waste heat utilization
- d) All of the above

Correct Answer: (d)

Detailed Solution: The five components of sustainable cloud computing are Thermal-aware Scheduling, Virtualization, Capacity Planning, Renewable Energy and Waste Heat Utilization.



QUESTION 10:

Statement 1: Components of thermal-aware scheduling are architecture and scheduling mechanisms.

Statement 2: In thermal aware scheduling, architecture can be reactive or proactive while scheduling mechanisms can be single-core or multi-core.

- a) Statement 1 is True



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-
- b) Capacity Planning
 - c) Waste heat utilization
 - d) All of the above

Correct Answer: (d)

Detailed Solution: The five components of sustainable cloud computing are Thermal-aware Scheduling, Virtualization, Capacity Planning, Renewable Energy and Waste Heat Utilization.



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QUESTION 10:

Statement 1: Components of thermal-aware scheduling are architecture and scheduling mechanisms.

Statement 2: In thermal aware scheduling, architecture can be reactive or proactive while scheduling mechanisms can be single-core or multi-core.

- a) Statement 1 is True
- b) Statement 2 is true
- c) Both Statement 1 and Statement 2 are True
- d) Both Statement 1 and Statement 2 are False

Correct Answer: (a)

Detailed Solution: In thermal aware scheduling, architecture can be single-core or multi-core while scheduling mechanisms can be reactive or proactive.

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Cloud Computing

Assignment – Week 12

Type of Question: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which of the following is not meant to be delivered by the 5G technology?

- a) Higher multi-GPS peak data speed
- b) Massive network capacity
- c) Ultra high latency
- d) Increased availability

Correct Answer: (c)

Detailed Solution: 5G is meant to deliver Ultra low latency.

QUESTION 2:

Statement: 5G technology has denser connections than that of in 4G.

- a) True
- b) False

Correct Answer: (a)

Detailed Solution: In 5G, connection density is around 1M/sq. km. whereas it is around 100T/sq. km. in 4G.

QUESTION 3:

Cloud computing services provide a flexible _____ for realizing goals of cyber physical system (CPS).

- a) hardware
- b) software
- c) platform
- d) None of the above

Correct Answer: (c)

Detailed Solution: Cloud computing services provide a flexible platform for realizing goals of CPS.



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Cloud computing services provide a flexible _____ for realizing goals of cyber physical system (CPS).

- a) hardware
- b) software
- c) platform
- d) None of the above

Correct Answer: (c)

Detailed Solution: Cloud computing services provide a flexible platform for realizing goals of CPS.



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QUESTION 4:

A Cyber-Physical Cloud Computing (CPCC) architectural framework can be defined as "a system environment that can slowly build, modify and provision cyber-physical systems composed of a set of cloud computing based sensor, processing, control, and data services".

The above statement is

- a) Correct
- b) Wrong

Correct Answer: (b)

Detailed Solution: CPCC is a system environment that can **rapidly** build, modify and provision cyber-physical systems composed of a set of cloud computing based sensor, processing, control, and data services

QUESTION 5:

Statement 1: Cloud computing could be a potential solution for spatial analytics, visualization and decision support.

Statement 2: Cloud computing can help in searching geospatial data.

- a) Only statement 1 is true
- b) Only statement 2 is true
- c) Both Statement 1 and Statement 2 are false
- d) Both Statement 1 and Statement 2 are true

Correct Answer: (d)

Detailed Solution: Refer to the slide on (Spatial Analytics + Cloud Computing) in Lecture 58.

QUESTION 6:

Spatial cloud eases out the GIS decision making due to the following reasons:

- a) Integrate the latest databases
- b) Merge disparate systems
- c) Exchange information internally and externally
- d) None of the above

Correct Answer: (a), (b) and (c)

Detailed Solution: All of the first 3 factors are the reasons.

**QUESTION 7:**

Which of the following metrics can be used for evaluating the performance of cloud?

- a) Network usage
- b) Amount of storage space required
- c) Energy consumption
- d) Cost of execution

Correct Answer: a, c, and d

Detailed Solution: Amount of storage space required is not a metrics for evaluating cloud performance

QUESTION 8:

In Dew Computing, the on-premises computer provides functionality that is dependent of cloud services.

- a) True
- b) False

Correct Answer: (b)

Detailed Solution: In Dew Computing, the on-premises computer provides functionality that is independent of cloud services.

QUESTION 9:

In Dew Computing, the on-premises computer collaborates with the cloud services

- a) True
- b) False

Correct Answer: (a)

Detailed Solution: The on-premises computer is collaborative with cloud services

QUESTION 10:

On premise resource utilization is optimum in

- a) Cloud computing
- b) Cloud-Fog-Edge computing
- c) Dew computing
- d) None of the above

Correct Answer: (c)



Detailed Solution: On premise resource utilization is optimum in dew computing.



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Cloud Computing

Assignment- Week 7

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Fog Computing implements in

- a. Smart Grid
- b. Start Traffic Light
- c. Connected Vehicles
- d. None of the above

Correct Answer: a, b, c

Detailed Solution:

Fog computing implements in Smart Grid, Start Traffic light, Connected Vehicles. So, correct options are (a), (b), and (c).

QUESTION 2:

What is/are TRUE about Mobile Cloud Computing(MCC)?

- a. MCC should increase the mobile's battery lifetime by reducing power consumption
- b. MCC should optimize the cost of network usage and server usage
- c. MCC should take longer time to finish the application compared to local execution
- d. MCC should not bother about the security of data while offloading it to server

Correct Answer: a, b

Detailed Solution:

MCC must reduce energy usage and extend battery life. It should not take longer to finish the application compared to local execution. Cost of network usage and server usage must be optimized. As offloading transfers data to the servers, MCC ensure confidentiality and privacy of data, how to identify methods which process confidential data. So, the options (a) and (b) are true about MCC.



QUESTION 3:

Identify the correct statement(s) about Cloudlet?

- a. It increases latency by using multi-hop network
- b. It consumes low battery power
- c. It uses broadband wireless
- d. It uses short-range radio wireless

Correct Answer: b, d

Detailed Solution:

Cloudlet architecture decreases latency by using a single-hop network and potentially lowers battery consumption by using Wi-Fi or short-range radio instead of broadband wireless which typically consumes more energy. So, the correct options are (b) and (d).

QUESTION 4:

Which of the followings is/are feature(s) of Mobile Cloud Computing?

- a. Use less mobile device resources because applications are cloud-supported
- b. Reduce reliability with information backed up and stored in the cloud
- c. Mobile devices connect to services delivered through an API architecture
- d. Facilitates slower development, delivery and management of mobile apps

Correct Answer: a, c

Detailed Solution:

Mobile cloud computing features are: Facilitates the quick development, delivery and management of mobile apps. Uses fewer device resources because applications are cloud-supported. Mobile devices connect to services delivered through an API architecture. Improves reliability with information backed up and stored in the cloud. So, the correct options are (a) and (c).





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**QUESTION 5:**

Match the following tables related to MCC Key components:

Table – I	Table – II
1. Profiler	i. Collects results of split execution and combine, and make the execution details transparent to the user
2. Solver	ii. Monitors application execution to collect data about execution time, power consumption, network traffic
3. Synchronizer	iii. The task of selecting which parts of an app runs on mobile and cloud

- a. 1. -> (ii), 2. -> (iii), 3. -> (i)
- b. 1. -> (iii), 2. -> (i), 3. -> (ii)
- c. 1. -> (i), 2. -> (ii), 3. -> (iii)
- d. 1. -> (ii), 2. -> (i), 3. -> (iii)

Correct Answer: a**Detailed Solution:**

Profiler monitors application execution to collect data about the time to execute, power consumption, network traffic. **Solver** has the task of selecting which parts of an app runs on mobile and cloud. **Task of synchronizer modules** is to collect results of split execution and combine, and make the execution details transparent to the user. So, the correct option is (a).

QUESTION 6:

_____ ensures the ability to exchange / obtain the information to be “consumed”.

- a. Data Level Interoperability
- b. Security Level Interoperability
- c. Service Level Interoperability
- d. None of the above

Correct Answer: c**Detailed Solution:**

Service Level Interoperability ensures the ability to exchange / obtain the information to be “consumed”. So, the correct option is (c).



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**QUESTION 7:**

Which of the following statement(s) is/are FALSE about Fog Computing?

- a. Fog nodes present near to the end-user
- b. Fog computing use for real-time applications
- c. Fog nodes' response time is much higher than cloud server
- d. Network routers, WiFi Gateways will not be capable of running applications

Correct Answer: c, d

Detailed Solution:

Fog nodes present near to the end-user, Fog computing use for real-time applications, Fog nodes' response time is much lower than cloud server, network routers, WiFi Gateways will be capable of running applications. So, the correct options are (c), (d).

QUESTION 8:

State Migration happens when

- a. Migrate the partially processed persistent data to a new node due to availability of an executing node
- b. Migrate the partially processed persistent data to a new node due to unavailability of an executing node
- c. Migrate the fully processed persistent data to a new node due to unavailability of an executing node
- d. Migrate the fully processed persistent data to a new node due to availability of an executing node

Correct Answer: b

Detailed Solution:

State Migration happens due to unavailability of an executing node, there is a need to migrate the partially processed persistent data to a new node. So, the correct options are (b).



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**QUESTION 9:**

Geographical distribution of server nodes is _____ in Fog Computing and _____ in Cloud Computing.



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**QUESTION 9:**

Geographical distribution of server nodes is _____ in Fog Computing and _____ in Cloud Computing.

- a. Centralized, Distributed
- b. Centralized, Centralized
- c. Distributed, Centralized
- d. Distributed, Distributed

Correct Answer: c

Detailed Solution:

Geographical distribution of server nodes is Distributed in Fog Computing, and Centralized in Cloud Computing. So, the correct option is (c).

QUESTION 10:

Which of the following is/are the challenge(s) of Geospatial Cloud?

- a. Scaling of Spatial Databases
- b. Policy management among the tenants
- c. Implementation of Spatial Databases
- d. None of the above

Correct Answer: a, b, c

Detailed Solution:

Challenges of Geospatial Cloud are as follows-

1. Implementation of Spatial Databases
 2. Scaling of Spatial Databases
 3. Policy management among the tenants
- So, correct options are (a), (b), (c).**

*****END*****

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Cloud Computing

Assignment- Week 7

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Geographical distribution of server nodes is _____ in Fog Computing and _____ in Cloud Computing.

- a) Centralized, Distributed
- b) Centralized, Centralized
- c) Distributed, Centralized
- d) Distributed, Distributed

Correct Answer: c

Detailed Solution: Geographical distribution of server nodes is Distributed in Fog Computing, and Centralized in Cloud Computing. So, the correct option is (c).

QUESTION 2:

Which of the following is/are true about Geospatial Cloud Computing?

- (a) More GIS infrastructure and spatial web service expertise are required
- (b) Gets benefits by accessing others' geospatial services
- (c) It minimizes financial risk and increases efficiency
- (d) None of the above

Correct Answer: b, c

Detailed Solution: Geospatial Cloud Computing gets benefits by accessing others' geospatial services. Geospatial Cloud Computing minimizes financial risk and increases efficiency.

QUESTION 3:

Fog Computing is implemented in

- a) Smart Grid
- b) Smart Traffic Light
- c) Connected Vehicles
- d) None of the above

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**Correct Answer: a, b, c****Detailed Solution:** Fog computing is implemented in Smart Grid, Smart Traffic light, Connected Vehicles. So, correct options are (a), (b), and (c).**QUESTION 4:**

Which of the following is/are the challenge(s) of Geospatial Cloud?

- a) Scaling of Spatial Databases
- b) Policy management among the tenants
- c) Implementation of Spatial Databases
- d) None of the above

Correct Answer: a, b, c**Detailed Solution:** Challenges of Geospatial Cloud are as follows-

- 1. Implementation of Spatial Databases
- 2. Scaling of Spatial Databases
- 3. Policy management among the tenants

So, correct options are (a), (b), (c).

QUESTION 5:

Which of the following is/are TRUE for Mobile Cloud Computing?

- a) Facilitate quick development, delivery and management of mobile apps
- b) Users require large number of device resources
- c) Supports limited number of development approaches and devices
- d) Improves reliability with information backed up and stored in the cloud

Correct Answer: a, d**Detailed Solution:** Mobile Cloud Computing (MCC) facilitate quick development, delivery and management of mobile apps. MCC improves reliability with information backed up and stored in the cloud.**QUESTION 6:**

Fog Computing has _____ probability to attack on data enroute and required _____ number of server nodes than Cloud Computing.

- a) lower, less
- b) lower, large

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number of server nodes than Cloud Computing.

- a) lower , less
- b) lower, large



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- c) higher, less
- d) higher, large

Correct Answer: b

Detailed Solution: Fog Computing has lower probability to attack on data enroute and required large number of server nodes than Cloud Computing.

QUESTION 7:

What is/are TRUE about Mobile Cloud Computing(MCC)?

- a) MCC should increase the mobile's battery lifetime by reducing power consumption
- b) MCC should optimize the cost of network usage and server usage
- c) MCC should take longer time to finish the application compared to local execution
- d) MCC should not bother about the security of data while offloading it to server

Correct Answer: a, b

Detailed Solution: MCC must reduce energy usage and extend battery life. It should not take longer to finish the application compared to local execution. Cost of network usage and server usage must be optimized. As offloading transfers data to the servers, MCC ensure confidentiality and privacy of data, how to identify methods which process confidential data. So, the options (a) and (b) are true about MCC.

QUESTION 8:

_____ ensures the ability to exchange / obtain the information to be “consumed”.

- a) Data Level Interoperability
- b) Security Level Interoperability
- c) Service Level Interoperability
- d) None of the above

Correct Answer: c

Detailed Solution: Service Level Interoperability ensures the ability to exchange / obtain the information to be “consumed”. So, the correct option is (c).

QUESTION 9:

Which of the following statement(s) is/are FALSE about Fog Computing?

- a) Fog nodes present near to the end-user
- b) Fog computing use for real-time applications



- c) Fog nodes' response time is much higher than cloud server
- d) Network routers, WiFi Gateways will not be capable of running applications

Correct Answer: c, d

Detailed Solution: Fog nodes present near to the end-user, Fog computing use for real-time applications, Fog nodes' response time is much lower than cloud server, network routers, WiFi Gateways will be capable of running applications. So, the correct options are (c), (d).

QUESTION 10:

Which of the followings is/are feature(s) of Mobile Cloud Computing?

- a) Use less mobile device resources because applications are cloud-supported
- b) Reduce reliability with information backed up and stored in the cloud
- c) Mobile devices connect to services delivered through an API architecture
- d) Facilitates slower development, delivery and management of mobile apps

Correct Answer: a, c

Detailed Solution: Mobile cloud computing features are: Facilitates the quick development, delivery and management of mobile apps. Uses fewer device resources because applications are cloud-supported. Mobile devices connect to services delivered through an API architecture. Improves reliability with information backed up and stored in the cloud. So, the correct options are (a) and (c).

*****END*****

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**Save****Cloud Computing****Assignment-Week 2****TYPE OF QUESTION: MCQ/MSQ****Number of questions: 10****Total mark: 10 X 1 = 10****QUESTION 1:**

The public cloud has a risk of multi-tenancy.

- A. True
- B. False

Correct Option: A

Detailed Answer: There is a possibility that a subscriber's workload may be co-resident of the workloads of competitors. Hence, posing a reliability and security risk.

QUESTION 2:

Ubuntu Enterprise Cloud (UEC) is an example of

- A. Private cloud
- B. Public cloud
- C. Hybrid cloud
- D. Community Cloud

Correct Option: A

Detailed Answer: Ubuntu Enterprise Cloud (UEC) is an example of a private cloud.

QUESTION 3:

Organization should consider-(i) Network Dependency and (ii) Risks from multi-tenancy while thinking of deploying an outsourced private cloud.

- A. Only (i)
- B. Only (ii)
- C. Both (i) and (ii)
- D. None of (i) and (ii)

Correct Option: C

Detailed Answer: For outsourced private cloud, subscribers may have an option to provide a unique, protected, and reliable network. Additionally, there is always a risk of multi-tenancy.

**QUESTION 4:**

Which of the following is/are XML parser API(s)?

- A. XaaS (Anything as a Model)
- B. DOM (Document Object Model)
- C. CLI (Command Line Interface)
- D. SLA (Service Level Agreement)

Correct Option: B

Detailed Answer: DOM is one of the three generic parser APIs. It reads in XML data, checks for syntax, and makes data available to an application.

QUESTION 5:

What is/are the main difference(s) between virtualization and dual boot?

- A. No difference between dual boot and virtualization.
- B. In virtualization, operating systems are not isolated from each other, but not in dual boot.
- C. In a dual boot, both operating systems run simultaneously, but not in virtualization.
- D. In virtualization, both operating systems run simultaneously, but not in dual boot.

Correct Option: D

Detailed Answer: Virtualization is a method of running multiple operating systems and user applications on the same hardware. Both OSs run simultaneously and are completely isolated from each other.

QUESTION 6:

In virtualization, a virtual machine monitor is also called

- A. Hypervisor
- B. Short-term Scheduler
- C. Analyzer
- D. Parser

Correct Option: A

Detailed Answer: A virtual machine monitor is also called a hypervisor. It runs the guest OS directly on the CPU to enable virtualization.

**QUESTION 7:**

Speed and flexibility are the two disadvantages of hardware-assisted virtualization.

A. True



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QUESTION 7:

Speed and flexibility are the two disadvantages of hardware-assisted virtualization.

- A. True
- B. False

Correct Option: A

Detailed Answer: An unmodified OS cannot take advantage of any of the underlying features of virtualization. So, speed and flexibility become cons.

QUESTION 8:

The following problems are addressed through Web services:

- 1. Firewall
- 2. Interoperability
- 3. Complexity
- 4. Speed

Correct Option: A,B,C

Detailed Answer: Web services improve distributed interoperability by using open standards that can enable any two software components to communicate. It is also intended to take care of firewall issues.

QUESTION 9:

A web service can be discovered using

- A. SMS
- B. HTTP
- C. SMTP
- D. UDDI

Correct Option: D

Detailed Answer: Web service is an application component that can be discovered by UDDI (Universal Description, Discovery, and Integration).



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QUESTION 10:

Service-Oriented Architecture (SOA) consists of relationships between:

- A. Two entities (a service provider and a requestor)
- B. Two entities (a service provider and a broker)
- C. Three entities (a service provider, a service requestor, and a broker)
- D. Three entities (a service provider, a service requestor, and a hypervisor)

Correct Option: C

Detailed Answer: Service-Oriented Architecture (SOA) consists of relationships between three entities (a service provider, a service requestor, and a broker)

Cloud Computing**Assignment-Week 1****TYPE OF QUESTION: MCQ/MSQ****Number of questions: 10****Total mark: 10 X 1 = 10**

QUESTION 1:

Which of the following fall(s) under the “essential characteristics” of cloud computing?

- A. Resource Pooling
- B. Measured Service
- C. Rapid Elasticity
- D. Latency

Correct Answer: A,B,C

Detailed Solution: cloud computing is a model for on-demand network access to a shared pool of configurable computing resources that can provide rapid elasticity. It provides automatic control and optimizes resource use by leveraging a metering capability.

QUESTION 2:

“Google Slide” is an example of

- A. PaaS
- B. IaaS
- C. SaaS
- D. FaaS

Correct Answer: C

Detailed Solution: Google Slide is a provider's application that runs on Google Cloud. The application can be accessed from various client terminals through a client interface, say a web browser. So, It is a Software as a Service (SaaS) model.

QUESTION 3:

Which of the following is/are public cloud platform(s)?

- A. Windows Server Hyper-V
- B. Google Cloud Interconnect
- C. Amazon Virtual Private Cloud
- D. Microsoft Azure

**Correct Answer:** B,D**Detailed Solution:** Public cloud is made available to the general public. So, as Google cloud And Microsoft Azure.**QUESTION 4:**

VM technology allows multiple virtual machines to run on a single physical system.

- A. True
- B. False

Correct Answer: A**Detailed Solution:** Multiple virtual computers can run on a single physical system thanks to virtualization technologies.**QUESTION 5:**

Which one of the following is/are disadvantage(s) of cloud computing?

- A. Resource pooling
- B. It requires an always-on internet connection.
- C. Ubiquitous
- D. On-demand payment policy

Correct Answer: B**Detailed Solution:** Cloud computing is almost impossible with a feeble internet connection.**QUESTION 6:**

For less data-intensive applications, horizontal scale-out elasticity is the ideal solution.

- A. True
- B. False

Correct Answer: B**Detailed Solution:** Horizontal scale-out means adding additional computation units and having them act in concert. It is suitable for large scale-out scenarios.**QUESTION 7:**

The combination of Service-Oriented Infrastructure and Cloud Computing realizes to _____.



QUESTION 7:

The combination of Service-Oriented Infrastructure and Cloud Computing realizes to _____.

- A. FTP
- B. SNTP
- C. XaaS
- D. FaaS

Correct Answer: C

Detailed Solution: "Anything as a Service" is what XaaS stands for. It's a catch-all term for cloud-based services.

QUESTION 8:

What is/are the main requirement(s) of a Cloud Service Provider (CSP)?

- A. Increase agility
- B. Increase cost
- C. Increase productivity
- D. Decrease cost

Correct Answer: A,C

Detailed Solution: CSP looks forward to enhancing productivity and agility.

QUESTION 9:

PaaS (Platform as a Service) brings the benefits: (i) Creation of software (ii) Integration of web services and databases

- A. Only (i)
- B. Only (ii)
- C. Both (i) and (ii)
- D. Neither (i) nor (ii)

Correct Answer: C

Detailed Solution: PaaS is a computing platform that allows developers to quickly create software or online applications by connecting web services and databases.



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QUESTION 10:

A _____ is a distributed computer system that consists of a collection of interconnected stand-alone computers working together as an integrated computing resource.

- A. Grid
- B. Cluster
- C. Cloud
- D. Node

Correct Answer: B

Detailed Solution: Key components of a cluster include multiple stand-alone computers working together.

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Cloud Computing

Assignment- Week 1

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: $10 \times 1 = 10$

QUESTION 1:

What are the advantages of Cluster Computing?

- a. High Performance
- b. Hardware Fault tolerance
- c. Low cost
- d. Scalability

Correct Answer: a, b, d

Detailed Solution: Cluster computing incurs high cost.

QUESTION 2:

What of the following is/are the characteristics of Cloud Computing?

- a. Homogeneity
- b. Service Orientation
- c. Geographic Distribution
- d. None of the above

Correct Answer: a, b, c

Detailed Solution: All three are characteristics of cloud computing.

[!\[\]\(9e9ae22e7d0a57826d353c2bd0c4711d_img.jpg\) Download now](#)**QUESTION 3:**

What of the following is/are false about Virtualization?

- I. It is difficult to create backup machines.
- II. It emulates more machines than are physically available
- III. It allows easier timeshare lightly loaded systems on one host
 - a. II and III
 - b. I only
 - c. I and III
 - d. I, II, and III

Correct Answer: b

Detailed Solution: It is easier to create backup machines.

QUESTION 4:

What of the following is/are the characteristics of SaaS?

- a. Application is accessed over the internet.
- b. Resources are distributed as a service.
- c. Provides a platform to build applications and services.
- d. None of the above

Correct Answer: a

Detailed Solution: SaaS provides software/application to users over the internet.

QUESTION 5:

In Horizontal Scale Out

- a. Workload is split across multiple computation units.
- b. Database Partitioning is needed.
- c. More resources are added to a single computation unit.
- d. All of the Above

Correct Answer: a, b

Detailed Solution: In vertical scaling, more resources are added to a single computation unit.



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**QUESTION 6:**

What of the following is/are the purpose of cloud computing?



QUESTION 6:

What of the following is/are the purpose of cloud computing?

- a. Analyzing customer or operations data.
- b. Running e-business web sites.
- c. Processing and storing applications or other forms.
- d. All of the above

Correct Answer: d

Detailed Solution: All of the above are the purpose of cloud computing.

QUESTION 7:

Why is Cloud Sourcing important?

- a. Easier control of data.
- b. High performance and reliability.
- c. Easier remote access.
- d. Rapid Scalability.

Correct Answer: c, d

Detailed Solution: Cloud sourcing has performance and reliability issues and data control is difficult.

QUESTION 8:

What of the following is the best use case for IaaS?

- a. Building applications with ease.
- b. Disaster recovery.
- c. Business Intelligence and Analytics
- d. None of the above

Correct Answer: b

Detailed Solution: IaaS is well used for disaster recovery.



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QUESTION 9:

What of the following is false?

- a. Private cloud is used solely by an organization.
- b. Hybrid cloud is shared by several organizations and supports a specific goal.
- c. In the public cloud, the cloud infrastructure is made available to the general public.
- d. None of the above

Correct Answer: b

Detailed Solution: In hybrid cloud, the cloud infrastructure is a composition of two or more clouds.

QUESTION 10:

What of the following is/are the advantages of cloud computing?

- a. Improved performance.
- b. Increased data reliability.
- c. Works well with low speed connections.
- d. It is always fast.

Correct Answer: a, b

Detailed Solution: Cloud computing may not work well with low speed connections and it can be sometimes slower than accessing a similar program locally.

*****END*****

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Cloud Computing

Assignment- Week 0

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which software is usually used for network access control in an organizational network?

- a) Firewall
- b) Gateway
- c) Router
- d) Virus checker

Correct Answer: (a)

Detailed Solution: A firewall is a network securing software that prevents unauthorized users and dangerous elements from accessing the network. Software firewall acts as a filter for our network which prevents harmful information.

QUESTION 2:

Which of the following is/are used for connectionless sockets?

- a) Datagram Socket only
- b) Datagram Packet only
- c) Both (i) and (ii)
- d) None of these

Correct Answer: (c)

Detailed Solution: Datagram is basically some information traveling between the sender and the receiver, but there is no guarantee of its content, arrival or arrival time. Datagram Socket, Datagram Packet are used for connection-less socket programming, while Server Socket is used for connection-oriented socket programming.

QUESTION 3:

Which of the following is most appropriate about Threads?

Threads of a process share

- a) only global variables.
- b) only heap.
- c) neither global variables nor heap.
- d) both heap and global variables.

Correct Answer: (d)

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Detailed Solution: A thread shares all other resources of the process except local data like registers and stacks.

QUESTION 4:

What is the maximum number of hosts under class B addresses?

- a) 65536
- b) 65534
- c) 65535
- d) 254

Correct Answer: (b)

Detailed Solution: In Class B, IP address first two octets are used to represent the network number, which leaves two octets or 16 bits to represent the host portion of the address. With 16 bits total, 2^{16} combinations are possible, yielding 65,536 Class B addresses. Although two of those numbers, the lowest and highest values, are reserved for special purposes. Therefore, each Class B address can support up to 65,534 ($2^{16}-2$) hosts.

QUESTION 5:

Consider a system with 2 level caches. The access times of Level 1 cache, Level 2 cache, and main memory are 1 ns, 10ns, and 400 ns, respectively. The hit rates of Level 1 and Level 2 caches are 0.8 and 0.9, respectively. What is the average access time of the system, ignoring the search time within the cache?

- a) 12.6 ns
- b) 11.2 ns
- c) 10.6 ns
- d) 12.4 ns

Correct Answer: (c)

Detailed Solution: Average access time = $[H1*T1]+[(1-H1)*H2*T2]+[(1-H1)(1-H2)*Hm*Tm]$

H1 = Hit rate of level 1 cache = 0.8

T1 = Access time for level 1 cache = 1 ns

H2 = Hit rate of level 2 cache = 0.9

T2 = Access time for level 2 cache = 10 ns

Hm = Hit rate of Main Memory = 1

Tm = Access time for Main Memory = 400 ns



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**QUESTION 6:**

Using a larger block size in a fixed block size file system leads to

- a) better disk throughput but poorer disk space utilization
- b) better disk throughput and better disk space utilization
- c) poorer disk throughput but better disk space utilization
- d) poorer disk throughput and poorer disk space utilization

Correct Answer: (a)

Detailed Solution: Using larger block size in a fixed block size system leads to poor disk space utilization due to data items that are very small comparable to block size cause fragmentation. But it leads to better disk throughput since no. of blocks needs to fetch & replace become less.

QUESTION 7:

Transport layer is implemented in the NIC of a typical computer system.

- a) True
- b) False

Correct Answer: (b)

Detailed Solution: Transport layer is implemented in the kernel.

QUESTION 8:

A computer's processor sends 32 bit addresses to the cache controller. It has a 512 KByte, 8-way set associative, write back data cache with block size of 32 Bytes. In addition to the address tag, each cache tag directory entry contains 3 valid bits and 1 modified bit. Find the size of the cache tag directory.

- a) 212 Kbits
- b) 320 Kbits
- c) 160 Kbits
- d) 120 Kbits

Correct Answer: (b)

Detailed Solution: Number of blocks = Cache_Size/Block_Size = 512 KB / 32 Bytes = 2^{14}
Number of Sets = $2^{14} / 8 = 2^{11}$

$$\text{Tag} + \text{Set offset} + \text{Byte offset} = 32$$

$$\text{Tag} + 11 + 5 = 32$$

$$\text{Tag} = 16$$

16 bit address

3 bit valid



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1 modified
Total bits = 20
 $20 \times$ no. of blocks
= 320 K bits.

QUESTION 9:

Flow control is mainly implemented in

- a) Physical Layer
- b) Application Layer
- c) Transport Layer
- d) Session Layer

Correct Answer: (c)

Detailed Solution: Flow control is mainly a function of the Transport Layer.

QUESTION 10:

Where does the swap space reside?

- a) RAM
- b) Disk
- c) ROM
- d) On-chip cache

Correct Answer: (b)

Detailed Solution: Swap space is an area on disk that temporarily holds a process memory image.

**Cloud Computing****Assignment-Week 1****TYPE OF QUESTION: MCQ/MSQ****Number of questions: 10****Total mark: 10 X 1 = 10**

QUESTION 1:

Which of the following fall(s) under the “essential characteristics” of cloud computing?

- A. Resource Pooling
- B. Measured Service
- C. Rapid Elasticity
- D. Latency

Correct Answer: A,B,C

Detailed Solution: cloud computing is a model for on-demand network access to a shared pool of configurable computing resources that can provide rapid elasticity. It provides automatic control and optimizes resource use by leveraging a metering capability.

QUESTION 2:

“Google Slide” is an example of

- A. PaaS
- B. IaaS
- C. SaaS
- D. FaaS

Correct Answer: C

Detailed Solution: Google Slide is a provider’s application that runs on Google Cloud. The application can be accessed from various client terminals through a client interface, say a web browser. So, It is a Software as a Service (SaaS) model.

QUESTION 3:

Which of the following is/are public cloud platform(s)?

- A. Windows Server Hyper-V
- B. Google Cloud Interconnect
- C. Amazon Virtual Private Cloud
- D. Microsoft Azure



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Correct Answer: B,D

Detailed Solution: Public cloud is made available to the general public. So, as Google cloud And Microsoft Azure.

QUESTION 4:

VM technology allows multiple virtual machines to run on a single physical system.

- A. True
- B. False

Correct Answer: A

Detailed Solution: Multiple virtual computers can run on a single physical system thanks to virtualization technologies.

QUESTION 5:

Which one of the following is/are disadvantage(s) of cloud computing?

- A. Resource pooling
- B. It requires an always-on internet connection.
- C. Ubiquitous
- D. On-demand payment policy

Correct Answer: B

Detailed Solution: Cloud computing is almost impossible with a feeble internet connection.

QUESTION 6:

For less data-intensive applications, horizontal scale-out elasticity is the ideal solution.

- A. True
- B. False

Correct Answer: B

Detailed Solution: Horizontal scale-out means adding additional computation units and having them act in concert. It is suitable for large scale-out scenarios.



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QUESTION 7:

The combination of Service-Oriented Infrastructure and Cloud Computing realizes to _____.

- A. FTP
- B. SNTP



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QUESTION 7:

The combination of Service-Oriented Infrastructure and Cloud Computing realizes to _____.

- A. FTP
- B. SNTP
- C. XaaS
- D. FaaS

Correct Answer: C

Detailed Solution: "Anything as a Service" is what XaaS stands for. It's a catch-all term for cloud-based services.

QUESTION 8:

What is/are the main requirement(s) of a Cloud Service Provider (CSP)?

- A. Increase agility
- B. Increase cost
- C. Increase productivity
- D. Decrease cost

Correct Answer: A,C

Detailed Solution: CSP looks forward to enhancing productivity and agility.

QUESTION 9:

PaaS (Platform as a Service) brings the benefits: (i) Creation of software (ii) Integration of web services and databases

- A. Only (i)
- B. Only (ii)
- C. Both (i) and (ii)
- D. Neither (i) nor (ii)

Correct Answer: C

Detailed Solution: PaaS is a computing platform that allows developers to quickly create software or online applications by connecting web services and databases.



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QUESTION 10:

A _____ is a distributed computer system that consists of a collection of interconnected stand-alone computers working together as an integrated computing resource.

- A. Grid
- B. Cluster
- C. Cloud
- D. Node

Correct Answer: B

Detailed Solution: Key components of a cluster include multiple stand-alone computers working together.



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Cloud Computing

Assignment-Week 2

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

The public cloud has a risk of multi-tenancy.

- A. True
- B. False

Correct Option: A

Detailed Answer: There is a possibility that a subscriber's workload may be co-resident of the workloads of competitors. Hence, posing a reliability and security risk.

QUESTION 2:

Ubuntu Enterprise Cloud (UEC) is an example of

- A. Private cloud
- B. Public cloud
- C. Hybrid cloud
- D. Community Cloud

Correct Option: A

Detailed Answer: Ubuntu Enterprise Cloud (UEC) is an example of a private cloud.

QUESTION 3:

Organization should consider-(i) Network Dependency and (ii) Risks from multi-tenancy while thinking of deploying an outsourced private cloud.

- A. Only (i)
- B. Only (ii)
- C. Both (i) and (ii)
- D. None of (i) and (ii)

Correct Option: C

Detailed Answer: For outsourced private cloud, subscribers may have an option to provide a unique, protected, and reliable network. Additionally, there is always a risk of multi-tenancy.



QUESTION 4:

Which of the following is/are XML parser API(s)?

- A. XaaS (Anything as a Model)
- B. DOM (Document Object Model)
- C. CLI (Command Line Interface)
- D. SLA (Service Level Agreement)

Correct Option: B

Detailed Answer: DOM is one of the three generic parser APIs. It reads in XML data, checks for syntax, and makes data available to an application.

QUESTION 5:

What is/are the main difference(s) between virtualization and dual boot?

- A. No difference between dual boot and virtualization.
- B. In virtualization, operating systems are not isolated from each other, but not in dual boot.
- C. In a dual boot, both operating systems run simultaneously, but not in virtualization.
- D. In virtualization, both operating systems run simultaneously, but not in dual boot.

Correct Option: D

Detailed Answer: Virtualization is a method of running multiple operating systems and user applications on the same hardware. Both OSs run simultaneously and are completely isolated from each other.

QUESTION 6:

In virtualization, a virtual machine monitor is also called

- A. Hypervisor
- B. Short-term Scheduler
- C. Analyzer
- D. Parser

Correct Option: A

Detailed Answer: A virtual machine monitor is also called a hypervisor. It runs the guest OS directly on the CPU to enable virtualization.





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QUESTION 7:

Speed and flexibility are the two disadvantages of hardware-assisted virtualization.

- A. True
- B. False

Correct Option: A

Detailed Answer: An unmodified OS cannot take advantage of any of the underlying features of virtualization. So, speed and flexibility become cons.

QUESTION 8:

The following problems are addressed through Web services:

- 1. Firewall
- 2. Interoperability
- 3. Complexity
- 4. Speed

Correct Option: A,B,C

Detailed Answer: Web services improve distributed interoperability by using open standards that can enable any two software components to communicate. It is also intended to take care of firewall issues.

QUESTION 9:

A web service can be discovered using

- A. SMS
- B. HTTP
- C. SMTP
- D. UDDI

Correct Option: D

Detailed Answer: Web service is an application component that can be discovered by UDDI (Universal Description, Discovery, and Integration).



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QUESTION 10:

Service-Oriented Architecture (SOA) consists of relationships between:

- A. Two entities (a service provider and a requestor)
- B. Two entities (a service provider and a broker)
- C. Three entities (a service provider, a service requestor, and a broker)
- D. Three entities (a service provider, a service requestor, and a hypervisor)

Correct Option: C

Detailed Answer: Service-Oriented Architecture (SOA) consists of relationships between three entities (a service provider, a service requestor, and a broker)



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Cloud Computing

Assignment- Week 3

 Save**Cloud Computing****Assignment- Week 3****TYPE OF QUESTION: MCQ/MSQ****Number of questions: 10****Total mark: 10 X 1 = 10****QUESTION 1:**

Which of the following is/are NOT SLA requirement(s) of PaaS cloud delivery model?

- a. Privacy
- b. Data Retention and Deletion
- c. Machine-Readable SLAs
- d. Certification

Correct Answer: b, c

Detailed Solution: Data Retention and Deletion and Machine-Readable SLAs are not SLA requirements with respect to Paas cloud delivery model.

QUESTION 2:

Which of the following is/are true regarding penalty cost? (Here D(t) and R(t) are instantaneous demand and resources at time t.)

- a. Penalty cost $\propto \int |D(t)/R(t)| dt$
- b. If demand is flat, penalty is equal to 0.
- c. If demand is exponential ($D(t)=e^t$), any fixed provisioning interval (tp) according to the current demands will fall linearly behind.
- d. The penalty cost for exponential demand is exponential.

Correct Answer: b, c**Detailed Solution:**

Penalty cost $\propto \int |D(t) - R(t)| dt$. . If demand is exponential ($D(t)=e^t$), any fixed provisioning interval (tp) according to the current demands will fall exponentially behind.

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**QUESTION 3:**

Row-oriented storage is efficient for data-warehouse workloads.

- a. TRUE
- b. FALSE

Correct Answer: b**Detailed Solution:**

Column-oriented storage is efficient for data-warehouse workloads.

QUESTION 4:

Which of the following is/are example(s) of cloud SLA(s) with IaaS delivery model?

- a. Amazon EC2
- b. Google App Engine
- c. Salesforce CRM
- d. Zoho mail

Correct Answer: a**Detailed Solution:**

Amazon EC2 is a cloud SLA with IaaS delivery model.

QUESTION 5:

Which of the following OpenStack components is used for block storage services?

- a. Keystone
- b. Cinder
- c. Swift
- d. Neutron

Correct Answer: b**Detailed Solution:**

Cinder is used for block storage services in OpenStack.

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**QUESTION 6:**

In cloud, service downtime is 30 minutes and availability of the service is 0.80. What is the service uptime?

**QUESTION 6:**

In cloud, service downtime is 30 minutes and availability of the service is 0.80. What is the service uptime?

- (a) 120 minutes
- (b) 60 minutes
- (c) 150 minutes
- (d) 135 minutes

Correct Answer: c

Detailed Solution:

$$\text{Availability} = 1 - (\text{downtime}/\text{uptime}).$$

$$\text{Uptime} = \text{Downtime}/(1-\text{Availability}) = 30/(1-0.8) = 150 \text{ minutes}$$

QUESTION 7:

In Google File System (GFS), the master maintains regular communication with the chunk servers.

- a. TRUE
- b. FALSE

Correct Answer: a

Detailed Solution:

In Google File System, the master maintains regular communication with the chunk servers through heartbeat messages.

QUESTION 8:

In a system, 400 unit workloads have been added. What will be the penalty?

- a. 40%
- b. 100 %
- c. 20%
- d. 8000%

Correct Answer: c

Detailed Solution:

Adding n independent demands reduces the C_v by $1/\sqrt{n}$ which in turn results penalty to



1/sqrt(n).

QUESTION 9:

Which of the following option(s) is/are correct?

- a. Service Level Agreement(SLA) contains Service Level Objectives(SLO)
- b. Service Level Objectives(SLO) contains Service Level Agreement(SLA)
- c. Multiple Service Level Agreements (SLAs) are aggregated to Key Performance Indicator (KPI)
- d. Key Performance Indicators (KPIs) are aggregated to Service Level Objectives(SLO)

Correct Answer: a, d

Detailed Solution:

The correct statements are: (a) SLA contains SLO. (d) KPIs are aggregated to SLO.

QUESTION 10:

Statement 1: In OpenStack block storage, the stored objects persist until the VM is terminated.

Statement 2: In OpenStack ephemeral storage, the stored objects are accessible from within VM as local file system.

- a. Both statement 1 and 2 are correct
- b. Statement 1 is correct and statement 2 is incorrect
- c. Statement 2 is correct and statement 1 is incorrect
- d. Both statement 1 and 2 are incorrect

Correct Answer: c

Detailed Solution:

In OpenStack block storage, the stored objects persist until specifically deleted by the user. In OpenStack ephemeral storage, the stored objects are accessible from within the VM as local file system.

*****END*****



**Cloud Computing****Assignment- Week 4****TYPE OF QUESTION: MCQ/MSQ***[One or more options may be correct]***Number of questions:** 10**Total mark:** $10 \times 1 = 10$ **QUESTION 1:**

In Google Cloud Platform (GCP), Cloud Datastore provides flexible object storage with global edge caching.

- (a) TRUE
- (b) FALSE

Correct Answer: b**Detailed Solution:**

In Google Cloud Platform (GCP), Cloud Storage provides flexible object storage with global edge caching.

QUESTION 2:

A. Cinder, OpenStack	1. MySQL or NoSQL databases.
B. GoogleAPIs	2. Google's fully managed, petabyte scale, low cost analytics data warehouse to find meaningful insights.
C. Cloud SQL	3. Integrate Google's services into the application. 4. Manages block storage in OpenStack.

Choose the correct option:

- a) A-4, B-3, C-1
- b) A-1, B-3, C-2
- c) A-2, B-4, C-1
- d) A-1, B-3, C-2

Correct Answer: a**Detailed Solution:** Cinder manages block storage in OpenStack, GoogleAPIs integrate Google's services into our application, and with Cloud SQL we get MySQL or NoSQL databases.



QUESTION 3:

Statement 1: Azure supports public cloud platform.
Statement 2: Azure App Service plan defines security.

- (a) Statement 1 is True and Statement 2 is False
- (b) Statement 1 is False and Statement 2 is True
- (c) Both are True
- (d) Both are False

Correct Answer: a

Detailed Solution: Microsoft Azure is Microsoft's public cloud computing platform. Azure App Service Plan is the container for hosting Web Apps, API Apps, Mobile Apps and Function Apps.

QUESTION 4:

Which of the following components of OpenStack is responsible for providing persistent block storage to running instances

- (a) Nova
- (b) Cinder
- (c) Swift
- (d) None of the above

Correct Answer: b

Detailed Solution: Cinder is responsible for providing persistent block storage to running instances.

QUESTION 5:

Which of the following is/are App services provided by Google Cloud Platform?

- (a) BigQuery
- (b) Google App Engine
- (c) Cloud Endpoints
- (d) Cloud SQL

Correct Answer: a, c

Detailed Solution: BigQuery and Cloud Endpoints are App services provided by Google Cloud Platform.





QUESTION 6:

In OpenStack, when a VM is terminated, which of the following memory resources are freed?

- (a) Ephemeral storage
- (b) Persistent storage
- (c) RAM
- (d) Block storage

Correct Answer: a, c

Detailed Solution: In OpenStack, ephemeral storage and RAM are freed when a VM is terminated.

QUESTION 7:

Google Cloud End Points helps to:

- (c) migrate the web app to Google Cloud Platform.
- (d) scale up the app according to the demand/ service requests.
- (e) provide flexible object storage with global edge caching.
- (f) Integrate Google's services into the application.

Correct Answer: b

Detailed Solution: Google Cloud End Points is responsible for scaling up the app according to the demand/ service requests

QUESTION 8:

The Azure App plan has a scale count of ____ instances.

- (a) 1 to 50
- (b) 1 to 20
- (c) 1 to 10
- (d) 1 to 100

Correct Answer: b

Detailed Solution: The Azure App plan has a scale count of 1 to 20 instances.

**QUESTION 9:**

Match the following columns regarding OpenStack:

Column 1	Column 2
A. Ephemeral storage	1. Cinder
B. Block storage	2. Nova
C. Object storage	3. Swift

- (a) A-1, B-2, C-3
- (b) A-2, B-3, C-1
- (c) A-3, B-1, C-2
- (d) A-2, B-1, C-3

Correct Answer: d

Detailed Solution: Ephemeral storage is managed by Nova, block storage is managed by Cinder and object storage is managed by Swift.

QUESTION 10:

In GCP, “gcloud app browse” – can be used to start the local development server for the application.

- (a) TRUE
- (b) FALSE

Correct Answer: b

Solution: “gcloud app browse” is used to view the web-app.

*****END*****





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Cloud Computing

Assignment-Week 5

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Multiple KPIs are aggregated to SLA.

- A. TRUE
- B. FALSE

Correct Option: B

Detailed Answer: KPIs are aggregated to SLO.

QUESTION 2:

Statement I: In resource management, resource allocation is the allocation of a service provider's resources to a customer

Statement II: Resource mapping is correspondence between resources required by the users and resources available with the provider.

Which of the options is/are correct?

- A. Statement I is TRUE and Statement II is FALSE
- B. Statement I is FALSE and Statement II is TRUE
- C. Both statements are TRUE
- D. Both statements are FALSE

Correct Option: B

Detailed Answer: Refer slide 10 in Resource Management - II. In resource management, resource allocation is the distribution of resources economically among competing groups of people or programs. Statement II is true. Hence, option B is correct.

QUESTION 3:

A third party application runs in the cloud for 12 hours/day. At the end of one month [30 days], it was found that the cloud service suffered 5 outages of durations: 1 hour 30 minutes, 30 minutes, 2 hours 15 minutes, 1 hour 45 minutes and T hours, each on different days over the service period.

Suppose a cloud guarantees service availability for 97% of time. What are the possible value(s) of T that SLA negotiation gets honored in terms of service availability?



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- A. 3 hours
- B. 6 hours
- C. 12 hours
- D. 8 hours

Correct Option: A**Detailed Answer:** Total Outage: $(6+T)$ hours, application runs for 360 hours in a month.Availability = $1 - (\text{downtime}/\text{uptime})$. For availability: $[1 - \{(6+T)/(354-T)\}] \geq 0.97$, $T \leq 4.48$

Option A is correct.

QUESTION 4:

In a MapReduce framework, the HDFS block size is 64 Mb. We have 3 files of size 65 Kb, 64 Mb and 128 Mb. How many blocks will be created by the Hadoop framework?

- A. 2
- B. 3
- C. 4
- D. 5

Correct Option: C**Detailed Answer:** For 65 Kb and 64 Mb, 1 block is created. For 128 Mb, 2 blocks are created.**QUESTION 5:**

What is/are the correct statement(s) regarding VM load management?

- A. When load increases, new VMs should be scheduled to new nodes.
- B. When load decreases, use WOL to start up waiting nodes.
- C. When load increases, use WOL to start up waiting nodes.
- D. When load decreases, live migrate VMs to more utilized nodes.

Correct Option: A, C, D**Detailed Answer:** When load decreases, VMs should be live migrated to more utilized nodes.

When load increases, WOL should be used to start up waiting nodes and new VMs should be scheduled to new nodes.

**QUESTION 6:**

Which of the following is/are the objective(s) of Resource Management?

- A. Improved Quality of Service (QoS)
- B. Scalability
- C. Increased overhead
- D. Increased throughput



QUESTION 6:

Which of the following is/are the objective(s) of Resource Management?

- A. Improved Quality of Service (QoS)
- B. Scalability
- C. Increased overhead
- D. Increased throughput

Correct Option: A, B, D

Detailed Answer: From definition of resource management. Reduced overhead is an objective.

QUESTION 7:

In computing, Performance/Watt follows Moore's law

- A. TRUE
- B. FALSE

Correct Option: B

Detailed Answer: In computing, Performance/Watt does not follow Moore's law. Refer slide 7 of Resource Management-I.

QUESTION 8:

Which of the following part(s) of the MapReduce is responsible for processing one or more chunks of data and producing the output results?

- A. Mapper
- B. Reducer
- C. Map task
- D. Task execution

Correct Option: C

Detailed Answer: Map Task is responsible for processing one or more chunks of data and producing the output results.



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**QUESTION 9:**

Consider that the peak computing demand for an organization is 200 units. The demand as a function of time can be expressed as $D(t) = 3(1+t)$. Baseline (owned) unit cost is 120 and cloud unit cost is 125.

Cloud is costlier than owning for a period of 150 time units.

- A. TRUE
- B. FALSE

Correct Option: A**Detailed Answer:** Total baseline cost $B_T = P \times B \times T = 200 \times 120 \times 150 = 36,00,000$ units.

$$\text{Total cloud cost } C_T = \int_0^T C * D(t) dt = \int_0^{150} 125 * 3(1 + t) dt = 375 * \left[t + \frac{t^2}{2} \right]_0^{150} = 375 * 150 * 76 = 42,75,000 \text{ units.}$$

Utility function $U_T = (C_T/B_T) = (4275000/3600000) = 1.19 > 1$. Therefore, cloud is costlier than owning.

QUESTION 10:

Which of the following is/are resource provisioning approaches?

- A. Intelligent multi-agent model
- B. Network queueing model
- C. Adaptive resource provisioning
- D. Reinforcement learning guided control policy

Correct Option: B, C**Detailed Answer:** Network queueing model and adaptive resource provisioning are resource provisioning approaches. The Intelligent multi-agent model is a resource allocation approach. Reinforcement learning guided control policy is a resource adaptation approach.

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Cloud Computing

Assignment-Week 6

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Modification threat on cloud security is an example of:

- A. Deception
- B. Disclosure
- C. Disruption
- D. Usurpation

Correct Option: A, C, D

Detailed Answer: Modification results in deception, disruption, and usurpation.

QUESTION 2:

Which of the following is/are example(s) of passive attack?

- A. Replay
- B. Denial of service
- C. Traffic analysis
- D. Masquerade

Correct Option: C

Detailed Answer: Traffic analysis is an example of passive attack.

QUESTION 3:

Interception is an attack on integrity

- A. TRUE
- B. FALSE

Correct Option: B

Detailed Answer: Interception is an attack on confidentiality.

**QUESTION 4:**

Statement I: Intrusion Detection System (IDS) scans the incoming messages, and creates alerts when suspected scans/attacks are in progress.

Statement II: Authentication is the identification of legitimate users.

- A. Statement I is TRUE and statement II is FALSE.
- B. Statement I is FALSE and statement II is TRUE.
- C. Both statements are TRUE.
- D. Both statements are FALSE.

Correct Option: C

Detailed Answer: Statement I is correct (Refer slide 24 of Cloud Security-I). Authentication is the identification of legitimate users.

QUESTION 5:

1. Injection attack	(a) Attacker sending huge amounts of requests to a certain service and causing denial of service.
2. Flooding	(b) Browser-based security issues.
3. Metadata (WSDL) spoofing attack	(c) Introduce malicious code to change the course of execution.
	(d) Malicious reengineering of Web Services' metadata description.

- A. 1-(a), 2-(b), 3-(d)
- B. 1-(c), 2-(a), 3-(d)
- C. 1-(b), 2-(c), 3-(d)
- D. 1-(a), 2-(c), 3-(d)

Correct Option: B

Detailed Answer: The following are web service based attacks. Refer to slide 23 of Cloud Security-II.

**QUESTION 6:**

Recovery Time Objective (RTO) represents the period of time allowed for the complete execution



QUESTION 6:

Detailed Answer: Recovery Time Objective (RTO) represents the period of time allowed for the complete execution of the task.

- A. TRUE
- B. FALSE

Correct Option: B

Detailed Answer: Recovery Time Objective (RTO) represents the period of time allowed for recovery i.e., the time that is allowed to elapse between the disaster and the activation of the secondary site.

QUESTION 7:

The correct statement(s) for necessary and sufficient conditions for the detection of inheritance conflict is/are:

- A. Sufficient condition: current entry role and at least one exit role forms conflicting pair
- B. Sufficient condition: current entry role is senior to at least one exit role
- C. Necessary condition: current entry role is senior to at least one exit role
- D. Necessary condition: at least one exit role

Correct Option: B, D

Detailed Answer: Refer necessary and sufficient conditions for the detection of inheritance conflict Page-26 of Cloud Security-IV

QUESTION 8:

Which of the following is/are hypervisor risks associated with VM escape?

- A. Vulnerable virtual machine applications like Vmchat, VMftp, Vmcat etc.
- B. Rogue hypervisor that hides itself from normal malware detection systems
- C. Improper configuration of VM
- D. Rogue hypervisor that creates a covert channel to dump unauthorized code

Correct Option: A, C

Detailed Answer: Hypervisor risks associated with VM escape consist of improper configuration of VM that allows malicious code to completely bypass the virtual environment, and obtain full root or kernel access to the physical host. Also, risks are associated with vulnerable virtual machine applications like Vmchat, VMftp, Vmcat etc.



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**QUESTION 9:**

In fault tolerance, replication is the duplication of critical components of a system with the intent of increasing reliability of the system, usually in the case of a backup or fail-safe.

- A. TRUE
- B. FALSE

Correct Option: B

Detailed Answer: In fault tolerance, replication is mirroring/sharing data over disks which are located in separate physical locations to maintain consistency.

QUESTION 10:

Which of the following Open-source tools is/are used for retrieving web pages in Amazon EC2 platform?

- A. wget
- B. hping
- C. ifconfig
- D. nmap

Correct Option: A

Detailed Answer: Wget is a tool to probe ports by retrieving web pages in EC2.



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Cloud Computing

Assignment-Week 7

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which of the following options is correct about geographic information?

Statement 1: Geographic information could be static or dynamic.

Statement 2: Geographic information varies in scale

Statement 3: Population of a city/town is a static geographic information

- a. Statement 1 & 2 are True, but Statement 3 is False.
- b. Statement 2 & 3 are True, but Statement 1 is False.
- c. Statement 1& 3 are True, but Statement 2 is False.
- d. All the statements are True.

Correct Answer: a

Detailed Solution: Population of a city is a dynamic geographic information.

QUESTION 2:

Which of the following is true about geographical information system? Choose the most appropriate option.

- a) Variable load of the GIS server needs dynamic scaling of resources.
- b) GIS uses network intensive web services.
- c) GIS requires a high level of reliability.
- d) All of these.

Correct Answer: d

Detailed Solution: All of this information is true about GIS. So, most appropriate answer is (d)

QUESTION 3:

Which of the following is/are not a benefit of Fog computing ?

- a. Location awareness
- b. Improved QoS
- c. High latency
- d. Man-in-the-middle-attack

**Correct Answer: (c) & (d)**

Detailed Solution: Fog results in low latency, which is one of its major benefits. As the computing data is over dispersed edge devices, there may occur issues like Man-in-the-middle-attack. So, the correct answer is (c) & (d).

QUESTION 4:

Which of the following statements is false about Code offloading using cloudlet?

Statement 1: The architecture reduces latency by using multi-hop network.

Statement 2: It potentially lowers battery consumption by using short range radio.

- a. Statement 1 is correct but Statement 2 is incorrect
- b. Statement 2 is correct but Statement 1 is incorrect
- c. Both the statements are correct
- d. Both the statements are incorrect.

Correct Answer: b

Detailed Solution: The architecture reduces latency by using a single-hop network and potentially lowers battery consumption by using Wi-Fi or short range radio. So, the correct option is (b).

QUESTION 5:

Which of the following are some of the key components of Mobile cloud computing ? Choose the most appropriate option.

- a. Solver
- b. Synchronizer
- c. Profiler
- d. All of the above

Correct Answer: d

Detailed Solution: Profiler, Solver and Synchronizer are some of the key components of mobile cloud computing. So, the correct option is (d).

QUESTION 6:

Which of the following statement(s) is/are FALSE about Fog Computing?

- a. Intelligence is brought to the cloud from the end users.
- b. Fog computing is used for real-time applications
- c. Fog nodes' response time is much higher than cloud server



- d. Network routers, WiFi Gateways will not be capable of running applications

Correct Answer: a,c, d

Detailed Solution: Fog computing brings intelligence to end users from the cloud, Fog computing

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- d. Network routers, WiFi Gateways will not be capable of running applications

Correct Answer: a,c, d

Detailed Solution: Fog computing brings intelligence to end users from the cloud, Fog computing use for real-time applications, Fog nodes' response time is much lower than cloud server, network routers, WiFi Gateways will be capable of running applications. So, the correct options are (a),(c) & (d).

QUESTION 7:

Fog computing enablers are

- a. Virtualization
- b. Big data
- c. Service oriented architecture
- d. None of these

Correct Answer: a, c

Detailed Solution: Fog computing enablers are Virtualization, Service oriented architecture.

Correct options are (a), (c).

QUESTION 8:

Which of the following is/are feature(s) of Mobile Cloud Computing?

- a) Use less mobile device resources because applications are cloud-supported
- b) Reduce reliability with information backed up and stored in the cloud
- c) Mobile devices connect to services delivered through an API architecture
- d) Facilitates slower development, delivery and management of mobile apps

Correct Answer: a, c

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Detailed Solution: Mobile cloud computing features are: Facilitates the quick development, delivery and management of mobile apps. Uses fewer device resources because applications are cloud-supported. Mobile devices connect to services delivered through an API architecture. Improves reliability with information backed up and stored in the cloud. So, the correct options are (a) and (c).

QUESTION 9:

Which of the following is/are the challenge(s) of Geospatial Cloud?

- a) Scaling of Spatial Databases
- b) Policy management among the tenants
- c) Implementation of Spatial Databases
- d) None of the above

Correct Answer: a, b, c

Detailed Solution: Challenges of Geospatial Cloud are as follows-

- 1. Implementation of Spatial Databases
 - 2. Scaling of Spatial Databases
 - 3. Policy management among the tenants
- So, the correct options are (a), (b), (c).
-

QUESTION 10:

Consider following statements:

Statement 1: Geospatial Cloud helps to integrate data from heterogeneous back-end data service.

Statement 2: Data services can be inside and/or outside of the cloud environment in Geospatial Cloud.

- a. Statement 1 is Correct, but Statement 2 is Incorrect.
- b. Statement 2 is Correct, but Statement 1 is Incorrect.
- c. Both statements are Correct.
- d. Both statements are Incorrect



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Correct Answer: c

Detailed Solution: Both statements are correct regarding Geospatial Cloud concept. So, the correct option is (c).



Cloud Computing

Assignment-Week 8

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Which of the following statements is/are true about Docker ?

Statement 1: Docker hub is used for building docker images and creating docker containers.

Statement 2: Docker compose is a registry used to host various docker images.

- a. Statement 1 is correct but Statement 2 is incorrect
- b. Statement 2 is correct but Statement 1 is incorrect
- c. Both the statements are correct
- d. Both the statements are incorrect.

Correct Answer: d

Detailed Solution: Docker Engine is used for building docker images and creating docker containers. Docker Hub is a registry used to host various docker images.

So, the correct option is (d).

QUESTION 2:

Virtual machines take up less space than Containers.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Containers take up less space than VMs and start almost instantly.

So, the correct option is (b).



QUESTION 3:

Which of the following statements is/are correct? Choose the most appropriate option.

Statement 1: An image is a light weight, stand alone, executable package that includes everything to run a piece of software.



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QUESTION 3:

Which of the following statements is/are correct? Choose the most appropriate option.

Statement 1: An image is a light weight, stand alone, executable package that includes everything to run a piece of software.

Statement 2: Container is a run time instance of an image.

- a. Statement 1 is correct but Statement 2 is incorrect
- b. Statement 2 is correct but Statement 1 is incorrect
- c. Both the statements are correct
- d. Both the statements are incorrect.

Correct Answer: c

Detailed Solution: Both the statements are correct.

QUESTION 4:

In IoT based vehicular data clouds, vehicles providing their networking and data processing capabilities to other vehicles through the cloud is best identified with which of the following services?

- a. SaaS
- b. PaaS
- c. IaaS
- d. BaaS

Correct Answer: c

Detailed Solution: This comes under a new service named Network and Data processing as a service i.e. IaaS. So, the correct option is (c).

QUESTION 5:

Each container can not run as an isolated process in user space.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Each container can run as an isolated process in user space. So, the correct option is (b).

**QUESTION 6:**

Containers can share the OS kernel with other containers.

- a. True
- b. False

Correct Answer: a

Detailed Solution: Containers are an abstraction at the app layer that packages code and dependencies together. Multiple containers can run on the same machine and share the OS kernel with other containers, each running as isolated processes in user space.

QUESTION 7:

For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection.

- a) True
- b) False

Correct Answer: a

Detailed Solution: For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection. So, the correct option is (a).

QUESTION 8:

An IoT platform has following basic building blocks

- (a) Things
- (b) Gateway
- (c) Network and Cloud
- (d) Learning Module

Correct Answer: a, b, c

Detailed Solution: An IoT platform has basically three building blocks: Things, Gateway, Network and Cloud.

**QUESTION 9:**

In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as

- a. Power Delivered / Overall Power



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QUESTION 9:

In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as

- a. Power Delivered / Overall Power
- b. Overall Power / Power Delivered
- c. Overall Power * Power Delivered
- d. None of these

Correct Answer: b

Detailed Solution: In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as Overall Power / Power Delivered. So, the correct option is (b).

QUESTION 10:

A green broker can perform scheduling of applications to reduce energy consumption.

- a. True
- b. False

Correct Answer: a

Detailed Solution: A green broker can perform scheduling of applications to reduce energy consumption. So, the correct option is (a).

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**Cloud Computing****Assignment-Week 9****TYPE OF QUESTION: MCQ/MSQ****Number of questions: 10****Total mark: 10 X 1 = 10****QUESTION 1:**

Which of the following statements is/are false ?

- a. Fog and Edge computing are substitutes for cloud computing.
- b. Fog and Edge computing may aid cloud computing in overcoming some of the limitations like latency issues.

Correct Answer: a

Detailed Solution: Fog and Edge computing are no substitutes for cloud computing as they do not completely replace it. So, the correct option is (a).

QUESTION 2:

Which of the following is not a layer of the Cloud-Fog environment model?

- a. Client layer
- b. Serverless layer
- c. Fog layer
- d. Cloud layer

Correct Answer: b

Detailed Solution: Cloud-Fog environment model consists of three layers: client (edge) layer, fog layer and cloud layer.

So, the correct option is (b).

QUESTION 3:

In the Cloud-Fog environmental model, servers contain a fog server manager and virtual machines to manage requests by using _____ technique.

- a. Image virtualization
- b. Container virtualization
- c. Server virtualization



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-
- d. None of these

Correct Answer: c

Detailed Solution: It uses server virtualization techniques. So, the correct option is (c).

QUESTION 4:

The architecture used for resource management in fog/edge computing is classified on the basis of which of the following?

- a. Tenancy
- b. Data flow
- c. Hardware
- d. All of these

Correct Answer: a, b

Detailed Solution: This comes under a new service named Network and Data processing as a service i.e. IaaS. So, the correct options are (a) & (b).

QUESTION 5:

Which of the following underlying algorithm(s) is used to facilitate fog/edge computing ?

- a. Discovery
- b. Load balancing
- c. Benchmarking
- d. Cache Flow

Correct Answer: a,b,c

Detailed Solution: Major underlying algorithm(s) is used to facilitate fog/edge computing are: Discovery, Benchmarking, Load balancing and placement. So, the correct options are (a,b,c)

**QUESTION 6:**

_____ is a technique in which a server, an application and the associated data are moved onto the edge of the network

- a. Containerization
- b. Virtualization
- c. Offloading
- d. None of these

Correct Answer: c

Detailed Solution: offloading is a technique in which a server, an application and the associated data are moved onto the edge of the network. So, the correct option is (c).

QUESTION 7:

Cloud federation is the collaboration between cloud service providers to achieve which of the following? Choose the most appropriate option.

- a. Capacity utilization
- b. Interoperability
- c. Offloading
- d. None of these

Correct Answer: a,b

Detailed Solution: Cloud federation is the collaboration between cloud service providers to achieve Capacity utilization, Interoperability, Catalog of services and Insight about providers and SLA's. So, the correct options are (a) and (b).

QUESTION 8:

Which of the following is false about loosely coupled federations?

- a. Limited inter operations between cloud instances.
- b. Usually no support for advanced features.
- c. Advanced control over remote resources.
- d. None of these

Correct Answer: c

Detailed Solution: A cloud instance in a tightly coupled federation has advanced control over remote resources. Correct option is (c).





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**QUESTION 9:**

In which of the following different CSPs establish an agreement stating the terms and conditions under which one partner cloud can use resources from another.

- a. Loosely coupled federation
- b. Partially coupled federation
- c. Tightly coupled federation
- d. All of these

Correct Answer: b

Detailed Solution: In partially coupled federation, different CSPs establish an agreement stating the terms and conditions under which one partner cloud can use resources from another. So, the correct option is (b).

QUESTION 10:

Hybrid architecture combines the existing on-premise infrastructure (usually a private cloud) with remote resources from one or more public clouds to provide extra capacity to satisfy peak demand periods.

- a. True
- b. False

Correct Answer: a

Detailed Solution: Cloud bursting or hybrid architecture combines the existing on-premise infrastructure (usually a private cloud) with remote resources from one or more public clouds to provide extra capacity to satisfy peak demand periods. So, the correct option is (a).



Cloud Computing

Assignment-Week 10

TYPE OF QUESTION:
MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

VM migration is the process of moving running applications or VMs from one physical host to another host.

- a. True
- b. False

Correct Answer: a

Detailed Solution: VM migration is a process to move running applications or VMs from one physical host/server to another host. So option (a) is correct.

QUESTION 2:

Given the VM memory size of 1024GB and the transmission rate of 16 MB/sec

What are the total migration time and downtime for non-live VM migration? Choose the most appropriate option.

- a. 20 hours, 25 hours
- b. 18 hours, 18 hours
- c. 16 hours, 16 hours
- d. 24 hours, 20 hours

Correct Answer: b

Detailed Solution: Total Migration time = VM memory size/ transmission rate
$$=(1024 \times 2^{30})/(16 \times 2^{20})=65536 \text{ secs} = 18 \text{ hours.}$$

For non-live migration, overall migration time is the same as overall downtime.

QUESTION 3:

With Docker, the resource management effort is separated from the configuration effort.

- a. True
- b. False





Correct Answer: a

Detailed Solution: With Docker, the resource management effort is separated from the configuration effort.

QUESTION 4:

In Docker utility, ----- is a collection of filesystem layers and some metadata which, if taken together, can be spun up as Docker containers.

- a. Operating System
- b. Microservice
- c. Virtual Machine
- d. Image

Correct Answer: d

Detailed Solution: In Docker utility, an image is a collection of filesystem layers and some metadata which if taken together, they can be spun up as Docker containers.

QUESTION 5:

What is(are) the reason(s) to opt for VM migration in the cloud computing paradigm?

- a. No particular reason; depends on the will of the end client/user.
- b. To remove a physical machine from service
- c. To save power consumption
- d. To relieve the load on the congested hosts.

Correct Answer: b,d

Detailed Solution: We should opt for VM migration either in order to remove a physical machine from service or to relieve the load on the congested hosts and/or both.

QUESTION 6:

What is(are) the key advantage(s) of Docker?

- a. It facilitates microservice architecture
- b. It can be used to package software



- c. It can be used to model networks.
- d. None of these

Correct Answer: a,b,c

Detailed Solution: Facilitating microservices, packaging software, and modeling networks for initiating multiple isolated containers on a single machine, are the key advantages of Docker.

QUESTION 7:

Post-copy and Pre-copy migration approaches are followed in :

- a. Live Migration process
- b. Non-live Migration process
- c. Hybrid Migration process
- d. None of these

Correct Answer: a

Detailed Solution: Both Post-copy and Pre-copy are approaches for live migration process.

QUESTION 8:

Which of the following is (are) true in the case of Docker architecture?

Statement-1: Private Docker registry is a service that stores Docker images.

Statement-2: Docker on the host machine is split into two parts- a daemon with a RESTful API and a client who talks with the daemon.

- a. Only Statement-1 is true
- b. Only Statement-2 is true
- c. Both Statement-1 and 2 are true
- d. Neither Statement 1 nor 2 is true

Correct Answer: c

Detailed Solution: Private Docker registry is a service that stores Docker images.

Moreover, Docker on the host machine is split into two parts- a daemon with RESTful API and a client who talks with the daemon.

QUESTION 9:

Which of the statement(s) is(are) true for containers?

Statement-1: Docker is an open platform for automating the deployment, scaling, and management



of containerized applications.



of containerized applications.

Statement-2: Containers make it easy to share CPU, memory, storage and network resources at the operating system level.

- a. Only Statement-1 is true
- b. Only Statement-2 is true
- c. Both Statement-1 and 2 are true
- d. Neither Statement 1 nor 2 is true

Correct Answer: b

Detailed Solution: Kubernetes is an open platform for automating the deployment, scaling, and management of containerized applications. Containers make it easy to share CPU, memory, storage, and network resources at the operating system level. So, only statement-2 is true.

QUESTION 10:

Kubernetes operates at the hardware level.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Kubernetes operates at the container level.

Cloud Computing**Assignment-Week 11****TYPE OF QUESTION: MCQ/MSQ****Number of questions: 10****Total mark: 10 X 1 = 10****QUESTION 1:**

Which of the following statements is/are false ?

- a. Serverless computing allows the users with more control over the deployment environment compared to PaaS.
- b. Serverless computing is a form of cloud computing that allows users to run event driven granular applications.

Correct Answer: a

Detailed Solution: In PaaS the developer has more control over the deployment environment. So, the correct option is (a).

QUESTION 2:

Which of the following options is most appropriate for FaaS ?

Statement 1: Each function in the FaaS platform gets unlimited execution time.

Statement 2: Functions are always active and ready for execution.

- a. Statement 1 is correct but Statement 2 is incorrect.
- b. Statement 2 is correct but Statement 1 is incorrect.
- c. Both the statements are correct.
- d. Both the statements are incorrect.

Correct Answer: d

Detailed Solution: A function in FaaS typically has limited execution time. Functions are not constantly active. FaaS platform listens for the events that instantiate the functions. So, the correct option is (d).

QUESTION 3:

AWS S3 is a fully managed proprietary NoSQL database service that supports key-value and document data structures and is offered by Amazon.com as part of the Amazon Web Services portfolio.

- a. True

- b. False

Correct Answer: b

-
- b. False

Correct Answer: b

Detailed Solution: Amazon DynamoDB is a fully managed proprietary NoSQL database service that supports key-value and document data structures and is offered by Amazon.com as part of the Amazon Web Services portfolio. Whereas, Amazon S3 is a simple storage service . So, the correct option is (b).

QUESTION 4:

BigQuery is a fully-managed, serverless data warehouse by _____.

- a. AWS
- b. Google
- c. Microsoft
- d. IBM

Correct Answer: b

Detailed Solution: BigQuery is a fully-managed, serverless data warehouse that enables scalable analysis over petabytes of data by Google. So, the correct option is (b).

QUESTION 5:

AWS charges for the provisioned resources and executing Lambda.

- a. True
- b. False

Correct Answer: b

Detailed Solution: AWS charges only when the AWS lambda code executes. So, the correct option is (b).



QUESTION 6:

In serverless computing the user has to manage the scalability needs of a function, unlike FaaS.

- a. True
- b. False

Correct Answer: b

Detailed Solution: In serverless computing the cloud service provider has to manage the scalability needs of a function. So, the correct option is (b).

QUESTION 7:

Which of the following is/are the goal of sustainable cloud computing? Choose the most appropriate option.

- a. Minimizing the energy consumption.
- b. Increasing reliability of CDCs.
- c. Minimizing carbon footprint related cost.
- d. Increasing network traffic

Correct Answer: a,b,c

Detailed Solution: Focus on minimizing the energy consumption and carbon footprint and ensuring reliability of CDCs is the goal of sustainable cloud computing.

QUESTION 8:

Which of the following is not a category of research initiative on sustainable cloud computing?

- a. Renewable Energy
- b. Capacity planning
- c. Environment Sandboxing
- d. None of these

Correct Answer: c

Detailed Solution: Environment Sandboxing is not a category of research initiative on sustainable cloud computing. The other two options are. So, the correct option is (c).





QUESTION 9:

CDCs consist of a chassis and racks to place the servers to process the IT workloads.

- a. True
- b. False

Correct Answer: a

Detailed Solution: CDCs consist of a chassis and racks to place the servers to process the IT workloads. So, the correct option is (a).

QUESTION 10:

_____ are an important distribution mechanism for libraries and custom runtimes in AWS serverless ecosystem.

- a. Runtimes
- b. Lambda Layers
- c. Log streams
- d. None of these

Correct Answer: b

Detailed Solution: Lambda layers are an important distribution mechanism for libraries, custom runtimes and other imp function dependencies in AWS serverless ecosystem. So, the correct option is (b).



Cloud Computing

Assignment-Week 12

TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

The key features of Mobile Cloud Computing (MCC) for 5G networks include

- a. Reliability improvement
- b. Sharing of resources
- c. Offloading data processing
- d. Mitigating network traffic congestion

Correct Answer: a,b,c

Detailed Solution: The key features of Mobile Cloud Computing (MCC) for 5G networks include sharing resources for mobile applications and improved reliability as data is backed up and stored in the cloud. As MCC also offloads data processing from the devices to the cloud, fewer device resources are consumed by applications.

QUESTION 2:

Cyber-physical system is all about _____ of the physical and the cyber.

- a. Union
- b. Intersection
- c. Segregation
- d. None of above

Correct Answer: b

Detailed Solution: Cyber-physical system is all about the intersection of the physical and cyber.

QUESTION 3:

Cloud computing services provide a flexible platform for realizing the goals of Cyber-Physical systems.





- a. True
- b. False

Correct Answer: a

Detailed Solution: Cloud computing services provide a flexible platform for realizing the goals of CPS.

QUESTION 4:

The advantage(s) of Cyber-Physical Cloud Computing is(are) as follows

- a. Modular composition
- b. Multi-Tenancy
- c. Data flow
- d. Reliability and resiliency

Correct Answer: a, d

Detailed Solution: The advantages of CyberPhysical Cloud Computing are modular composition and reliable and resilient architecture.

QUESTION 5:

A _____ is a trace generated by a moving object in geographical space, usually represented by a series of chronologically ordered points.

- a. Time series
- b. Road map
- c. Spatial trajectory
- d. Spatial crowdsourcing

Correct Answer: c

Detailed Solution: A spatial trajectory is a trace generated by a moving object in geographical spaces, usually represented by a series of chronologically ordered points.



QUESTION 6:

Limitation(s) of IoT devices is(are)

- a. Containerization
- b. Storage
- c. Processing
- d. Power requirement

Correct Answer: b,c,d

Detailed Solution: The limitations of IoT devices are storage, power requirement, and processing.

QUESTION 7:

Which of the statements is(are) true with respect to Spatial cloud

Statement 1: It does not support shared resource pooling which is useful for participating organizations with common or shared goals

Statement 2: Spatial cloud provides infrastructure requirement that is based on application, with nothing to purchase. This leverages the scalability of the application.

- a. Only statement 1 is true
- b. Only statement 2 is true
- c. Both statements are true
- d. None of the statements is true

Correct Answer: b

Detailed Solution: Spatial cloud provides infrastructure requirement that is based on application, with nothing to purchase. This leverages the scalability of the application. Also, it supports shared resource pooling which is useful for participating organizations with common or shared goals. So, option b is correct.



QUESTION 8:



QUESTION 8:

Customized wearable devices for collecting health parameters are the best examples of

- a. IoHT
- b. Fog device
- c. Fog-Cloud interfaced.
- d. Cloud-Fog-Edge-IoHT

Correct Answer: d

Detailed Solution: Customized wearable devices for collecting health parameters are the best examples of Cloud-Fog-Edge-IoHT.

QUESTION 9:

The cyber-physical system involves transdisciplinary approaches, merging the theory of cybernetics, mechatronics, design, and process science.

- a. True
- b. False

Correct Answer: a

Detailed Solution: The cyber-physical system involves transdisciplinary approaches, merging the theory of cybernetics, mechatronics, design, and process science.

QUESTION 10:

5G network technology has proven to offer a theoretical download speed of 1Gbit/s.

- a. True
- b. False

Correct Answer: b

Detailed Solution: 5G wireless technology has proven to offer a theoretical download speed of 10Gbit/s.

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Cloud Computing

Assignment- Week 8

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as

- a) Power Delivered / Overall Power
- b) Overall Power / Power Delivered
- c) Overall Power * Power Delivered
- d) None of these

Correct Answer: b

Detailed Solution: In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as Overall Power / Power Delivered. So, the correct option is (b).

QUESTION 2:

_____ reduce the overhead of resource management by using light-weight virtualization.

- a) Containers
- b) Virtual machines
- c) Both a and b
- d) Neither a nor b

Correct Answer: a

Detailed Solution: Containers reduce the overhead of resource management by using light-weight virtualization.

QUESTION 3:

Each container can not run as an isolated process in user space.

- a) True
- b) False

Correct Answer: b

Detailed Solution: Each container can run as an isolated process in user space. So, the correct option is (b).

QUESTION 4:

--- runs completely isolated from the host environment by default, only accessing host files and



ports if configured to do so.

- a) Image
- b) Container
- c) Compose
- d) None of these

Correct Answer: b

Detailed Solution: Container runs completely isolated from the host environment by default, only accessing host files and ports if configured to do so. So, the correct option is (b).

QUESTION 5:

Docker engine is a tool for defining and running multi-container Docker applications.

- a) True
- b) False

Correct Answer: b

Detailed Solution: Docker compose is a tool for defining and running multi-container Docker applications. So, the correct option is (b).

QUESTION 6:

Which of the following procedure helps to reduce data center cooling cost in an energy efficient way?

- a) Build servers that run at lower temperatures
- b) Build servers that run at higher temperatures
- c) Deploy fewer VMs
- d) Deploy more VMs

Correct Answer: a

Detailed Solution: Building servers that run at lower temperatures can help to reduce data center cooling cost in an energy efficient way.

QUESTION 7:

Which of the following statements are True?

- a) Virtual sensor is an emulation of a physical sensor that obtains its data from underlying physical sensors



- b) Virtual sensors act as an image in the software of the corresponding physical sensors
- c) Physical sensors contain metadata about the virtual sensors and the user currently holding that physical sensor



- b) Virtual sensors act as an image in the software of the corresponding physical sensors
- c) Physical sensors contain metadata about the virtual sensors and the user currently holding that physical sensor
- d) Physical sensors provide a customized view to users using distribution and location transparency

Correct Answer: a, b

Detailed Solution: Virtual sensor is an emulation of a physical sensor that obtains its data from underlying physical sensors. Virtual sensors act as an image in the software of the corresponding physical sensors.

QUESTION 8:

- get virtual access to host resources through a hypervisor.
- a) Containers
 - b) Virtual machines
 - c) Both a and b
 - d) Images

Correct Answer: b

Detailed Solution: Virtual machines get virtual access to host resources through a hypervisor. So, the correct option is (b).

QUESTION 9:

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.

QUESTION 10:

For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection.

- a) True
- b) False

Correct Answer: a

Detailed Solution: For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection. So, the correct option is (a).

*****END*****

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**Cloud Computing****Assignment- Week 8**

TYPE OF QUESTION: MSQ

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

Each container can not run as an isolated process in user space.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Each container can run as an isolated process in user space. So, the correct option is (b).

QUESTION 2:

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- a. Image
- b. Container
- c. Compose
- d. None of these

Correct Answer: b

Detailed Solution: Container runs completely isolated from the host environment by default, only accessing host files and ports if configured to do so. So, the correct option is (b).

QUESTION 3:

--- is a lightweight, stand-alone, executable package that includes everything needed to run a piece of software, including the code, a runtime, libraries, environment variables etc.



- a. Container
- b. Hypervisor
- c. Image
- d. None of these

Correct Answer: c

Detailed Solution: Image is a lightweight, stand-alone, executable package that includes everything needed to run a piece of software, including the code, a runtime, libraries, environment variables etc.

So, the correct option is (c).

QUESTION 4:

Docker engine is a tool for defining and running multi-container Docker applications.

- a. True
- b. False

Correct Answer: b

Detailed Solution: Docker compose is a tool for defining and running multi-container Docker applications. So, the correct option is (b).

QUESTION 5:

Docker rmi is used to delete a local ----

- a. image
- b. container
- c. volume
- d. node

Correct Answer: a

Detailed Solution: Docker rmi is used to delete a local image. So, the correct option is (a).

QUESTION 6:

--- get virtual access to host resources through a hypervisor.

- a. Containers

- b. Virtual machines
- c. Both a and b
- d. Images



- b. Virtual machines
- c. Both a and b
- d. Images

Correct Answer: b

Detailed Solution: Virtual machines get virtual access to host resources through a hypervisor. So, the correct option is (b).

QUESTION 7:

A docker image can be created from a docker container.

- a. True
- b. False

Correct Answer: a

Detailed Solution: A docker image can be created from a docker container. So, the correct option is (a).

QUESTION 8:

A green broker can perform scheduling of applications to reduce energy consumption.

- a. True
- b. False

Correct Answer: a

Detailed Solution: A green broker can perform scheduling of applications to reduce energy consumption. So, the correct option is (a).

QUESTION 9:

In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as

- a. Power Delivered / Overall Power
- b. Overall Power / Power Delivered
- c. Overall Power * Power Delivered
- d. None of these

Correct Answer: b

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Detailed Solution: In the context of Green Cloud Computing, the Power Usage Effectiveness is defined as Overall Power / Power Delivered. So, the correct option is (b).

QUESTION 10:

For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection.

- a. True
- b. False

Correct Answer: a

Detailed Solution: For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection. So, the correct option is (a).

*****END*****

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Cloud Computing

Assignment- Week 8

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

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

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- b) Memory modules
- c) Disks
- d) None of these

Correct Answer: a, b, c

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QUESTION 10:

For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection.

- a) True
- b) False

Correct Answer: a

Detailed Solution: For sensor resources that do not have direct connection to the cloud, sensor network proxy provides the connection. So, the correct option is (a).

*****END*****

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Cloud Computing
Assignment- Week 8
TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10



Total mark: 10 X 1 = 10

MCQ/MSQ Question

QUESTION 1:

In the containers terminology

Statement 1: ps : List all containers (incl. stopped)

Statement 2: rm : Delete a container

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: b

Detailed Solution: In containers terminology ps : List all running containers (ps -a : List all containers (incl. stopped)) therefore statement 1 is false only statement 2 is true.

QUESTION 2:

Docker provides application level virtualization.

- a. True
- b. False

Correct Answer: a

Detailed Solution: One of the reasons why docker is needed for applications is that it provides application level virtualization.

 Save**QUESTION 3:**

In the image terminologies rmi is used to?

- a. Delete a local image
- b. List all local images
- c. Delete a container
- d. Download image from repository

Correct Answer: a

Detailed Solution: In image terminology rmi is used to delete a local image.

QUESTION 4:

A container is a runtime instance of an image.

- a. True
- b. False

Correct Answer: a

Detailed Solution: The given statement is true.

QUESTION 5:

Statement 1: Sensor data can be easily shared by different groups of users.

Statement 2: Sensor nodes have substantial data acquisition and processing capability.

Which of the above statements are True?

- a. I only
- b. II only
- c. I and II
- d. None

Correct Answer: b

Detailed Solution: Sensor data cannot be easily shared by different groups of users therefore statement 1 is false.

QUESTION 6:

___ is an Interface between sensor resources and the cloud fabric.

QUESTION 6:

___ is an Interface between sensor resources and the cloud fabric.

- a. Sensor network proxy
- b. Sensor-Cloud proxy
- c. None

Correct Answer: b

Detailed Solution: Sensor-Cloud proxy is an Interface between sensor resources and the cloud fabric.

QUESTION 7:

Sensor Network proxy provides the connection for sensor resources that do not have direct connection to the cloud.

- a. True
- b. False

Correct Answer: a

Detailed Solution: The given statement is true.

QUESTION 8:

Building blocks of IOT are

- a. Things
- b. Gateway
- c. Network and Cloud
- d. All above

Correct Answer: d

Detailed Solution: An IoT platform has basically three building blocks Things, Gateway, Network and Cloud.

QUESTION 9:

___ layer of an IOT cloud system represents typical IoT applications executed across IoT and Clouds.

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- a. Top layer
- b. Middle layer
- c. Bottom layer
- d. None

Correct Answer: a

Detailed Solution: Top layer represents typical IoT applications executed across IoT and Clouds.

QUESTION 10:

The Virtual sensor configuration in which the geographical area is divided into regions and each region can have one or more physical sensors and sensor networks is?

- a. One to many configuration
- b. Many to one configuration
- c. Many to many configuration
- d. Derived configuration

Correct Answer: b

Detailed Solution: In many to one configuration the geographical area is divided into regions and each region can have one or more physical sensors and sensor networks.

*****END*****

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Cloud Computing
Assignment- Week 5
TYPE OF QUESTION: MCQ/MSQ

Number of questions: 10



Total mark: 10 X 1 = 10

MCQ/MSQ Question

QUESTION 1:

Which of the following is a formal contract between a Service Provider (SP) and a Service Consumer (SC)?

- a. SLA (Service level agreement)
- b. SLO (Service level objectives)
- c. Both
- d. None

Correct Answer: a

Detailed Solution: Service level agreement is a formal contract between a Service Provider (SP) and a Service Consumer (SC)

QUESTION 2:

Hadoop is an open-source implementation of Map Reduce.

- a. True
- b. False

Correct Answer: a

Detailed Solution: The given statement is True.

**QUESTION 3:**

In MapReduce model _____ make remote procedure call requests to the _____ to fetch the files.

- a. Mappers, Reducers
- b. Reducers, Mappers
- c. Master, Reducers
- d. Master, Mappers

Correct Answer: b

Detailed Solution: In MapReduce model reducers make remote procedure call requests to the mappers to fetch the files.

QUESTION 4:

Suppose a cloud guarantees service availability for 97% of time. Let a third party application runs in the cloud for 10 hours/day. At the end of one month, it was found that total outage is 8 hrs.

- a. SLA has violated the initial availability guarantee.
- b. SLA has NOT violated the initial availability guarantee
- c. Cannot be determined

Correct Answer: b

Detailed Solution:

$$\text{Total time guaranteed} = 10 * 30 = 300 \text{ hrs}$$

$$\text{Outage time} = 8 \text{ hrs}$$

$$\text{Therefore, service duration} = 300 - 8 = 292$$

$$\% \text{ availability} = 1 - 8/292 = 97.26\%$$

Final service availability > Initial service guarantee, therefore option b is correct

QUESTION 5:

Which of the following is/are NOT among cloud properties as per economic viewpoint?

- a. Common Infrastructure
- b. Location Dependence
- c. Online connectivity
- d. Utility pricing

Correct Answer: b

Detailed Solution: Location Independence is a cloud property as per economic viewpoint as

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Cloud Computing

Assignment- Week 7

TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Fog Computing implements in

- a. Smart Grid
- b. Start Traffic Light
- c. Connected Vehicles
- d. None of the above

Correct Answer: a, b, c

Detailed Solution:

Fog computing implements in Smart Grid, Start Traffic light, Connected Vehicles. So, correct options are (a), (b), and (c).

QUESTION 2:

What is/are TRUE about Mobile Cloud Computing(MCC)?

- a. MCC should increase the mobile's battery lifetime by reducing power consumption
- b. MCC should optimize the cost of network usage and server usage
- c. MCC should take longer time to finish the application compared to local execution
- d. MCC should not bother about the security of data while offloading it to server

Correct Answer: a, b

Detailed Solution:

MCC must reduce energy usage and extend battery life. It should not take longer to finish the application compared to local execution. Cost of network usage and server usage must be optimized. As offloading transfers data to the servers, MCC ensure confidentiality and privacy of data, how to identify methods which process confidential data. So, the options (a) and (b) are true about MCC.



QUESTION 3:

Identify the correct statement(s) about Cloudlet?

- a. It increases latency by using multi-hop network
- b. It consumes low battery power
- c. It uses broadband wireless
- d. It uses short-range radio wireless

Correct Answer: b, d

Detailed Solution:

Cloudlet architecture decreases latency by using a single-hop network and potentially lowers battery consumption by using Wi-Fi or short-range radio instead of broadband wireless which typically consumes more energy. So, the correct options are (b) and (d).

QUESTION 4:

Which of the followings is/are feature(s) of Mobile Cloud Computing?

- a. Use less mobile device resources because applications are cloud-supported
- b. Reduce reliability with information backed up and stored in the cloud
- c. Mobile devices connect to services delivered through an API architecture
- d. Facilitates slower development, delivery and management of mobile apps

Correct Answer: a, c

Detailed Solution:

Mobile cloud computing features are: Facilitates the quick development, delivery and management of mobile apps. Uses fewer device resources because applications are cloud-supported. Mobile devices connect to services delivered through an API architecture. Improves reliability with information backed up and stored in the cloud. So, the correct options are (a) and (c).



QUESTION 5:

Match the following tables related to MCC Key components:



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QUESTION 5:

Match the following tables related to MCC Key components:

Table – I	Table – II
1. Profiler	i. Collects results of split execution and combine, and make the execution details transparent to the user
2. Solver	ii. Monitors application execution to collect data about execution time, power consumption, network traffic
3. Synchronizer	iii. The task of selecting which parts of an app runs on mobile and cloud

- a. 1. -> (ii), 2. -> (iii), 3. -> (i)
- b. 1. -> (iii), 2. -> (i), 3. -> (ii)
- c. 1. -> (i), 2. -> (ii), 3. -> (iii)
- d. 1. -> (ii), 2. -> (i), 3. -> (iii)

Correct Answer: a**Detailed Solution:**

Profiler monitors application execution to collect data about the time to execute, power consumption, network traffic. Solver has the task of selecting which parts of an app runs on mobile and cloud. Task of synchronizer modules is to collect results of split execution and combine, and make the execution details transparent to the user. So, the correct option is (a).

QUESTION 6:

_____ ensures the ability to exchange / obtain the information to be “consumed”.

- a. Data Level Interoperability
- b. Security Level Interoperability
- c. Service Level Interoperability
- d. None of the above

Correct Answer: c**Detailed Solution:**

Service Level Interoperability ensures the ability to exchange / obtain the information to be “consumed”. So, the correct option is (c).

 [Download now](#)**QUESTION 7:**

Which of the following statement(s) is/are FALSE about Fog Computing?

- a. Fog nodes present near to the end-user
- b. Fog computing use for real-time applications
- c. Fog nodes' response time is much higher than cloud server
- d. Network routers, WiFi Gateways will not be capable of running applications

Correct Answer: c, d

Detailed Solution:

Fog nodes present near to the end-user, Fog computing use for real-time applications, Fog nodes' response time is much lower than cloud server, network routers, WiFi Gateways will be capable of running applications. So, the correct options are (c), (d).

QUESTION 8:

State Migration happens when

- a. Migrate the partially processed persistent data to a new node due to availability of an executing node
- b. Migrate the partially processed persistent data to a new node due to unavailability of an executing node
- c. Migrate the fully processed persistent data to a new node due to unavailability of an executing node
- d. Migrate the fully processed persistent data to a new node due to availability of an executing node

Correct Answer: b

Detailed Solution:

State Migration happens due to unavailability of an executing node, there is a need to migrate the partially processed persistent data to a new node. So, the correct options are (b).



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Detailed Solution:

State Migration happens due to unavailability of an executing node, there is a need to migrate the partially processed persistent data to a new node. So, the correct options are (b).



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QUESTION 9:

Geographical distribution of server nodes is _____ in Fog Computing and _____ in Cloud Computing.

- a. Centralized, Distributed
- b. Centralized, Centralized
- c. Distributed, Centralized
- d. Distributed, Distributed

Correct Answer: c**Detailed Solution:**

Geographical distribution of server nodes is Distributed in Fog Computing, and Centralized in Cloud Computing. So, the correct option is (c).

QUESTION 10:

Which of the following is/are the challenge(s) of Geospatial Cloud?

- a. Scaling of Spatial Databases
- b. Policy management among the tenants
- c. Implementation of Spatial Databases
- d. None of the above

Correct Answer: a, b, c**Detailed Solution:**

Challenges of Geospatial Cloud are as follows-

- 1. Implementation of Spatial Databases
 - 2. Scaling of Spatial Databases
 - 3. Policy management among the tenants
- So, correct options are (a), (b), (c).

*****END*****



Cloud Computing
Assignment- Week 7
TYPE OF QUESTION: MSQ

Number of questions: 10

Total mark: 10 X 1 = 10

QUESTION 1:

Fill in the blanks in the light of User Mobility:

The lack of effective handoff mechanisms in WiFi networks as users move rapidly causes an _____ in the number of packets _____ .

- a. decrease, losses
- b. increase, losses
- c. increase, gains
- d. no variation, gains

Correct Answer: b

Detailed Solution: The lack of effective handoff mechanisms in WiFi networks as users move rapidly causes an increase in the number of packet losses.

QUESTION 2:

Choose the correct option.

How to evaluate Mobile Cloud Computing performance?

- (i) Energy Consumption
 - (ii) Security
 - (iii) Time to Completion
 - (iv) Monetary Cost
-
- a. only I and II
 - b. only II and IV
 - c. only I, II and IV
 - d. I, II, III, IV

Correct Answer: d

Detailed Solution: Mobile Cloud Computing performance is evaluated with energy consumption, security, time to completion and monetary cost.

 Save**QUESTION 3:**

What is/are the key component(s) of Mobile Cloud Computing?

- a. Profiler
- b. Solver
- c. Synchronizer
- d. All of the above

Correct Answer: d

Detailed Solution: The key components of Mobile cloud computing (MCC) are profiler, solver and synchronizer.

QUESTION 4:

Which of the following is/are advantage(s) of Mobile Cloud Computing?

- a. Extending battery lifetime
- b. Improving security
- c. Improving Reliability and Availability
- d. None of the above

Correct Answer: a, c

Detailed Solution: Extending battery lifetime, improving reliability and availability are the advantages of Mobile Cloud Computing.

QUESTION 5:

Offloading is beneficial when _____ amounts of computation are needed with relatively _____ amounts of communication.

- a. Large, small
- b. Small, large
- c. Small, does not depend
- d. Does not depends, small

Correct Answer: a

Detailed Solution: Offloading is beneficial when large amounts of computation C are needed with relatively small amounts of communication.



Detailed Solution: Offloading is beneficial when large amounts of computation are needed with relatively small amounts of communication.



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QUESTION 6:

Which of the following is/are true?

- a. In cloud computing, the distance between the client and server is over multiple hops.
- b. In fog computing, the distance between the client and server is over multiple hops.
- c. In cloud computing, the distance between the client and server is over a single hop.
- d. In fog computing, the distance between the client and server is over a single hop.

Correct Answer: a, d

Detailed Solution: In cloud computing distance between the client and server is measured through multiple hops and in fog computing the distance between the client and server is measured through a single hop.

QUESTION 7:

Which of the following is/are fog devices?

- a. Cellular base stations
- b. Network routers
- c. WiFi Gateways
- d. None of these

Correct Answer: a, b, c

Detailed Solution: Cellular base stations, Network routers, WiFi Gateways are a few of the fog devices.

QUESTION 8:

What is/are true about cloudlets?

- a. Increases the latency in reaching the cloud servers
- a. Reduces the latency in reaching the cloud servers
- b. Resides far from the mobile devices
- c. Resides near to the mobile devices

Correct Answer: b, d

Detailed Solution: Cloudlet reduces the latency in reaching the cloud servers and it resides near to the mobile devices.



QUESTION 9:

Match the following:

List – I	List – II
1. Data Level Interoperability	i. Ability to exchange / obtain the information to be consumed
2. Service Level Interoperability	ii. Ability to exchange information in a reliable and trustworthy fashion
3. Security Level Interoperability	iii. Ability to "consume" the information

- a. 1. (ii), 2. (iii), 3. (i)
- b. 1. (iii), 2. (i), 3. (ii)
- c. 1. (i), 2. (ii), 3. (iii)
- d. 1. (iii), 2. (ii), 3. (i)

Correct Answer: b

Detailed Solution: Data Level Interoperability is the ability to "consume" the information. Service Level Interoperability is the ability to exchange / obtain the information to be consumed. Security Level Interoperability is the ability to exchange information in a reliable and trustworthy fashion.

QUESTION 10:

Which of the following aspect(s) is/are present in context-aware dynamic parking service case study?

- a. Decision making of traffic authorities
- b. Reservation service process
- c. Context-aware optimization
- d. None of the above

Correct Answer: a, b, c

Detailed Solution: Context-aware dynamic parking service considers decision making of traffic authorities, reservation service process and context-aware optimization

*****END*****

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