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ANNA UNIVERSITY (UNIVERSITYDEPARTMENTS)

B.E./B.Tech /B.Arch (Full-time)-ENDSEMESTEREXAMINATIONS, DEC 2023

Computer Science and Engineering
VII Semester
CS6006 - CloudComputing

(Regulation2018-RUSA)

Time: 3 hrs

Max.Marks:100

CO1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
CO2	Learn the key enabling technologies that help in the development of cloud.
CO3	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models.
CO4	Discuss the core issues of cloud computing such as resource management and security.
CO5	Install and use current cloud technologies.
CO6	Establish their own cloud environment using Open Stack and work on it.

BL-Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART-A(10x2=20 Marks)

(Answer All Questions)

Q. No	Questions	Marks	CO	BL
1	What are the challenges and risks in cloud based solutions?	2	CO1	L1
2	Discuss the importance of service contracts in Service-Oriented Architecture (SOA) and how they contribute to the success of SOA implementations.	2	CO2	L4
3	What is a Hypervisor in Cloud Computing and its types?	2	CO2	L2
4	List out the key highlights of Open Stack.	2	CO1	L2
5	Differentiate the Physical and Cyber Security Protection at Cloud/Data Centers.	2	CO4	L2
6	How data is secured in Cloud? Give an example.	2	CO4	L3
7	Define the functions of Map and Reduce.	2	CO3	L3
8	State the difference between SLO and SLA.	2	CO4	L2
9	Write a short note on cloud security defense strategies.	2	CO4	L2
10	Why there is need for Edge Computing?	2	CO4	L3

PART-B(8x8=64 Marks)

(Answer ANY 8 Questions)

Q. No	Questions	Marks	CO	BL
11	Describe the various layers and type of Cloud Computing.	8	CO1	L2

12	Describe the SOAP messages exchanged during a hypothetical web service method invocation. Provide the XML format and highlight the operations associated with each message.	8	CO2	L3
13	Elaborate the various levels of virtualization ranging from hardware to application in five abstraction levels.	8	CO3	L2
14	Draw and Explain the Cloud architecture design in OpenNebula.	8	CO6	L2
15	Explain the Live VM Migration steps in detail with relevant diagrams wherever necessary.	8	CO6	L3
16	Explain why CDMI and OCCI interoperating in an integrated cloud system.	8	CO5	L5
17	Explain the data processing actions of map and reduce tasks in the context of the MapReduce programming model. Provide clear steps on how each mapper processes and prepares intermediate data for use by reducers. Also, describe the role of reducers in consolidating and finalizing the results.	8	CO5	L5
18	Provide a comprehensive explanation of Service Level Agreement (SLA) in the context of cloud computing. Cover the various types of SLAs, their life cycle, and the management aspects associated with SLAs in the cloud environment.	8	CO4	L3
19	i) Write in detail the performance metrics in HPC systems. ii) Write a short about the QoS in Cloud Computing.	4	CO6	L4
20	Elaborate the key features and benefits of Amazon Web Services (AWS) as an Infrastructure as a Service (IaaS) provider.	8	CO3	L5
21	In a real-time cloud computing environment, describe how Docker containers contribute to the efficient deployment and scalability of applications. Include key concepts such as container orchestration, image management, and the advantages of using Docker in a cloud-native architecture. Additionally, discuss any challenges and best practices associated with deploying Dockerized applications in a cloud setting.	8	CO6	L4
22	What are federated clouds? With neat diagram explain the cloud federation stack.	8	CO6	L4

PART-C(2x8=16 Marks)

(Compulsory)

Q.No	Questions	Marks	CO	BL
23	Explain the virtualization structure for i) Binary Translation with Full Virtualization.(4) ii) Para-Virtualization with Compiler Support.(4)	8	CO5	L6
24	Discuss why Automated Policy-Based Management and Cloud Management Standards are Important and give proper justification.	8	CO5	L5