SOMAIYA
VIDYAVIHAR UNIVERSITY

Semester: January 2023 –May 2023		
Maximum Marks: 100	Examination: ESE Examination	Duration:3 Hrs.
Programme code: 01 Programme: B.Tech (COMP.)	Class: Third Year	Semester: VI (SVU 2020)
Name of the Constituent College: K. J. Somaiya College of Engineering	Name of the department: Computer	
Course Code: 116U01E629	Name of the Course: Cloud Computing	
Instructions: 1)Draw neat diagrams 2) All questions are compulsory 3) Assume suitable data wherever necessary		

Que. No.	Question	Max. Marks
Q1	Solve any **Four**	20
i)	Define Cloud Computing. Explain its four deployment models.	5
ii)	Explain the concept of sandboxing in Google AppEngine. Give the examples of some of the operations not allowed in the sandbox.	5
iii)	State IaaS, PaaS and SaaS with respect to what they provide to the customer, product types associated with them and Vendors with their specific products providing them.	5
iv)	Explain how cloud computing technology is useful in productivity related applications giving examples.	5
v)	Explain the concept of containerization. What are its advantages over virtualization?	5
vi)	An eCommerce company needs to build its own IT infrastructure so as to facilitate scalability when needed and maximum uptime for its services. Further, it wants to provision the computing resources to all its departments like R&D, Analytics, Marketing etc. from the same infrastructure. It is desirable that the development work, experimentation going on in the different departments is properly isolated in their respective VMs and the problem in any VM doesn't affect the functioning of VMs of the other departments. Moreover, it would like the VMs to be independent of any host OS so as to make them isolated from its limitations. The company would like to buy heterogeneous types of processors so that it can cater to all kinds of computing needs. The company is also ready to recruit the experts for deployment and maintenance if all the above-mentioned requirements lead to complexity. Recommend the virtualization solution including mechanism, structure of virtualization for this company. Clearly justify your choice by stating how it addresses each specification given above.	5

Que. No.	Question	Max. Marks
Q2 A	Solve the following	10
i)	Explain the concept of Federated clouds. Explain the needs in cloud computing that leads to the concept of Federated Cloud.	5
ii)	What is energy efficient computing? Why is it fundamental in Cloud Computing?	5
	OR	
Q2 A	Explain the Market Oriented Cloud Computing model with a neat diagram.	10
Q 2 B	Solve any **One**	10
i)	Explain the following with respect to Amazon S3: a) Resource naming, b) Buckets, c) Objects and Metadata, d) Access control and security.	10
ii)	Explain the architecture of Google AppEngine with a neat diagram.	10

Que. No.	Question	Max. Marks
Q3	Solve any **Two**	**20**
i)	Compare Microsoft Hyper V and VMWare vSphere.	10
ii)	Explain the challenges in fully adopting cloud computing. Explain each one giving examples.	10
iii)	What issues/challenges does the logical and operational level of the Cloud Federation Stack address? Explain each one in detail.	10

Que. No.	Question	Max. Marks
Q4	Solve any **Two**	**20**
i)	What are the third-party cloud services? Explain MetaCDN in detail.	10
ii)	Explain the high-level architecture for supporting energy-efficient resource allocation in Green Cloud Computing infrastructure with a neat diagram. Explain each component in detail.	10
iii)	Explain the Amazon EC2 instance life cycle.	10

Que. No.	Question	Max. Marks
Q5	Attempt any **four** OF Following :	**20**
i)	What do you understand by the term service with respect to cloud computing? What are the characteristics of a good service? Explain each characteristic in detail giving examples.	5
ii)	Define virtualization. Explain in brief the desktop, network, data and application virtualizations.	5
iii)	Explain the application services available in Google AppEngine.	5
iv)	Explain how cloud computing technology is useful in media applications giving examples.	5
v)	What is the vendor lock-in problem? What effect does it have on the commercial aspects of Cloud Computing?	5
vi)	Explain the concept of Virtual Market Place. What are its main features?	5