NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: V - THEORY EXAMINATION (2024 - 2025)

Subject: Cloud Virtualization

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

1-a. In a _____ scheme, the VM is installed as a Type 1 Hypervisor directly onto the hardware.(CO1,K1)

1

(a) paravirtualization

(b) full virtualization

(c) emulation

(d) None of these

1-b. HAL stands for (CO1,K1)

1

(a) Hardware abstraction Layer

(b) High abstraction Layer

(c) Hardware abstraction level

(d) High abstraction Level

1-c. _____ as a utility is a dream that dates from the beginning of the computing industry itself.(CO2,K1)

1

(a) Model

(b) Computing

(c) Software

(d) All of the mentioned

1-d. Cloud computing is a _____ system and it is necessarily unidirectional in nature.(CO2,K1)

1

(a) stateless

(b) stateful

(c) reliable

(d) all of the mentioned

1-e. If virtualization occurs at application level, OS level and hardware level, then such service in cloud is (CO3,K1)   1

(a) IAAS

(b) SAAS

(c) PAAS

(d) CAAS

1-f. Amazon Web Services& newest encryption tool is. (CO3,K1)   1

(a) Amazon Elastic Block Storage Encryption

(b) AWS Identity and Access Management

(c) Amazon S3

(d) Py Charm

1-g. Amazon S3 is a _____.(CO4,K1)   1

(a) Relational database

(b) Key-Based object store

(c) Domain System

(d) Content Delivery Network

1-h. The following is not true about Amazon Glacier.(CO4,K1)   1

(a) Optimized for data that is infrequently accessed

(b) Secure and durable storage for data archiving and backup

(c) Services enables rapid disaster recovery

(d) Optimized for data for which retrieval times of several hours are suitable

1-i. Point the cloud function is used to support Elastic Load Balancing.(CO5,K1)   1

(a) CloudWatch

(b) EBS

(c) S3

(d) AWS import/Export

1-j. To prevent messages from being lost or becoming unavailable, all messages are stored _____ across multiple servers and data centers.(CO5,K1)   1

(a) Publicly

(b) Superfluously

(c) Redundantly

(d) Privately

2. Attempt all parts:-

2.a. Define memory virtualization.(CO1,K1)   2

2.b.	Briefly explain about Microsoft Windows Azure.(CO2,K2)	2
2.c.	Describe AWS Elastic Beanstalk. (CO3,K3)	2
2.d.	Write short notes on Amazon S3 Event notifications.(CO4,K2)	2
2.e.	Explain Simple Queue Service (SQS). (CO5,K2)	2

SECTION-B   30

3. Answer any <u>five</u> of the following:-

3-a.	Differentiate between native Virtualization and Emulation. (CO1,K3)	6
3-b.	Briefly define Instruction Set Architecture Level in virtualization.(CO1,K2)	6
3-c.	Explain about Virtual Machine Manager with a suitable example and proper diagram.(CO2,K3)	6
3-d.	Briefly explain Distributed Defense against DDoS Flooding Attacks.(CO2,K2)	6
3-e.	Explain AWS Cloud Digital Interface Software Development Kit.(CO3,K3)	6
3.f.	Explain the storage classes available in Amazon S3 in detail. (CO4,K2)	6
3.g.	Explain Elastic Load Balancing (ELB) with suitable example.(CO5,K3)	6

SECTION-C   50

4. Answer any <u>one</u> of the following:-

4-a.	Explain full virtualization and para virtualization. (CO1,K2)	10
4-b.	Explain Role of Hypervisor in Virtualization Process with suitable example. (CO1,K2)	10

5. Answer any <u>one</u> of the following:-

5-a.	Is virtualization support is needed to achieve fast cloning of VMs? Explain how VM cloning can enable fast recovery. (CO2,K3)	10
5-b.	Explain Infrastructure as a Service (IaaS) in detail with a suitable example. (CO2,K2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Describe features of IAM in creating role based ACL with suitable diagram. (CO3,K3)	10
6-b.	Explain various types of Amazon EC2 instances and their essential features.(CO3,K2)	10

7. Answer any <u>one</u> of the following:-

7-a.	Explain various database types (Unstructured, Semistructured, and Structured data) in detail. (CO4,K3)	10
7-b.	Write short notes on the storing data in (a) EFS (b) EBS (c) S3. (CO4,K2)	10

8. Answer any <u>one</u> of the following:-

8-a.	Describe function of launch configuration in Amazon EC2 Auto Scaling. (CO5,K2)	10
8-b.	Explain the Cloud Application Programming Interface (Cloud API) with a suitable example. (CO5,K3)	10