

Section- A

3 x 2 = 6 Marks

Note: Attempt All Three Questions.

- I. A company interested in cloud computing is looking for a provider who offers a set of basic services such as virtual server provisioning and on demand storage that can be combined into a platform for deploying and running customized applications. What type of cloud computing delivery model fits these requirements? What are the different billing options available with end users while using services of public cloud?
- II. Can community cloud be formed using public cloud? Justify.
- III. Four different companies provide Storage as a Service capabilities:
 - a. Company A stores user data in its primary data center in New York and replicates the data to a backup data center also in New York.
 - b. Company B stores user data in its primary data center in Chicago and replicates it to a data center in Atlanta.
 - c. Company C stores user data in its primary data center in Los Angeles and stores replicas in the same data center.
 - d. Company D stores user data in its primary data center in St Louis and does not replicate the data.

Which company is likely to provide the highest availability? Justify your answer.

- I.** What is the impact of virtualization on cost? How many Virtual Machines can run on one physical machine? Justify your answer.
- II.** You are a system administrator of the organization ABC. The organization wants to implement virtualization to help its team working offshore. What kind of virtualization will you consider? What will be the challenges that as a system administrator you have to consider?
- III.** What is VM migration? Differentiate between
- a. Pre-copy and Post Copy Migration.
 - b. Hot and cold Migration.

Section – C

Note: Attempt Any Three Questions.

3 x 5 = 15 Marks

- I.** You are a member of a 4 - member project team. During the Covid-19 time, all the members are struck in their native places. With no means of physical meeting, your project has come to a halt. Give the solution how cloud services can help you and your team in this pandemic time.
- II.** Define SOA. Are web services and SOA the same? In SOA do we need to build a system from scratch?
- III.** What are the different factors impacting the performance of VM Migration? Discuss any five.
- IV.** Discuss the following Terms:
- a. Virtual Private Cloud
 - b. Cloud Bursting
 - c. XaaS
 - d. Elasticity and Scalability

Time : 1 Hour

Maximum Marks: 15

Section – A

3 x 2 = 6 Marks

I. What are the factors that lead to the growth of cloud computing? An enterprise needs highly controlled storage and access to their databases as well as managing the infrastructure for web front ends and other applications. They have a large existing IT infrastructure and they are continually expanding the capabilities. Which cloud computing model will satisfy all their current needs and enable them to reduce cost?

II. Differentiate between

- a. Type I and Type II Hypervisors**
- b. Cloud Computing and Grid Computing**

III. Suggest a cloud computing solution to the following:

The mayor of a town wants that everything should be online with its user always accessing the mail on go. The city has a population over 1 million. City employees fulfill a range of important functions – from policing streets to supplying water and power to city residents and businesses, and from operating libraries to designing and building wastewater treatment plants and other public facilities. The mayor want to provide all these employees with modern tools that help them do their jobs The mayor want to reduce the response time of the primary services, users having option of complaining either in the mode of text or by uploading picture.

either in the mode of text or by uploading picture.

Section – B

3 x 3 = 9 Marks

I. What is Full virtualization, Para virtualization and Partial virtualization? Discuss the Hypervisor reference architecture.

II. Compare cloud computing with traditional client server approach. Explain with respect to virtualization:

a. Equivalence

b. Resource control

c. Efficiency

III. Why virtualization acts as a backbone for cloud computing? Discuss the differences between privileged and non-privileged instructions?

Section – A**3 x 2 = 6 Marks**

I. What is multi cloud management system? You are solution architect in an organization that wants to use multi cloud for its business environment. What are the benefits and challenges that you will face as a solution architect?

II. Define SOA. Are web services and SOA the same? In SOA do we need to build a system from scratch?

III. With respect to SaaS, discuss the following terms:

a. Open SaaS

b. Web OS

- I. What are the different billing options available with end users while using services of public cloud? Can community cloud be formed using public cloud? Justify.
- II. Based on Total Cost of Ownership and Return on Investment, out of public and private cloud which will be more economical to end user. Elaborate your answer.
- III. Four different companies provide Storage as a Service capability:
 - Company A stores user data in its primary data center in New York and replicates the data to a backup data center also in New York.
 - Company B stores user data in its primary data center in Chicago and replicates it to a data center in Atlanta.
 - Company C stores user data in its primary data center in Los Angeles and stores replicas in the same data center.
 - Company D stores user data in its primary data center in St Louis and does not replicate the data.

Which company is likely to provide the highest availability? Justify your answer.

Section B

Note: Attempt All Questions

(3x3=9)

- I. Differentiate between
 - a. Type I and Type II Hypervisors
 - b. Cluster Computing and Grid Computing

- II. Discuss the Hypervisor reference architecture. Compare cloud computing with traditional computing.
- III. What are the factors that lead to the growth of cloud computing? An enterprise needs highly controlled storage and access to their databases as well as managing the infrastructure for web front ends and other applications. They have a large existing IT infrastructure and they are continually expanding the capabilities. Which cloud computing model will satisfy all their current needs and enable them to reduce cost?

Section C

Note: Attempt Any Three Questions

(3x5=15)

- I. Define Hypervisor. How Hypervisors are different from Virtual Machine? Specify the key components of VM infrastructure?
- II. What is the usage of virtualization platform in implementing cloud? How resource virtualization can help an organization to reduce the cost?
- III. Discuss the three layers of cloud deployment model. What does each layer provide to the user? Discuss full virtualization, para virtualization, and partial virtualization.
- IV. Compare the cost of Scaling the Hardware in traditional and cloud? Which one is more beneficial and why?

B.Tech CSE, III Year, VI Semester
BCSE 0207 CLOUD COMPUTING

Time: 2 Hours

Maximum Marks: 30

Section – A

3 X 5 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Explain XaaS. Also, explain at least five different types of services that falls in the category of XaaS.	3	2	U	C
2	Compare desktop virtualization with the application virtualization.	3	3	An	C
3	Explain different types of Cloud deployment models with the help of examples.	3	2	U	C
4	Identify the different challenges that the organization must consider before going to cloud if it wants to replace its legacy system with cloud solution.	3	4	Ap	P
5	Explain the differences between cloud & virtualization. Also, explain the fields where cloud and virtualization overlap.	3	3	U	C

Section – B

5 X 3 = 15 Marks

No.	Detail of Question	Marks	CO	BL	KL
1	Determine the types of virtualization an organization must use to set up its offices in different part of the world.	5	1	E	D

	Justify your answer with proper reasoning. Also, estimate the cost impacts of proposed virtualization.				
2	An enterprise needs highly controlled storage and access to their databases as well as managing the infrastructure for web front ends and other applications. They have a large existing IT infrastructure and they are continually expanding the capabilities. Which cloud computing model will satisfy all their current needs and enable them to reduce cost? Justify your answer.	5	2	E	M
3	Discover the relationship between cloud computing, client server model, cluster computing, grid computing and utility computing?	5	3	An	F