Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree (S, FE) Examination May 2024 (2019 Scheme)

Course Code: CDT401
Course Name: CONCEPTS IN CLOUD COMPUTING

Max. Marks: 100   **Duration: 3 Hours**

PART A
Answer all questions, each carries 3 marks.   Marks

1	Explain the concept of Single System Image(SSI) in a computing cluster	(3)
2	List the essential features of cloud computing	(3)
3	Mention at least three levels at which virtualization may be implemented.	(3)
4	Is virtualization essential for cloud computing? Explain.	(3)
5	An organization has decided to migrate their IT infrastructure to the cloud. Which are some of the open-source software architectures they can rely on to setup a private cloud environment?	(3)
6	Name three Software-as-a-Service solutions offered by Google.	(3)
7	Explain the data types in Pig Latin	(3)
8	Name the three main types of data to store which, Big Table was developed by Google.	(3)
9	Define "trust" in a computer science context.	(3)
10	Explain the following concepts:	(3)

    i.   Confidentiality

    ii.   Integrity

    iii.   Availability

PART B
Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Differentiate Grid computing and Cloud computing	(7)
	b)	Discuss the key features of Infrastructure as a Service(IaaS).	(7)

OR

12	a)	Write a note on the different computing practices and technologies that lead up to cloud computing	(8)

b) Explain Service Oriented Architecture(SOA) and discuss how it applies to cloud computing. (6)

Module II

13 a) With a neat diagram, explain the Xen virtualization architecture. (7)

b) In a fully virtualized environment, privileged/critical instructions from the guest OS threatens the security of the system. How does the hypervisor protect the hardware in this scenario? Explain. (7)

OR

14 a) Is it possible to emulate the CPU? Explain some of the possible methods for the virtualization of CPU. (7)

b) Discuss the various Virtual Machine architectures with the help of a diagram. (7)

Module III

15 a) Explore the different disciplines of resource provisioning in the cloud. (8)

b) Explore the services offered by Amazon Web Services. Discuss at least three services. (6)

OR

16 a) What is Openstack compute? Explain it's architecture with a diagram and discuss the concepts used in its architecture. (8)

b) Discuss about the Market-Oriented cloud architecture (6)

Module IV

17 a) How is fault tolerance assured in Hadoop Distributed File System? Elaborate. (7)

b) Write a MapReduce procedure to count the anagrams(words formed by rearranging the letters of another word) in a text document. (7)

OR

18 a) Discuss the architecture of MapReduce in Hadoop with the help of a diagram. (8)

b) Consider a group project with members from different parts of the world working on it. Discuss how they can collaborate on the project using cloud-based apps. (6)

Module V

19 a) Discuss about some of the major security challenges that would concern a company when migrating their business to the cloud. (9)

b) Explain the importance of Security monitoring in SaaS security. (5)

OR

20 a) Explain about the evidence collection and examination and analysis of collected   (7)
       data cloud forensics.

    b) Explore Virtual Machine security.   (7)

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