Question Paper

MANIPAL ACADEMY OF HIGHER EDUCATION

FIFTH SEMESTER B.TECH END SEMESTER EXAMINATIONS, NOV 2022
CIOUD COMPUTING [DSE 3157]

Marks: 50   **Duration: 180 mins.**

A

Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

1)	A)	Classify the cloud computing services based on its abstraction level of the capability provided. Also, differentiate each classes based on its advantages and disadvantages.	(5)
	B)	Explain the entities and working mechanism of the cloud Infrastructure management.	(3)
	C)	"Elasticity is one of the basic features of the cloud computing technology." Justify the statement with an example.	(2)
2)	A)	Explain the challenges of traditional data centers which enforce any organization to adopt Hyperconverged Infrastructure.	(5)
	B)	Discuss the hardware and software boundaries of any computing system which need to be considered for the implementation of virtualization.	(3)
	C)	Differentiate between abstraction and virtualization.	(2)
3)	A)	Explain the process involved in the Virtual machine provisioning from service request to termination.	(4)
	B)	Explain the working mechanism of various types migration techniques.	(3)
	C)	With a help of an example, explain how virtualization provides increased security	(3)
4)	A)	Explain the working mechanism of technologies that are used to design software system to support interoperable machine-to-machine interaction over a network.	(5)
	B)	Discuss the different categories of information that contained by registries to discover service resources.	(3)
	C)	Discuss the components of distributed job execution environment.	(2)
5)	A)	Explain the work flow of first level attack prevention of any Cloud service. Justify its role and requirement.	(5)
	B)	*"Healthy Tech. Pvt. Ltd." company provides a cloud service, 'MY HEALTH,' for e-healthcare*	(3)

*services. The company implemented a two-factor smart card + password authentication mechanism named **'Protocol X'** to access the service. A user can log in only if he/she have a registered smart card with a valid password.*

In 'Protocol X,' there is a vulnerability that has been discussed below:

The attacker can steal the user's successful authentication request message during the communication and later he/she can resend the same message to the server. With this method, an attacker can impersonate the authorized user and authenticated by the server".

Based on the vulnerability discussion, identify the security attack on the protocol 'X.' Also, explain the nature and impact of the identified attack on the cloud system.

C)   Identify the Hardware architecture and its working mechanism to solve the equation $y^2 = x^3 + ax + b$.   (2)

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