

II SEMESTER EXAMINATION, 2022 – 23
M.Tech Ist year – Computer Science
CLOUD COMPUTING

* Duration: 3:00 hrs

Max Marks: 100

Note: - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

Q 1.	<p>Answer any four parts of the following.</p> <p>a) Define cloud computing and identify its core features.</p> <p>b) What is cloud federation? What are the motivations leading to the creation of a federation?</p> <p>c) What is the difference between cloud bridging and cloud bursting?</p> <p>d) What are the types of applications that can benefit from cloud computing?</p> <p>e) What is Storage-as-a-Service ? List its advantages.</p> <p>f) List some possible security challenges in cloud?</p>	5x4=20
Q 2.	<p>Answer any four parts of the following.</p> <p>a) Explain the characteristics of Big Data. How Big Data and Hadoop are related?</p> <p>b) What is Google App Engine? What kind of services it offer?</p> <p>c) What are the possible legal issues and security concern arising in the context of a cloud federation?</p> <p>d) What are the major distributed computing technologies that led to cloud computing?</p> <p>e) Explain the following characteristics of cloud.</p> <p>i. Elasticity ii. On-demand resource provisioning.</p> <p>f) What are the types of applications that can benefit from cloud computing?</p>	5x4=20
Q 3.	<p>Answer any two parts of the following.</p> <p>a) What is Virtual Machine? Describe VM Provisioning and VM Migration Services with suitable examples.</p> <p>b) What is the difference between parallel and distributed computing? Discuss data parallelism and process parallelism.</p> <p>c) Explain the NIST cloud computing reference architecture along with a diagram.</p>	10x2=20
Q 4.	<p>Answer any two parts of the following.</p> <p>a) What is virtualization? List and discuss different types of virtualization.</p> <p>b) What is the role of Hypervisor in VM management? Explain Type I and Type2 Hypervisor with diagrams.</p> <p>c) What is MapReduce? Explain how map and reduce work? When we submit a MapReduce job, ideally how many map and reduce tasks run in Hadoop?</p>	10x2= 20
Q 5.	<p>Answer any two parts of the following.</p> <p>a) What does Infrastructure-as-a-Service, Platform-as-a-service and Software-as-a-service refer to? Discuss main characteristics and implementation of each.</p> <p>b) Discuss the different cloud deployment models (public, private and hybrid). Which is the most common scenario for private cloud? What kinds of needs are addressed by hybrid clouds?</p> <p>c) What is SOA (Service oriented Architecture) and what are the different components of SOA. List advantages and disadvantages of SOA.</p>	10x2= 20